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Environmental Audit
Committee

Green Jobs and Skills

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Oral and written evidence

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The Environmental Audit Committee

The Environmental Audit Committee is appointed by the House of Commons to consider to what extent the policies and programmes of government departments and non-departmental public bodies contribute to environmental protection and sustainable development; to audit their performance against such targets as may be set for them by Her Majesty's Ministers; and to report thereon to the House.

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The following memoranda have been reported to the House, but to save printing costs they have not been printed and copies have been placed in the House of Commons Library, where they may be inspected by Members. Other copies are in the Parliamentary Archives, and are available to the public for inspection. Requests for inspection should be addressed to The Parliamentary Archives, Houses of Parliament, London SW1A 0PW (tel. 020 7219 3074). Opening hours are from 9.30 am to 5.00 pm on Mondays to Fridays.

Memorandum submitted by Environmental Innovations Limited

Oral evidence

Taken before the Environmental Audit Committee on Tuesday 16 June 2009

Members present

Mr Tim Yeo, in the Chair

Colin Challen
Mark Lazarowicz

Dr Desmond Turner
Joan Walley

Memorandum submitted by the Institute for Public Policy Research

1. SUMMARY

- Rather than focusing on “green” jobs, the Low Carbon Industrial Strategy should consider what the impact of a transition to a low-carbon economy will mean for jobs and employment across the economy.
- The Strategy should contain measures for assisting existing companies in transforming their operations to become low-carbon and for supporting people currently working in sectors that will decline.
- The policy framework for creating new low-carbon jobs should be targeted at strategic sectors and should contain credible long-term targets, measures to assure the domestic market and targeted support measures.
- New low-carbon jobs are likely to provide good quality jobs. Some areas have the potential to provide job opportunities for low skilled workers and others for female workers, however, opportunities to these groups need to be opened up across all sectors.
- A more strategic approach to skills supply is needed, which targets specific sectors and levels where there is evidence of specific skills shortages.

2. ABOUT IPPR

2.1 The Institute for Public Policy Research (ippr) is the UK’s leading progressive think tank, producing cutting edge research and innovative policy ideas for a just, democratic and sustainable world. Ippr has a strong track record of policy-focused research on climate change, economy and business, and welfare and poverty. We are currently engaged in a research project investigating the potential for creating “green-collar jobs” in the UK. The first output from this work—a study of job creation potential in the offshore wind sector—was published in April 2009.¹ We are also running a programme of work called “Tomorrow’s Capitalism”, which is exploring the structure and future of our economic system.²

3. INTRODUCTION

3.1 The prospect of “green jobs” that contribute towards tackling the problems of rising unemployment and environmental degradation is an appealing one. However, there is no accepted definition of what “green jobs” actually are. The term has variously been used to refer to jobs in environmental services (such as waste treatment, anti-pollution measures and water services), new renewable energy plant and other low-carbon energy sources, production of low-carbon or environmentally friendly products, installation of energy efficiency measures, environmental consulting and carbon finance. Some definitions extend as far as including services like public transport that offer a low-carbon alternative to the car.

3.2 Ippr’s view is that rather than trying to draw a boundary around a set of job titles that can be labelled as “green”, a more appropriate starting place is to think about what the impact of moving to a low-carbon economy is likely to be on jobs and employment. The Climate Change Act sets out very challenging carbon reduction targets for the UK and this is likely to affect existing businesses and jobs in three ways. First, we can expect to see a growth of new industries and jobs associated with low-carbon energy generation and energy efficiency measures, for example in renewable energy or building technologies. Second, some existing industries will have to change in nature if they are to remain competitive in a low-carbon world. For example, manufacturers of gas guzzling cars will need to switch to producing low—and zero-carbon

¹ Bird J (2009) *Green Jobs: Prospects for creating jobs from offshore wind in the UK* London: ippr, available at: <http://www.ippr.org/publicationsandreports/publication.asp?id=658>

² See <http://www.ippr.org/tomorrowscapitalism/>

vehicles. Carbon intensive industries—such as steel and cement—also fall within this category as they will need to develop new, lower-carbon manufacturing techniques. Finally, some industries and jobs will decline and disappear. For example, jobs in offshore oil and gas will eventually cease to exist.

3.3 In this sense, *all* jobs will need to be “green” in the future, otherwise they will not be sustainable in a low-carbon economy.

4. LOW CARBON INDUSTRIAL STRATEGY

4.1 The Government’s Low Carbon Industrial Strategy Vision is right to acknowledge that the transition to a low carbon world will transform our whole economy. However, much of the focus of the Vision document³ is on the new opportunities for job creation, with little consideration of industries that are likely to experience change or even decline. The Industrial Strategy needs to contain proposals both to create new jobs *and* to manage the transition from high—to low-carbon for existing companies. This suggests that a comprehensive low-carbon industrial strategy will need to achieve four objectives. It should:

- Stimulate the development and uptake of the low-carbon infrastructure—such as renewable energy generation—that underpins the rest of the economy.
- Stimulate innovation and rapid uptake of new low-carbon goods and services.
- Enable existing industries to achieve low-carbon operating models.
- Ensure viable pathways for people working in declining high-carbon industries to move into new jobs.

4.2 The Strategy should take the carbon reduction budgets and pathways set out in the Committee on Climate Change’s 2008 report as a starting point and then needs to take a strategic approach to developing new industries and supporting existing industries in moving to low-carbon practices. In the past, government has tended to favour a “horizontal” approach to industrial and technology policy (where policies are not targeted at any particular sector or industry), but this can result in limited resources being spread too thinly and a failure to recognise demand side as well as supply side measures.⁴ The Strategy should identify priority areas based on three criteria: potential for carbon reduction, potential for job creation and potential to provide decent working conditions. Interventions should then be targeted on these areas.

4.3 In addition to thinking about new job opportunities, the Strategy must consider existing industries and jobs that will disappear in a low-carbon world. Trade Unions⁵ and the ILO⁶ have highlighted the need for a “just transition” to a low carbon economy. This means ensuring that measures are in place to protect people who may lose their jobs as a result of mitigation efforts. For example, this will include working with employees and Trade Unions to determine where new jobs might be found, ensuring appropriate retraining opportunities are available, providing relocation support and providing adequate financial assistance where it is not possible for people to move immediately into new employment.

5. IMPACT OF THE GOVERNMENT’S LONG-TERM POLICY FRAMEWORK ON LOW-CARBON INVESTMENT AND EMPLOYMENT IN ENVIRONMENTAL INDUSTRIES

5.1 ippr conducted a study into the potential for creating jobs in the offshore wind sector in early 2009.⁷ This research investigated whether the Government’s current policy framework would be sufficient to encourage investment and employment in this area. Our study identified some positive aspects of the current framework, most notably the Climate Change Act and targets for 2020 and 2050, which have sent a clear signal to the private sector that government is serious about tackling climate change and reducing the UK’s greenhouse gas emissions. However, three areas were identified where policy was felt to be lacking.

5.2 The first was the market. There are a number of factors that are contributing to uncertainty about the amount of offshore wind capacity that is likely to materialise in the future and the timescale on which it will be built. This in turn makes supply chain industries nervous about setting up in the UK since the market for their products is not guaranteed. The main causes of this market uncertainty are: concerns about whether the grid will be upgraded to accommodate offshore wind power and when this is likely to happen; doubt about whether the new Infrastructure Planning Committee will speed up planning processes as intended; and whether bottlenecks in the supply chain can be overcome.

³ HM Government (2009) *Low Carbon Industrial Strategy: A Vision*, London: The Stationery Office Limited, available at: <http://www.berr.gov.uk/files/file50373.pdf>

⁴ Watson J (2008) *Setting Priorities in Energy Innovation Policy: Lessons for the UK* Cambridge, MA: ETIP Discussion Paper, Belfer Center for Science and International Affairs, Kennedy School of Government, Harvard University http://belfercenter.ksg.harvard.edu/files/2008_Watson_Priorities.pdf

⁵ TUC (2008) *A Green and Fair Future For a Just Transition to a Low Carbon Economy* London: TUC, available at: <http://www.tuc.org.uk/touchstone/Justtransition/greenfuture.pdf>

⁶ UNEP/ILO/IOE/ITUC (2008) *Green Jobs: Towards decent work in a sustainable, low-carbon world* available at: http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_098503.pdf

⁷ Bird J (2009) *Green Jobs: Prospects for creating jobs from offshore wind in the UK* London: ippr, available at: <http://www.ippr.org/publicationsandreports/publication.asp?id=658>

5.3 The second area is around policies that actively promote the industry, or “industrial activism”. Other European countries that have successfully built up their domestic wind industries (such as Denmark, Germany and Spain) have used a number of measures to encourage investment on top of renewable energy targets and financial support mechanisms like feed-in tariffs. These have included financial and tax incentives, infrastructure development and targeted R&D programmes. The UK’s approach in the past has been to use “horizontal” policy measures but there is a need to be more strategic and to target existing support measures better at industries that offer both carbon reduction potential and decent job creation opportunities. Support measures also need to be more visible. For example, financial support for offshore wind is already available in the UK but it is currently spread thinly across a number of different programmes, which makes accessing it complicated and time-consuming. Consolidating this funding into a dedicated support programme would help to make the UK more attractive to potential investors. There is also a need to upgrade strategic infrastructure, such as ports.

5.4 Finally there is a perception that there is a shortage of suitable skills among the workforce. In particular in engineering technicians and in the manufacturing sector more generally. This is addressed in more detail below.

5.5 Our study into offshore wind presents some general lessons for the development of a policy framework to support jobs in environmental industries more broadly:

- Long-term and credible targets are important to send signals to the private sector. The targets set out in the Climate Change Act are a good start, but credible sectoral targets should be developed too (for example, the current targets for delivering offshore wind capacity under Round Three are not felt to be credible)
- The development of any new environmental industry requires a stable and sizeable domestic market. This means developing appropriate economic support mechanisms and working with industry to identify barriers to delivery and policies to overcome them.
- Additional targeted support such as financial and tax incentives, R&D support and infrastructure development will help to attract investment.
- A more strategic approach to skills and training policy is necessary to ensure a lack of skills does not deter investment and that the UK workforce is well placed to benefit from new job opportunities in new industries.

6. NATURE OF NEW JOBS CREATED BY A LOW CARBON INDUSTRIAL STRATEGY

6.1 The growth of low carbon industries offers potential for significant job creation. However, new employment opportunities in low carbon industries need to be accessible to those who need them the most—particularly those who tend to lose out in the current labour market, including women, people with low skills and those with poor work records; and people who have experienced unemployment as a result of this recession. Given the extent of low pay in the UK, policy should also focus on ensuring that new jobs are good quality jobs.

6.2 ippr has carried out new analysis of existing industries to try to gain an insight into the nature of new jobs which are likely to be created by the transition to a low-carbon economy, and which groups might benefit most from the growth in employment in these industries.⁸ We identified 15 industry divisions where employment growth can be expected, which we have summarised into five main industry groups—manufacturing, construction, utilities, wholesale, and business and financial services.

6.3 In carrying out this analysis, ippr had two main concerns:

1. The quality of new jobs created by the low carbon economy: in identifying opportunities for job creation, emphasis should be placed on creating good quality jobs which pay a decent wage, rather than creating jobs that simply add to the already high levels of low pay in the UK.⁹
2. The accessibility of new, good quality jobs to groups who tend to do less well in the labour market, specifically:
 - Women: it is important that new opportunities for job creation do not reinforce the high and enduring gender pay gap, and even play a role in reducing this gap.

⁸ We have done this by assigning a SIC code to each of the low carbon activities identified in the report *Low Carbon and Environmental Goods and Services: An Industry Analysis*, commissioned from Innovas by Berr in 2008. Using this process, we identified 15 SIC industry divisions which are likely to experience employment growth as a result of the expansion of low carbon industries. This method can only provide a guide to the possible nature of new jobs in the low carbon sector, as it is unlikely that new jobs in this sector will be identical to existing jobs. In addition, underlying structural changes in the labour market, such as some “hollowing out” of intermediate level jobs and the gradual decline of manufacturing, may have an impact on the kinds of jobs created in the low carbon sector.

⁹ Previous research by ippr has highlighted the extent of low pay in the UK and raised concerns about the link between low pay, inequality, in-work poverty and poor economic performance within firms, for example, Lawton K (2009) *Nice Work If You Can Get It: Achieving a sustainable solution to low pay and in-work poverty* London: ippr.

- Long-term unemployed/inactive: wherever possible, job creation should benefit people who tend to be excluded from the labour market.
- Low-skilled/those with a poor work record: creating a new set of high-skill jobs in the low carbon sector is attractive, but risks excluding those with low skills or patchy work records. There also needs to be a focus on creating jobs at lower and intermediate levels, alongside career ladders and appropriate workplace training to enable workers to progress if they wish.

6.4 Our analysis, using 2008 data from Labour Force Survey, has enabled us to develop a picture of employment in the sectors which are likely to grow as a result of the expansion of the low carbon economy. Here, we present a summary of our findings for the three industry groups likely to account for the greatest number of new low carbon jobs.¹⁰

6.5 Manufacturing

- Jobs are likely to be created in the manufacture of machinery, electrical equipment, non-metal products, plastics, fabricated metals, refined petroleum products, and motor vehicles.
- The average rate of low pay in these seven industry divisions is well below the national average, at 14 per cent compared to the UK average of 21 per cent, suggesting that these will be good quality jobs.
- Only a fifth of workers in these industries are women, indicating that women may be excluded from new job opportunities in low carbon manufacturing.
- Employment in these manufacturing divisions is evenly spread between higher, intermediate and lower occupational groups, suggesting there will be opportunities for employment at all levels.

6.6 Construction

- Jobs are likely to be created in site preparation, installation and whole-structure construction.
- Only 14 per cent of construction workers are low paid so growth in this sector is also likely to provide good quality job opportunities.
- However, only 14 per cent of the workforce is female, so women may also be excluded from many of the new jobs in this sector.
- The occupational structure in construction is focused on the intermediate level, with many jobs in skilled trades, and a substantial number of jobs in lower occupational groups. This could provide good quality opportunities for those with lower and intermediate skills.

6.7 Business and financial services

- Jobs are likely to be created in this sector in financial services (low carbon finance), architectural and engineering services, computing, R&D and other business services.
- On average, 11 per cent of workers in these 5 industry divisions are currently low paid, so this sector offers good prospects for good quality employment. There are also very few workers in this sector with no qualifications.
- Women currently make up nearly half the workforce in this sector, so the prospects for women to benefit from the expansion of good quality employment is much higher here. However, action will be needed to ensure that women are not concentrated in low paying occupations within this sector.
- The occupational structure of this sector is heavily skewed towards higher occupational groups. This could mean that there are limited opportunities here for low-skilled workers or those with poor work records.

6.8 This brief summary provides some reasons to be positive about the nature of jobs in low carbon industries. All three sectors provide relatively good quality jobs (as measured by the extent of low pay); potential growth in manufacturing and construction offer opportunities for those with lower skills; and growth in business services linked to low carbon industries provides good opportunities for female workers. Clearly, challenges exist, including: opening up job opportunities in manufacturing and construction to women, and in business services for the lower skilled; strengthening career ladders in some sectors to enable low-skilled workers to progress; and ensuring that the welfare and skills systems is capable of supporting the long-term unemployed and inactive into new low carbon jobs.

7. THE UK SKILLS BASE AND THE EFFECTIVENESS OF GOVERNMENT POLICY IN ENHANCE IT

7.1 Given the range of activities which could fall under the “green jobs” heading, there is no single, generic “green” skillset. Jobs are likely to be created in areas as varied as low carbon finance, high-tech manufacturing, management consultancy, R&D, computing and architectural services, and each sector will have its own skills requirements and workforce development needs.

¹⁰ We also have data on the two other industry groups, wholesale and utilities, but have not included them here due to space constraints since fewer jobs are expected to be created in these groups. Service jobs in energy efficiency (such as home energy auditors) are also excluded due to space constraints.

7.2 Previous research by ippr has found that, across the whole labour market, the supply of skills has been outstripping employer demand for skills over the last few decades.¹¹ National surveys also show that employer-reported skills shortages have been falling.¹² This suggests that where skills gaps exist, they are very concentrated and specific.

7.3 This is supported by analysis carried out by the Engineering and Technology Board,¹³ which found shortages of skilled engineering technicians (qualified at below degree level) in certain sectors, but no shortage of graduate-level engineers. This suggests that the perceived shortage of workers with STEM skills—which will be important for some low carbon industries—only operates at certain levels and in certain industries, and does not apply more generally.

7.4 The Migration Advisory Council has also identified a number of occupations which may be needed in the low carbon economy where the UK currently has skills shortages—for example, geologists (needed for geothermal energy projects), high integrity pipe welders (needed to connect consumers to neighbourhood district heating systems) and electricity transmission overhead line workers (needed for upgrading the electricity grid and building connections to new renewable energy sources). While these shortages may be of concern, they are all highly specific shortages requiring uniquely skilled and experienced specialists.

7.5 This is somewhat at odds with the government’s overall approach to workforce skills, which is driven by generic targets which benchmark the UK’s performance against the top performing OECD countries. For example, the government has a target to have over 90 per cent of adults qualified to Level 2 (equivalent to five GCSEs at A–C), and 68 per cent of adults qualified to Level 3 (equivalent to A Level), by 2020.¹⁴ However, these targets say nothing about what kind of qualifications will be achieved, in which industries, and how they will be matched with employer demand.

7.6 We believe that a much more strategic approach to skills supply is needed, which targets specific sectors and levels where there is evidence of specific skills shortages in priority sectors. Such an approach would go hand in hand with a policy of “industrial activism”, as discussed above, and would integrate skills with the other factors that we know are important drivers of productivity and firm success, such as product market strategies, capital investment, R&D and the application of innovation. This strategic approach must also go beyond the demand-led approach which has previously characterised the post-Leitch adult skills agenda. If the UK is to benefit from the growth of the low carbon economy, there needs to be some central oversight of skills provision which allows us to train people for new and emerging jobs, and to coordinate skills provision to meet future demand.

7.7 Despite some useful statements from the government recognising the limits of a purely demand-led system,¹⁵ and a very useful contribution from the UK Commission on Employment and Skills,¹⁶ it is not clear that the government’s approach in England has changed very much in practice. For example, the development of the new Skills Funding Agency still seems to be premised on delivering a demand-led system. Getting the approach right requires the government to achieve a difficult balance between a system based on current and future employer demand but which is not entirely demand-led.

7.8 There is also a danger that the rhetoric around “green” jobs, which tends to paint these jobs as completely new and very high-skilled, gives the impression that significant investment is needed to upskill workers across a range of industries. This is clearly the case for some occupations—like those identified by the ETB and the MAC—but may not apply in many sectors.

7.9 Given the significant fall in demand in the property sector and consequent rise in unemployment in this sector, for example, there is likely to be a sufficient supply of skilled construction workers to support a substantial increase in energy efficiency programmes. This is also likely to be true in the manufacture of alternative-fuel vehicles, given the current position of the UK car industry. In these sectors, it would seem that workers with existing skills could potentially be re-trained without the need for large-scale government investment.

7.10 This need to be realistic and precise about where skills gaps exist and where significant up/re-skilling is needed also feeds into issues of perception about the skills base of the UK workforce. There is some anecdotal evidence that foreign firms are deterred from investing in the UK because they believe there is a

¹¹ Lawton K (2009) *Nice Work If You Can Get It: Achieving a sustainable solution to low pay and in-work poverty* London: ippr

¹² Learning and Skills Council (2008) *National Employer Skills Survey 2007* Coventry: LSC

¹³ ETB (2008) *Engineering UK 2008* London: ETB

¹⁴ UK Commission for Employment and Skills (2009) *Ambition 2020: World class skills and jobs for the UK* Wath-upon-Deane: UKCES

¹⁵ See for example Strategic Skills: Right skills, right place, right time speech by John Denham, 24 October 2008, Centrepoint http://www.dius.gov.uk/news_and_speeches/speeches/john_denham/right_skills

¹⁶ UKCES (2009) *Ambition 2020: World class skills and jobs for the UK* Wath-upon-Deane: UKCES

shortage of STEM skills among the workforce. However, the ETB research shows that shortages of engineering skills are only a problem in certain areas (for example at the technician level), which suggests that we need to create a better understanding of where exactly skills gaps lie. We can then develop a strategy to overcome negative perceptions, together with a targeted approach to addressing genuine skills shortages where they exist.

29 May 2009

Witnesses: **Mr Simon Retallack**, Associate Director and Head of Climate Change, **Ms Jennifer Bird**, Climate Change Research Fellow, and **Ms Kayte Lawton**, Social Policy Researcher, Ippr, gave evidence.

Q1 Chairman: Good morning. I am sorry you had to wait a bit but we had rather more private business than usual to deal with this morning. Welcome to the Committee. We are very glad that you have come in. This is the first of our evidence sessions on this inquiry on green jobs. We have read with interest the memorandum that you sent in. You set out requirements for offshore wind as to how that might be developed and promoted. Do you think that approach that you identify goes wider? Is that general approach also applicable to the whole broader issue of where green jobs can be created?

Mr Retallack: It is a good question to start with because I wanted to establish the limits and scope of our ability to contribute to your hearing today. Both my colleagues to the left and right of me have contributed to the wider project that we are halfway through which is looking at green jobs potential in the UK as a whole across different sectors, especially energy efficiency and renewable heat, with my colleague, Kayte Lawton, specialising particularly in issues around the welfare system skills and the employment, specific nature of jobs issues, and my colleague, Jennifer Bird on my right, specialising particularly in the offshore wind sector. If you have got specific questions it is probably best that they answer those, but on the whole our view is that each sector has to be taken on its own merits.

When it comes to offshore wind we identified, as you will know from our brief, specific barriers that need to be overcome. It is likely, we think from our research so far, that we will encounter similar barriers that need to be addressed but not necessarily in every case. We identified three major areas of concern with offshore wind—firstly, the need to establish sufficient domestic demand in the first place with adequate targets and frameworks; secondly, the need to establish incentives for companies to invest and set up in the UK so that UK jobs can be created as opposed to simply importing the technology from overseas; and, thirdly, the need to establish a sufficient skills base in this country for particular aspects of the offshore wind business. Skills are not an issue for every aspect, that is important to underline, and it is also important to underline, with regard to other potential job growth areas when it comes to green jobs, that skills may not be a problem, for example, with energy efficiency.

Q2 Chairman: We will certainly want to pursue both wind and skills in more detail presently, but just on this question, as you have mentioned offshore wind, the Budget obviously improved the incentives for a limited period to encourage some investment in

offshore wind farms, but that does not in any way guarantee any jobs, or very few jobs, within Britain, so it is that sort of gap we are concerned about. Specifically, there has been already renewed investment interest in offshore wind as a result of the budget change, as I understand it, so the measures you are calling for are in addition to the incentive. Could you enlarge on that, what you think we should be doing, perhaps coupled with the extra incentive to invest in a wind farm?

Ms Bird: We published our report¹ before the Budget so the recommendations were made before those announcements came out. In terms of the investment side, one of the things that we were keen to recommend in our report was that there is already a large number of programmes that provide support to the offshore wind and other renewable energy industries, and one of the things that people were telling us who work in the industry was that it is spread too thinly at the moment across too wide a number of programmes and so the recommendation was that they should be consolidated into a fund that is more clearly directed at areas like offshore wind and that would help to attract investment.

Q3 Chairman: Has the Government reacted to your report? Have they responded to you at all?

Mr Retallack: Not officially.

Q4 Chairman: Is there a difficulty about the responsibility between central and regional government or is that not a problem?

Mr Retallack: There is an aspect here that is absolutely relevant, you are right. We identify clearly a big role for national government to set the right frameworks and put the right incentives in place, but we need to be careful to engage beyond the regional level to the local level to ensure that the relevant players are involved, and also to identify where the specific local needs and barriers are that need to be overcome. Clearly, and Kayte can talk more to this, unemployment is a greater problem in certain parts of the country than in others and it would be sensible to develop a strategy around green jobs that recognises that and tries to ensure that employment opportunities can be created in these sectors in areas which need it, and that does require co-operation and engagement at the local level but at regional level too.

¹ EAC 3rd Report, Session 2008–09: Pre-Budget Report 2008: Green fiscal policy in a recession, HC 102.

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Q5 Mark Lazarowicz: The term “green jobs” is one that is used pretty widely at the moment. How useful is it to have such a term or should we be more precise in what we mean by a “green job” and draw from that the appropriate conclusions for policy and initiatives?

Mr Retallack: The term “green jobs” used to be used to define environmental industries such as pollution control, water management, waste management, et cetera, and clearly in recent times it has been expanded to include activities associated with the low carbon economy but it is very difficult to define exactly where the definition should start and end. Should it, for example, be extended to people that make and run buses or tube trains? Our approach has been one that says that it is impossible to define this term precisely and adequately. What we should be doing and what the Government should be doing with its Low Carbon Industrial Strategy is coming up with a strategy that ensures that every job is green. Ultimately, any job that is not green in the future should not be and probably will not be sustainable, and that means looking beyond the need to create new jobs in the low carbon sector to greening existing jobs in areas like the car sector where there is certainly the skills base and the knowledge to produce low carbon vehicles, and assisting existing sectors and industries that are likely to decline as a result of low carbon policies to make that transition in a fair way.

Q6 Mark Lazarowicz: How well do you think it is recognised that many old jobs will have to go if we are going to move to a low carbon economy? My suspicion is that it is not recognised at all widely. How widely is it recognised within industry, for example, or even in government?

Mr Retallack: That is a good question. I suspect that it is understood but whether it is readily publicly acknowledged is another question. There are obvious sectors that are probably more vulnerable than others, offshore oil and gas being a notable example, which is obviously going to decline for other reasons as well to do with supply in the North Sea. I think there is a valid point here, which is that there should be a greater focus on the need to help vulnerable sectors to make a just transition, I suppose, to a low carbon economy.

Q7 Mark Lazarowicz: I realise it is very difficult to put any figures on this but what kind of balance are we talking about? If the right decisions are taken how many of the greener new jobs can be expected to be created and how many of the older, less green ones are we likely to see going? I know this is all very general, but at the end of the day if we are to hold a public debate these are the kinds of things we have to decide what to do about.

Ms Bird: We have not done any kind of analysis that would put numbers like that on it.

Q8 Mark Lazarowicz: Has anybody, that you are aware of?

Ms Bird: The report that the Committee on Climate Change published in late 2008 does contain a section at the end which identifies industries which may be at risk due to carbon pricing and sets out that a policy will need to be developed to ensure that those industries are able to continue to operate. That is one example that I am aware of, but in terms of actual numbers I have not seen anything.

Q9 Mark Lazarowicz: What kinds of industries, can you remind us, did the Committee on Climate Change identify as being particularly at risk?

Ms Bird: The ones that were at risk due to carbon pricing in particular were iron and steel, aluminium, cement and lime at the top end because they are energy-intensive industries.

Mr Retallack: Can I just add to that answer? Our general sense, if you are interested in weighing up the likely job creation versus job loss scale, is that whilst there are those sectors that are vulnerable, as Jenny mentioned, and they will affect individuals, the jobs in those sectors are relatively small. It does not mean we should not worry about them and identify strategies to help in those circumstances because they will affect very specific geographical communities, steel in South Wales, for example, but on the whole our sense is that there will be far greater numbers of jobs created by making this transition than jobs lost.

Q10 Dr Turner: The Government has set out a vision for a Low Carbon Industrial Strategy but it has not spelt out any nuts and bolts as to how we get from a vision to an actuality, so what do you think the Government needs to do to turn this vision into a real Low Carbon Industrial Strategy on the ground?

Ms Bird: To pick up on what Simon was saying earlier, we think that the Low Carbon Industrial Strategy needs to take a broader look, so not just focusing on where new jobs might be created but also thinking about existing jobs to ensure that they are protected and that we do not lose jobs in sectors that might be at risk. The strategy will need to contain elements setting out how the Government will support those industries in making the transition to become low carbon industries themselves, so we think that is an important element of the strategy.

Mr Retallack: When it comes to creating new jobs, I suppose, in particular, we will be looking for more detail, hopefully, in the summer from the Government’s Low Carbon Industrial Strategy on instilling greater confidence amongst the companies, which we would like to establish themselves here in the UK, that there will be sufficient demand, and part of that will mean, for example, ensuring that the Renewables Obligation and the changes with the banding which the Government have committed themselves to actually work, so monitoring that closely and, if they do not, as you will know, that further credits are being given to offshore wind than previously.

Q11 Dr Turner: Are you suggesting that the Government should be looking to more, shall we say, investment incentives to help the generation of new jobs and, if so, what?

Mr Retallack: Yes, we are saying that there should be greater incentives. There are different levels of this and some may be tax incentives. It is interesting to learn from the example of other countries when it comes to the use of incentives. Spain has managed to create a very successful wind industry, amongst other things, by putting in place local content requirements, in other words, requiring companies that want to sell into the Spanish market to actually employ local people. There are question marks over the consistency of that sort of approach with European Union legislation and indeed potentially with World Trade Organisation rules and requirements, but it is an area which we would certainly urge you to consider. There are other incentives beyond the fiscal and the regulatory, such as the need for adequate infrastructure. There has been a problem in this country with the port infrastructure that will be necessary, the grid infrastructure and connections, and all of those will need attention.

Q12 Dr Turner: What do you think of the performance of organisations, both private and public, in improving their environmental performance? Are they doing it and, if not, why not?

Mr Retallack: That is a question that goes beyond our ability, I suspect, to comment. We have not looked at that in the context of the research we have been undertaking on green jobs.

Q13 Mark Lazarowicz: There is obviously a potential tension between providing green jobs for environmental reasons ultimately, which is a process which may take some time, and meeting the immediate needs in a recession. Having accepted all the qualifications about what is a 'green job', how can we try to make sure that a green jobs programme actually brings benefits to those particularly vulnerable in a recession to unemployment, as is obviously the case at the moment?

Ms Lawton: One of the things that we are particularly keen to look at is making sure that these jobs are created at different levels so that there are opportunities for people perhaps who have lower skills or poorer work records, people who have been out of work even in the kind of economic boom that we have had, so we are very keen on looking at sectors like energy efficiency because we think that there are a lot of opportunities there for people perhaps who lack these very high skills which are sometimes associated with green sectors, so that is certainly one thing we are keen on, I think, and we have got some examples from America where that has worked quite well in deprived communities. I think there is also a role for the kind of employment and skills system which is working towards greater integration in trying to identify those people who perhaps have lost work during the recession and who may have the kind of skills that could be picked up and transferred into new green jobs, so I think there

is quite a role there for making sure that the welfare and skills systems are working quite closely together to identify those people, so those are two things that could start to make an impact now, we think.

Q14 Mark Lazarowicz: And are there signs that this is happening?

Ms Lawton: Yes, I think that in terms of bringing together the welfare and skills systems, that is something that the Government has been very much behind and there are various pilots to bring budgets together and to get people working together, so I think that needs to go forward. I think there is a role for people working in those systems to have more information about local vacancies and about local employer demands so that they can pick out the people who may have relevant skills and direct them towards where there is local demand; there is probably more work that could be done there, and certainly it is why we are very keen to try and find ways of developing the energy efficiency sector, in particular, so that we can provide jobs, for example, for people who have lost their jobs in the construction industry, trying to pick those people and move them back into work as quickly as possible.

Q15 Mark Lazarowicz: Aside from the energy efficiency sector, are there any other sectors you would identify as being particularly relevant in terms of bringing jobs to people who have become unemployed and/or people with low skills quickly? Are there any other sectors you would identify, besides energy efficiency because everyone comes out with energy efficiency, but everyone cannot be doing that surely, so what else is there?

Ms Lawton: I think there may be some scope in manufacturing because the analysis that we have done shows that in the kinds of manufacturing jobs that might be created there will be some opportunities at lower and intermediate levels, so there may be opportunities there. There are things like the wholesale and retail sector as well which is not really associated with green jobs, but some of the analysis that we have seen shows that there will be some job growth there which may provide some opportunities, although in terms of numbers it will not be as significant.

Q16 Mark Lazarowicz: Let me take the example where I represent a constituency where a lot of people work in the financial services sector, which does not actually appear to have been as badly affected as was suggested it might be as yet by changes in that sector, but how are people who are unemployed in that sector, but at the lower end of the scale, not at the top end, how are they going to be able to find green jobs in the changing financial world? Is there a role there and what can they do?

Ms Lawton: I think that possibly one sector that does get overlooked, but which, from the analysis we have seen though, has quite a potential for growth is in what we call 'business services' and which those kinds of people may find a home in, so things like legal services. There is obviously low carbon finance

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and management consultancy work, accountancy, all those kinds of services that green sectors will rely on, so I think there is a role there. Again, those jobs do tend to be at the higher end, so we may need to put in place some training programmes and some kinds of transition programmes to help people move across, but that might be one kind of angle.

Q17 Joan Walley: You have referred to the Low Carbon Industrial Strategy which was published earlier this year, and presumably there will be indicators as to how that is going to be implemented later on in the summer, but how do you see that vision linked to the current economic recession and the imperative that there is for the Government to look at finding jobs or helping those who are long-term unemployed or those with the fewest skills? How do you see the need for the Government to intervene where help is most needed set alongside this agenda of creating more green jobs?

Ms Lawton: I think one thing we would be looking for is perhaps the Department for Work and Pensions (DWP) to become one of the departments that is leading on the Low Carbon Industrial Strategy because they are the Department which knows where the gaps are, where the disadvantaged people are, where their clients are. I know that all the departments are working on this together, but, if they were perhaps one of the lead departments in that, that could strengthen that process.

Q18 Joan Walley: But is not one of the issues that perhaps the areas, which have the greatest numbers of unemployed or the greatest numbers of people with fewer skills, have the least capacity to be able to put together the bids that could go forward to the DWP programmes which could tick both the DWP box and tick the green jobs box as well?

Ms Lawton: I think in those areas there is no reason why the local authorities and their partners could not get together. For example, hopefully in some of those areas they will be bidding for the money—

Q19 Joan Walley: But I am questioning whether or not local authorities and their partners either have the nous to know what is going on or have the skills to do it or the capacity to do it.

Ms Lawton: I think there are certainly questions over some local authorities, but I do think that, if they can work with their partners who are working on the ground, people in Jobcentre Plus, people in the local Learning and Skills Council and those sorts of organisations, people working with businesses, if they can get all of those people together and identify the particular gaps and the particular needs, and there are some local authorities who are very strong on this—

Q20 Joan Walley: Do you know of some good practice of where that is happening?

Ms Lawton: Certainly there are some pilots in the West Midlands that I have heard of.

Q21 Joan Walley: Could you say whereabouts in the West Midlands?

Ms Lawton: Sorry, I do not know the detail, I just know that there have been some pilots of kind of joint working between Jobcentre Plus and the Learning and Skills Council. I am not certain of in which parts, but I have been told that there is some evidence there from the West Midlands that that is working.

Mr Retallack: Can we find out?

Ms Lawton: Yes, I can certainly find out.²

Q22 Chairman: One report has put the potential for jobs from the wind sector as high as 87,000 people, suggesting that this could be worth, or is worth, £11 billion. Does that accord with your own assessment of the potential?

Ms Bird: Well, in our project we have not been able to do any of this kind of analysis of our own, so we are only able to see what other people have done and, as you can see, there is a range of estimates out there, but unfortunately we have not been able to do our own analysis of that.

Q23 Chairman: Well, given what you have done, do you think that is the most promising sector in terms of low carbon industries? Does it offer the biggest potential for jobs, do you think?

Ms Bird: I think it is certainly one of the more promising sectors. Energy efficiency again is one that comes out as having a high potential for job creation.

Q24 Chairman: Why do you think other European countries have been so much better at developing their renewable energy industries than Britain?

Mr Retallack: For a number of reasons, and different countries have to be looked at separately. In the case of Germany, it is partly because they have done the three things which, as I set out earlier, are necessary to create jobs in this sector. They have provided long-term regulatory frameworks, which have provided certainty that there would be a domestic market for the product, they have put in place incentives and the infrastructure when it comes to ports and clearly, when it comes to Germany, it has to be said, they have invested in the skills necessary for manufacturing some of the higher-tech elements, and that goes back through to their education system and how early they engage young people in specialising in the necessary skills. There are downsides to that, and Kayte can certainly talk to it, but in the case of Germany that is what has happened. In Spain, I mentioned the highly interventionist nature of some of their incentives with the local content requirements, for example, that they have put in place, and there will be other examples that we will be able to report back on, for

² *Note by Witness:* The West Midlands examples Ms Lawson referred to are ongoing pilots looking at joint commissioning between Jobcentre Plus and the Learning and Skills Council so that funding for skills and welfare to work support is aligned, to support job entry and career progression. However, to our knowledge, there has not yet been any published evaluation of the programmes, so unfortunately we are not able to provide any further evidence on the outcomes of the pilots at this point.

example, when we have finished our work on green jobs which looks at what is happening in the US in due course.

Q25 Chairman: Are we now in Britain too late? Given that you have mentioned Germany and you have mentioned Spain and Denmark is also further ahead on wind, are we trying to play catch-up after the boat has already left?

Mr Retallack: Not in every sector. It is a very important question and I think one thing that we would urge you to consider and the Government indeed to consider is the need to be strategic when it comes to trying to create new jobs in low carbon sectors because we cannot be leaders in everything. Our sense is, however, certainly when it comes to energy efficiency, that there is huge potential in the UK. When it comes to wind, even though we are behind certainly the sort of world leaders when it comes to the companies manufacturing turbines, there is still huge potential here because of the fact that the UK has the best offshore wind resource in the world, the fact that we do have some skills that are highly relevant, particularly from the oil and gas experience in the North Sea, and we have the financial sector and consultancy sector skills which are necessary too to make this work. There are all sorts of jobs which will be created too for the maintenance of these offshore wind installations which make it important that the UK does try to catch up, if you like, because it would be a great mistake, a great lost opportunity, were we not to capitalise on those benefits.

Q26 Dr Turner: But of course in this country, when people talk about renewable energy, they only think of wind and sometimes solar, where, as the Chair has suggested, we may well have missed the boat because we were so far behind the curve, but that is not the only promising renewable sector. We have the best tidal stream resources, we have the best wave resources in the world around the shores of the UK and, for the moment at least, we have a lead in the technology, fragile though it may be. How do you think we can develop that industry, which has many gigawatts of electrical potential and, therefore, many thousands of jobs? How can we avoid making the same mistakes with the opportunity to develop that industry which we made with wind?

Ms Bird: As you say, it is an area where we are currently one of the world leaders and there is great potential to develop that, although it would be on a longer timescale perhaps than some of the other sectors that we have been talking about. I think one of the key things for the marine wave and tidal sector is to make sure that the research that is going on now is translated into viable industries, and I think potentially that is what has happened in the past with the wind sector, for example, that we lost that opportunity to capitalise on the research that we had done, so it is about developing the right policies to ensure that the innovation can continue from the research and development all the way through to the commercialisation phase.

Q27 Dr Turner: Well, deployment, as has been very well illustrated by Denmark, Germany and Spain in the wind industry, is determined by the investment framework and the market frameworks that are in place. Do we have anything remotely approaching the right market circumstances and the right investment incentives in the UK to develop marine power? It is fine in the laboratory, it is fine in the demonstrator stage, but that is a long way and a very long way financially in terms of skill to getting a real industry.

Ms Bird: I think one of the most important instruments will be the Renewables Obligation, so obviously that has been banded now to give additional support to developing industries and technologies, like wave and tidal; that is a step in the right direction.

Q28 Dr Turner: Do you think that the Renewables Obligation in its present structure, even with the banding for two ROCs, is remotely adequate? It is just about, I am told, enough to incentivise an offshore wind project.

Ms Bird: I am afraid I have not done any detailed analysis into the numbers on that side, so I cannot really comment.

Mr Retallack: I would just add that I think the facts speak for themselves in the end when it comes to marine renewables, and that is, in answer to your question, that the incentives are not yet there in this country to see the full potential developed yet when it comes to marine renewables.

Q29 Dr Turner: Well, we have already seen in wave power that companies have had to look to Portugal to start deployment. Are we going to see that as an emerging pattern in other aspects because of the lack of proper investment frameworks?

Mr Retallack: I do not think we can comment on that.

Q30 Chairman: We have got a company down in the Isle of Wight manufacturing blades which has supposedly closed. Now, why has that happened? Why could the Government not do something to stop that?

Mr Retallack: Well, I think the official reason given by Vestas, the Danish wind company, for shutting down its manufacturing plant on the Isle of Wight was that the planning restrictions and laws in this country frustrated them, with local opposition having proven a barrier time and time again. We are slightly sceptical of that argument, not least because a lot of the turbines that they have been manufacturing there are not for the UK market, so we suspect that what is probably primarily responsible is the effect of the global recession and its impact on demand.

Q31 Chairman: There is an extraordinary contrast. For those of us who remember what it was like when the North Sea oil industry was taking off in the early 1970s, it seems an extraordinary contrast between the enormous effort that was made by business leaders and Government to make sure that

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the most rapid possible development of that resource occurred, and lots of new technology was required because they were both installing and producing in more hostile waters than previously most of the oil industry had been involved with. Given what you say about the potential wind resource we have in this country, it does seem extraordinary and very frustrating that we are not seeing a similar united effort. Now, is this a lack of interest by business leaders as well as by Government? The big oil companies are actually reducing their interest in this area rather than increasing it, which makes some of us hope that the oil price goes back to \$200 very quickly. I just think that there seems to be a great opportunity and no one is pressing the Government hard enough, apart from people like you and us perhaps, to change the policy framework and business itself is not really driving it forward.

Mr Retallack: Well, I think there are two aspects to this and one is the role of Government and one is the role of business. On the Government front, it is fair to say, I think, that governments have been too slow when it comes to putting in place the right frameworks, incentives and skills necessary, and that has been a real shame. However, we should give credit where it is due and I think it is fair to say that the Government has now woken up to the potential for job creation here, and we welcome the fact that certainly under Peter Mandelson, DBERR, or whatever it is called these days, DBIS, I think, has decided to reverse a decade-long attitude to industrial policy. They have said that we actually do need an industrial strategy if we are going to maximise the potential job creation in the low carbon economy, which is a very welcome change and we hope that the detail matches the rhetoric, if you like, in the summer with the detailed announcements, we hope to see, on what that Low Carbon Industrial Strategy will look like. On the company front, I think it is again a real shame that companies like Shell and BP have decided that they do not want to invest in renewable energy projects in the UK any more, including offshore wind, and unfortunately actually I suspect that the higher the oil price goes, the more likely they are to continue to think, "We don't need to invest in renewables and we'll continue to put our money, for example, in the tar sands in Alberta in Canada because that's where we'll make more money".

Q32 Joan Walley: In the evidence which you submitted,³ you suggested that, because you have got green jobs in so many different sectors, there is not really any need to have a generic green skill set, and I am just wondering whether or not you feel that that is the right approach to take and whether or not, if we are going to get some new skills right the way across the board, that is going to mean people at all different levels understanding the need perhaps to change what they are doing, and would there not be some point in having that kind of green

skill set that could inform the development of innovation and policy and bring new technology into manufacturing?

Ms Lawton: In our evidence, we were really saying that from the evidence that we have seen jobs will be created in lots of different sectors, so there will be jobs in high-tech manufacturing, there may be jobs in loft insulation and there may be jobs in finance or management consultancy and they all require a very different set of skills, so we felt that there is not necessarily a kind of single green skill set that would be useful for the person in high-tech manufacturing and the person in architectural services. That is not to say that there is not a role for some of the work perhaps that the trade unions and some employers are doing around 'greening' work places, which is relevant to all organisations, and that is perhaps something slightly different from what we were talking about here, so we felt that generally with skills policy it helped if you could be as specific as possible about where you think skills issues are and what the remedy for those is rather than having a very broad approach and saying, "Everyone needs this kind of skill or this qualification". We think that in the past that possibly has not been the best approach, but there is certainly a need for a kind of greening of workplaces, greening how businesses operate, and perhaps that is a slightly different thing, but it is definitely needed.

Q33 Joan Walley: Given that there does not seem to be any targeting by Government or industry of where the specific skill gaps are, why do you think that is?

Ms Lawton: At the moment, the Government's approach to skills is quite broad in that it has these quite broad targets for having people at different levels of qualification and its targets are very kind of generic in that sense, but within their strategy though there does not seem to be a particular focus on what kind of qualifications or where these skills are needed, so they have targets that X per cent of people should have a Level 3 qualification by a certain date, but there is not very much said about what kinds of qualifications those should be and what sectors they should be in, so I think possibly it is those targets which are driving some of the action. They have certainly said that they want a kind of demand-led system, which could be a very strong approach, but, where it is governed by those very broad targets, it is not clear that those two sit together very well.

Q34 Joan Walley: But if it is the case that we have different government initiatives coming forward, and you referred to the strategy, and there are changes in the Learning and Skills Council and how that is going to be positioned away from the stand-alone councils within the local authorities and then you have got further and higher education, do you not think that there should be some way of looking at the skills and the

³ See Ev 1

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qualifications and changing the existing pattern so that it does reflect the priority of creating new jobs?

Ms Lawton: Certainly, and in our evidence we were talking about an organisation, whether it be a department, an agency or whatever, which has oversight of those current gaps and has some kind of sense of where the future demand is.

Q35 Joan Walley: So who do you think it is who has that knowledge?

Ms Lawton: At the moment, I would imagine DIUS, for example, the former department people there would have had that knowledge, the Department for Innovation, Universities and Skills, and presumably those people have moved over to the new Department. It would also potentially have been something that the Learning and Skills Council were looking at.

Q36 Joan Walley: So you are saying that the people who have the skills, by and large, are now the ones who have moved to the new DBERR and the other ones have moved to the local authorities, so there is not even a focal point as to where that understanding of where the gaps are is?

Ms Lawton: I am not fully aware of exactly who is responsible for what within the departments, but I would imagine that the people who were doing that at the old DIUS have gone over to the new Business

Department and, if that is going to continue to be a priority in that Department, then they will have the expertise.

Q37 Joan Walley: Just looking at the new developing skills which we will need if we are to move to green technology, do you think that there are sectors or particular areas where those skills are already well advanced and could be used to help adapt more widely across the wider economy?

Ms Lawton: We are actually right in the middle of some of our research around this in terms of talking to employers where we are doing some interviews and a survey as well and we do not yet have the results from that, so it is probably a bit early for us to comment on that, but we can certainly send you the results when we have them.⁴

Chairman: Thank you very much. I think we are out of time now. As you will continue to do some work in the area which we are looking at and we certainly will not be publishing our Report until the autumn, perhaps we could keep in touch because there may be more stuff you could let us have either in writing or in conversation with the staff because this is a very important bit of work from our point of view and we would appreciate having a further input from you. Thanks for coming in.

⁴ *Note by Witness:* Work is currently being undertaken by Ippr and their findings will be published in due course.

Memorandum submitted by the Aldersgate Group

INTRODUCTION

The Aldersgate Group (AG) is a coalition of private, public and third sector organisations who believe that high environmental standards are essential for long term economic growth and international competitiveness.

COMMISSION STATEMENT REPORT

1. The Aldersgate Group's recently published report, *Commission Statement*, is a study based on interviews with all the former members of the Commission on Environmental Markets and Economic Performance (CEMEP). This body was originally established by the UK Government in the light of the Stern Review to make detailed proposals to ensure the UK is in the best possible position to seize the new opportunities of the low carbon economy. It published its findings in November 2007¹⁷ and the Government officially welcomed and responded to the 24 detailed recommendations the following May.¹⁸ A year on, *Commission Statement* reviews government performance to date and makes recommendations for achieving a credible and ambitious low carbon industrial strategy and economy.

2. In terms of developing the necessary skills, the Government acknowledged in its response to CEMEP that the "jobs of today will not be the jobs of tomorrow"¹⁹ and that the UK must ensure that it is well equipped to respond to the anticipated scale of market opportunity in environmental markets. It is clear that a more coherent and joined up approach is required if the UK is to realise these ambitions and deliver the skills required in every sector of the economy.

ADDRESSING THE SKILLS GAP

3. CEMEP notes that one in three firms in the environmental sector are being hampered by a shortage of skilled staff, from those needed to install new technology to scientists and engineers. Government has responded to this challenge by creating a new National Skills Academy for Power, which will address current and future skills shortages to ensure a secure supply of electricity, and a new Sector Skills Compact to deliver more highly skilled and qualified workers in the nuclear, petroleum and oil and gas industries. However, the

¹⁷ HM Government (November 2007) Commission on Environmental Markets and Economic Performance.

¹⁸ HM Government (May 2008) *Unlocking Talent: Building a low carbon economy*.

¹⁹ HM Government (May 2008) *Unlocking Talent: Building a low carbon economy*, p14.

skills gap still represents a major barrier to UK success in environmental markets, particularly in renewable and low carbon energy generation. As such, Commissioner Frances O’Grady, Deputy General Secretary at TUC stated:

“There have been genuine steps forward in terms of developing a vision and identifying skill requirements both now and in five to ten years down the line. But there needs to be more certainty. Renewable companies will not scale up unless they can be sure the workforce will have the expertise to deliver.”

4. To take one example, there is a major risk that the grid infrastructure needed to meet the 2020 renewables target will not be built due to a shortage of suitably skilled labour. In an open letter dated 13 February 2009, John Overton from the Electricity Networks Strategy Group declared:

“The availability of the suitably skilled people needed to deliver these network projects represents a major risk, as many of the people with the necessary skills are approaching retirement. Moreover, the lead time through training to full competence is long—five years or more. On top of this, there is a limited capacity to train people. The sector will need to attract new people that have the necessary skills, education and training.”²⁰

The new National Skills Academy for Power must address these skills gaps without delay to ensure the UK can compete globally in environmental markets. Commissioner Jim Skea attributed these skills shortages to a “persistent lack of high level leadership”, particularly in addressing post-graduate, high skilled, apprentice level training.

DEVELOPING AN INNOVATIVE SUPPLY-LED APPROACH

5. The demand-led approach to skills has dominated policy thinking in recent years. However, the Government has recognised the limitations of this strategy and recent research commissioned by Defra finds demand for environmental skills “is not being articulated by many employers and as a result the current ‘demand-led’ skills delivery framework is ill equipped to anticipate and respond”.²¹ Hence, the Government has modified its approach to anticipate future growth in certain economic sectors²² and must continue to do this (with some developments outlined in the previous section). Accordingly, Commissioner Frances O’Grady stated that:

“Climate change is the classic and most deadly example of market failure and this must be reflected in the Government’s skills strategy. The market cannot be left to its own devices. Government intervention is required to plan and invest in our skills future, with businesses also contributing their fair share of resources.”

GOVERNMENT LEADERSHIP

6. CEMEP acknowledged that beyond narrow, specialist environmental knowledge, a prerequisite of a low carbon and resource efficient economy is a workforce that is “sustainability literate” across the board, from formal education, to working professionals and the mainstream civil service. The sheer scale and cross-cutting nature of this challenge should not be underestimated, but progress is hampered by a “glacial pace of change” according to Commissioner Peter Young, Chairman of the Aldersgate Group. This was echoed by Commissioner Paul Noon, General Secretary at Prospect, who stated that although there has been progress in the right direction, it has been slow, and suggested the need for “an overarching road map detailing where we want to be in the future and how we are going to get there.”

7. Moreover, Commissioners were concerned that there does not seem to be effective ownership of the low carbon skills agenda within Government. CEMEP envisaged a leadership role for the UK Commission on Employment and Skills (UKCES), the body that ensures that employment and skills systems contribute to the highest levels of productivity. However, the Government has since decided that other priorities, such as the simplification of the entire skills system, should take precedence and it would not be desirable to divert effort from the core mission of UKCES at an early stage of its development. Commissioners suggested that this view needs to be balanced with the immense implications of the environmental transition for every UK business and the need for greater responsibility to formulate strategies, gather intelligence and develop key drivers. It is hoped that the Government might reconsider the role that UKCES could play in the near future, or ensure another or new body takes responsibility going forward.

8. DIUS have also set up a cross departmental advisory group on low carbon skills but this does not involve wider stakeholders. Trade unions, businesses and NGOs must be fully engaged in the development of the low carbon skills agenda as they have a large responsibility for its implementation and ultimate success.

²⁰ www.ensg.gov.uk/assets/ensg_pwg_chairmans_report_final.pdf

²¹ Pro EnviRo (2008) Skills for a Low Carbon and Resource Efficient Economy: A review of evidence.

²² HM Government (April 2009) New Industry, New Jobs: Building Britain’s future, p15.

STIMULATING GREEN EMPLOYMENT IN THE RECESSION

9. As proponents of a “Green New Deal” have argued, investment in green public infrastructure would stimulate employment and economic growth in the short term and ensure the UK workforce gain the necessary skills and expertise to compete in a low carbon, resource efficient economy in the medium and long term. Commissioner Tom Delay, Chief Executive of the Carbon Trust, stated that “a green stimulus during the recession is attractive to taxpayers and a good use of their money. Energy efficiency schemes in particular could create a large number of jobs and build up the skills in the workforce that will help drive the move to a prosperous low carbon economy.”

10. To take one example, Commissioner James Brathwaite, Chairman of SEEDA, stressed the need for “big programmes that would have a big impact”. For example, a street by street home insulation programme for social housing that was on a scale to the conversion to “high speed gas” of the 1960s would “create thousands of jobs, develop low carbon skills and re-invigorate the construction sector during the recession”. To deliver current and future environment policy, the Government must ensure it has the capacity in the system.

TRAINING PUBLIC PROCURERS

11. Public procurement was identified by Commissioners as a massively underused lever for progression towards a low carbon, resource efficient economy. The UK’s £150 billion per annum public procurement budget represents a major opportunity to boost competitiveness and stimulate the market for environmental technologies. As carbon increasingly becomes a material commodity and global pressures progressively demand greater resource efficiency, there is no room for short termism, and analysis of full life-cycle costs can save money in the future.

12. A recent report by the Innovation, Universities, Science and Skills Committee found that Government, in key policy areas of several departments, does not have sufficient in-house engineering expertise. In no uncertain terms, Committee members “were shocked to discover that engineering advice had been lacking in the formulation of policies as important and diverse as eco-towns, renewable energy and large IT projects”.²³ Commissioner David Fisk from Imperial College observed that “while procurement professionals are very good at contract negotiation, greater analytical engineering skills are necessary to assess innovative and provocative bids”. The Government should address this deficiency without delay, providing real opportunities in terms of career progression, and strengthen links between the public and private sectors through secondments.

13. More widely, there needs to be a comprehensive transformation in public sector attitudes towards procurement. If procurers are seen as “buying tomorrow’s answers to today’s problems”, as proposed by Commissioner Dr Jack Frost, it would attract the personnel, resources and senior management attention that would lead to the sweeping cultural changes required. While there has been progress in setting sufficient standards, the more challenging task of implementation has been “like pushing a boulder up a hill” according to Commissioner Frances O’Grady. As with the wider skills agenda, nothing can be achieved overnight but an injection of urgency will be crucial for the Government to realise its ambitions to lead the low carbon, resource efficient economy.

TRANSITIONAL POLICIES

14. The CEMEP report, alongside the more recent Low Carbon Economy publications that follow it, make clear that environmental standards are important today for economic efficiency as well as public protection. Good environmental regulation is an economic as well as a social imperative. While, in the past, the design of environmental regulation had to consider the best way of delivering environmental benefits for the public, it now also has to consider how it can best deliver economic benefits. Thus, the role of good regulation in forcing the pace of industrial change should be a central element of economic policy, underpinned by a strong blend of the necessary economic and technical skills in government and the regulators.

15. As CEMEP made clear, these economic benefits arise not only from better regulation but the deliberate design of supporting infrastructure to enable the desired transition to be made in the most economically beneficial way. So, for example, low-carbon targets in the domestic sector need to be supported by investment in the supply chain, skills, and new technology; or the recent Budget incentives for offshore wind need to go hand-in-hand with explicit development of UK-based engineering and construction capacity. Demand side policy must be matched by development on the supply side.

16. This interaction between demand side and supply side needs much greater focus within Government. In reality, both must advance together because each promotes the progress of the other. This is particularly true, for example, in the case of employment, where a sudden hike in standards may not be met by rapid job creation, because industry is either unprepared or not able to respond effectively; in these circumstances new jobs may in fact be exported while old ones dwindle. Where there is good infrastructure support for new standards, employment patterns respond much more flexibly and the very creation of new opportunities encourages both employers and labour to support and encourage further change.

²³ Innovation, Universities, Science and Skills Committee (March 2009) Engineering: turning ideas into reality.

17. The very nature of this interaction creates a number of additional, complex challenges for government. Individual CEMEP recommendations cannot be pursued in isolation—there needs to be strategic, overarching and responsive systems in place to ensure key regulatory drivers are supported by corresponding supply side measures and that they reinforce each other, underpinning its success and ensuring benefits to the UK economy are maximised. Winners *should* be picked in the sense of viewing industrial policy and competitive strengths in a more pragmatic and considered way, building up capabilities and expertise in targeted sectors such as offshore wind and carbon capture and storage. Simultaneously, winners *should not* be picked in the CEMEP interpretation, ie relying on one type of technology or demonstration project within a sector which requires the development of the best solution from a whole “family” of technologies.

LOW CARBON INDUSTRIAL STRATEGY

18. As the Government publishes and then develops its Low Carbon Industrial Strategy, the message from the panel of experts who initiated the process is clear: *the starting point must not be a blank page*. A wealth of expertise, time and resources went into producing the CEMEP recommendations which are still relevant despite the current economic crisis. These should be fully incorporated into the Low Carbon Industrial Strategy.

19. The Low Carbon Industrial Strategy must set out in some detail how the capacity to create and grow skills to at least match the ensuing jobs and supply chains generated by the strategy are captured for the UK economy. There must be wide engagement with stakeholders to gain the traction and momentum necessary so that the workforce becomes a driver not a barrier for the implementation of the strategy. Policies must address both the quality and quantity of job creation that will be needed. Many of the recommendations of CEMEP remain sound for ensuring this is the case.

LONG TERM POLICY FRAMEWORK

20. More widely, the Aldersgate Group argue in *Green Foundations 2009* that far from presenting a crisis for environmental policy making, the challenges posed by the economic recession and financial crisis actually reinforce the urgent need to accelerate the transition to a low-carbon, resource efficient economy, and align economic, environmental and societal benefits. It draws on a rapidly growing body of new evidence and research that substantiates a positive interaction between high environmental standards and economic growth—enabling companies to become more efficient and productive, and creating new opportunities to secure the jobs and wealth of the future.

21. In particular, environmental regulation stimulates innovation and presents new business opportunities, not just in the high-growth environmental sector, but other sectors too. In many cases, the creation of these new jobs and new markets are driven entirely by the policy framework set by government.

22. At the EU level, challenging environmental targets for 2020 are viewed by European Commission President, Jose Manuel Barroso, as “an opportunity that should create thousands of new businesses and millions of jobs in Europe”.²⁴ The earlier Europe moves, the greater the opportunity to use its skills and technology to boost innovation and growth through exploiting first mover advantage, progressing an European eco-industry that already accounts for 3.4 million jobs and has an annual turnover over €227 billion.²⁵

23. This was reinforced recently by the Climate Change Committee²⁶ who state:

“In some sectors of the economy... there may be opportunities for the UK to gain competitive advantage from being a leader in specific technologies with potential for global deployment. To the extent that this is true, the UK will not only create new employment opportunities, but also higher income from high-productivity, high-skilled jobs.

Countries or economic regions which are early adopters of specific technologies often gain competitive advantage from the creation of self-reinforcing clusters of research, development and manufacturing expenditure. Competitive advantage can sometimes therefore arise as a by product of stretching environmental standards. At the overall European economy level, a commitment to high environmental standards has helped nurture European leadership in a wide range of high-technology sectors. And at national level, specific policy commitments to low-carbon energy development have helped create Danish and German leadership in wind turbine manufacture, and Japanese and German leadership in solar photovoltaic cells.

One implication of this is that the UK should support ambitious emissions reduction targets at the European level, since this will drive Europe-wide productivity growth. This will benefit the UK economy whether or not UK companies are specifically involved in the relevant technology, both

²⁴ European Commission (23 January 2008) Press Release: Boosting growth and jobs by meeting our climate change commitments, Brussels.

²⁵ European Commission Communication (23 January 2008)

²⁶ The Climate Change Committee (December 2008) Building a Low-Carbon Economy—The UK’s contribution to tackling climate change, p379.

because non-UK companies may develop or manufacture in the UK, or because higher European productivity and incomes will tend to stimulate demand for goods or services in which the UK does have a competitive advantage.

But it is also possible to identify specific sectors where the UK itself may be well placed to develop competitive advantage if the UK's carbon reduction commitments create strong demand for technical innovation. Key potential sectors are offshore wind energy, wave and tidal, and auto-engines. Development of these and other industries would therefore provide economic benefits to meeting carbon budgets in addition to environmental benefits.”

THE ENVIRONMENTAL SECTOR

24. The Government recently commissioned independent research²⁷ to determine the scale of the environmental sector. It finds that the global environmental goods and services sector is currently valued at £3 trillion and growth is forecast to continue despite the current economic difficulties. The UK is the world's sixth largest low carbon and environmental economy, employing over 880,000 people, with an additional 400,000 jobs expected to be created over the next eight years. However, there is still much room for improvement. The UK only has 3.5% global market share and pre-recession was exporting five times less than Germany, a major European competitor.

25. There is considerable body of evidence which finds that the transition to a low carbon and resource efficient economy is a net creator of jobs. For example, research by the London School of Economics finds that in the short-term, “renewables are more labour-intensive than conventional energy, both in terms of manufacture and, to a lesser extent, the operation of facilities. A switch to low-carbon technologies should thus lead to net job creation”.²⁸ Similarly, a recent report by Deutsche Bank states:

“The Apollo Alliance estimates that every \$1 million invested in the US in energy efficiency projects creates 21.5 new jobs, as compared to only 11.5 jobs for new natural gas generation. The University of California Berkeley's Renewable and Appropriate Energy Laboratory also finds that renewable energy technologies create more jobs per average megawatt of power generated and per dollar invested than coal or natural gas. Finally, a 2008 Center for American Progress report states that a \$100 billion investment in clean energy and efficiency would result in two million new jobs, whereas a similar investment in old energy would only create around 540,000 jobs.”²⁹

26. The UK Government estimates that the expansion in renewable energy set out in the UK Renewable Energy Strategy has the potential to generate 160,000 new jobs in the sector by 2020.³⁰

GREEN STIMULUS PACKAGES

27. The 2009 Budget failed to include an ambitious public spending programme that would help stimulate employment and falling demand during the recession. As specified by the TUC, the projects implemented as part of this programme should be “labour intensive (to ensure they maximise impact on unemployment) and they must focus on turning the UK into one of the most advanced and industrially diverse low carbon economies in the world.”³¹

28. In relation to these benchmarks, the 2009 Budget was a missed opportunity. HSBC³² estimate that in total, the new measures announced takes the UK's green investment fund to over USD 3.7 billion (increasing the percentage of the green component of the stimulus to around 10.6%). This is below the global average (around 15%) and in real terms considerably less than competitors such as China, the United States and France. As such, it will limit the impact of green job creation, economic development and environmental protection in the UK and put at risk the UK's ambitions to be a world leader in green technologies. Commenting on the Budget, Lord Nicholas Stern stated that the additional green expenditure must be “the initial first step along the path towards a major structural shift in policy which we trust will follow over the coming decade”.³³

29. Despite a relatively low level of public sector investment, there were a number of encouraging announcements in the 2009 Budget. For example, the additional support for offshore wind through the Renewables Obligation will ensure that projects that have stalled due to financial difficulties should be in a position to proceed (creating jobs and boosting economic growth). Additionally, targeted support mechanisms for renewables must be bold and sufficiently joined up to prevent job losses and bankruptcies during the recession.

²⁷ Innovas (March 2009) Low Carbon and Environmental Goods and Services: an industry analysis.

²⁸ Fankhauser, S, Schelleier, F & Stern, N (2008) Climate change, innovation and jobs.

²⁹ Deutsche Bank (2008b): Economic stimulus: the case for “green” infrastructure, energy security and “green” jobs.

³⁰ HM Government (June 2008) UK Renewable Energy Strategy.

³¹ TUC (3 April 2009) A Budget for jobs and green growth

³² HSBC Global Research (22 April 2009) Green Stimulus: Round 1 to Asia

³³ www.guardian.co.uk/uk/2009/apr/22/budget-low-carbon-economy

ENERGY AND RESOURCE EFFICIENCY

30. Projects in energy efficiency are particularly desirable as they are good for business (with potential savings of billions of pounds a year), the economy (utilising funds for more productive means) and the environment. Resource efficiency should be aggressively pursued in light of the recession as it will save households and businesses money on their bills, protect the economy against future rises in energy, water and waste costs, create jobs and ensure that the UK will be more competitive when growth returns.

31. Energy efficiency projects can be implemented relatively quickly (unlike more complex infrastructure projects) and so have a more immediate impact on employment creation. Such schemes are also an opportunity to re-skill those currently unable to find work in the construction sector. These benefits are recognised in research by the London School of Economics, which finds that “many energy efficiency measures would be particularly effective as part of a fiscal stimulus, as they could be implemented quickly and would be relatively labour-intensive”, as well as having “a low rate of leakage into imports, increasing the domestic fiscal multiplier”.³⁴

32. Research for the Centre for Energy, Resources and Economic Stability (CERES) finds that “efficiency measures have enabled California households to redirect their expenditures toward other goods and services, creating about 1.5 million FTE jobs with a total payroll of \$45 billion, driven by well-documented household energy savings of \$56 billion from 1972–2006. As a result of energy efficiency, California reduced its energy import dependence and directed a greater percentage of its consumption to instate, employment-intensive goods and services, whose supply chains also largely reside within the state, creating a ‘multiplier’ effect of job generation”.³⁵ Furthermore, the American Council for an Energy-Efficient Economy (ACEEE)³⁶ finds that energy efficiency supports 1.6 million jobs in the US alone and has halved energy consumption per dollar of economic output since 1970.

33. Considering the potential of energy and resource efficiency to drive job creation, Government policy should be more immediate in focus. The announcement in the Budget of £365 million of new spending for energy efficiency across the economy is not bold enough. While the Government’s Heat and Energy Saving Strategy³⁷ sets a number of ambitious targets, such as cost-effective energy saving measures to be installed in all UK households by 2030, there is a lack of immediacy and urgency.

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³⁴ Alex Bowen, Sam Fankhauser, Nicholas Stern and Dimitri Zenghelis (February 2009) An Outline of the Case for a “Green” Stimulus.

³⁵ Roland-Holst, D (2008): Energy efficiency, innovation, and job creation in California.

³⁶ Laitner, John A & Ehrhardt-Martinez, Karen (May 2008) The Size of the U.S. Energy Efficiency Market: Generating a More Complete Picture, Washington.

³⁷ HM Government (February 2009) Heat and Energy Saving Strategy Consultation Document.

Witnesses: **Mr Peter Young**, Chairman, and **Mr John Edmonds**, Member, Aldersgate Group, gave evidence.

Q38 Chairman: Good morning, and thank you for coming. You have obviously heard what has taken place so far, and we appreciate your time. I know you have just published the findings of the interviews that you did with the members of the CEMEP.⁵ Could you say what their response was on the criticisms which have been made about the Government's own response to their written recommendations, firstly, that there were not enough high-level policy measures to back up the rhetoric in Government and, secondly, that, nothing was being done to bridge the impending skills gaps? What do they say about those two issues?

Mr Young: Just perhaps to introduce why we did that as well, the Aldersgate Group, you are hopefully familiar with it, it has business, it has third sector organisations, et cetera, so we look for where there is consensus across all of those as well as having notable individuals, like John joining me today. The reason why we did that was we felt that there was not any accountability or visibility for this whole agenda which was opened up through CEMEP and the low carbon economy, which is where that phrase has come from, and we thought it would be a good opportunity to actually try and give some focus and attention to that, so that is why we did it. To come on to your question and to respond initially, the first thing that was quite clear in terms of a coherent approach is that everybody who had been involved as former commissioners felt that there had been a tendency for the recommendations to be picked up by individual departments and compartmentalised and, as a result, had lost momentum that could have been there. The feeling, therefore, was that there was a lack of urgency and perhaps a lack of pace compared with that which was required if we were to realise the full economic potential of addressing this really important issue, this fundamental transition, if you like, in our economy, that it was being downgraded to something which was perhaps done a bit in individual areas on the side as a specific initiative which was not sufficiently large or important compared with the feeling that had grown up during the course of the actual Commission's life, its year. On the second area in terms of the skills, the feeling was that the market at the moment is not making a very clear signal in terms of the skills that are needed to make this adjustment because it does not feel clear enough about the pull which regulation and policy is going to drive for the creation of the jobs and the needs that will come out of that. As a result of that lack of market pull, there was a need for more intent from Government to at least match the needs so that we do not have the stop-start of an initiative in a particular area creating a demand which then, in due course, creates a need for skills which creates a reaction in terms of delivering those skills, by which time the cycle has really been at quite a low pace compared with what was needed; it needed a modern, strategic approach matching the demand of the supply side.

Mr Edmonds: I think there is a real cast of mind problem here. We are not talking about adding little bits on to our economy which happen to be green or

excising little bits which happen to be dirty; we are talking about the transformation and, once you start talking about the transformation, then you start opening up a whole series of other intellectual and, frankly, viewpoint problems which have to be accommodated. The structure of our government is not too good at dealing with those transformations. The nature of government in this country tends to be to divide up big and small issues into the various government silos. This is transformation and it is not clear, even now with DECC or the new Business Department, who has the responsibility for that transformation.

Q39 Chairman: What about the Budget this year with the heralded green fiscal stimulus? What do you make of all that?

Mr Young: Well, there were some good bits in it, but it was not sufficient, and again I think it exemplifies what we are saying, that it does not match the scale of the rhetoric and the ambition which the Government set out for itself. Taking one very obvious area in terms of energy efficiency, there was something additional there which was good, but it is nowhere near that which could be put in place which would benefit the economy and, particularly at the moment in a recessionary time, create jobs in this transition period when we are moving from a historical building stock into a building stock that is much more energy-efficient and suitable for the 21st Century. The scale just does not seem to match the expectation that has built up in terms of some of the ministerial statements which have been very encouraging.

Q40 Chairman: I like the talk of the transformation, but, in trying to make the case for it and, therefore, the case for much more sweeping measures, are we saying enough about the medium and long-term benefits of being one of the pioneer countries in decarbonising our economy and our infrastructure? Everyone talks about the cost, and of course in the very short term there are some costs, but the benefits of being ahead of the field are absolutely enormous. My sense is that we are not saying enough about the huge advantages which will flow to the country, the prosperity of the citizens, GDP and individual businesses in all those ways.

Mr Edmonds: First of all, there is a big understanding deficit. Some of the comments made by Ms Walley seem to me to be demonstrated in all parts of our national life. People do not understand what 'green' means actually and on some of the issues the evidence comes out in a rather counterintuitive way. I remember some very interesting debates about whether terry-towelling nappies or disposable nappies were the most green, and actually the numbers show that they are very similar if you take life cycle, so the whole population actually needs some of the intellectual equipment and some of the learning in order to deal with these things. The deficits in industry are remarkable where individual companies and individual industrial sectors—and the Carbon Trust has done a great deal of work on this—are not able to understand the

⁵ Note: (CEMP) Commission on Environmental Markets and Economic Performance.

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transformations which will be necessary within their own companies and within their own sectors and the pressures that there are going to be. Therefore, we have got only the haziest view of what is up ahead, so, as always happens, when you do not know what is up ahead, you are subject to short-term fears of the most acute kind and everybody gets a bit upset and then we have the sort of displacement activities that are so well known amongst some other mammals, so we are just not coping with it because, I think, we do not actually have the understanding to start getting into this. I notice how quickly the discussion goes from some of the big picture stuff to some of the tiny, little details without going through the periods or the issues in between, so there is an education and understanding problem which is enormous.

Q41 Joan Walley: Can I just come in on that point because you have come from a trade union background and what you just set out is basically an approach which is very much the fundamental basis of the trade union movement in terms of education which eventually leads to the changes in action. How do you see that understanding which you have just described somehow or other being adopted by industry or government departments, reorganised government departments, local authorities or people on the ground?

Mr Edmonds: Well, some of the educational gaps can be filled. Decent environmental foundation courses at all levels in our education system seem to me to be absolutely essential and I cannot see them developing very quickly, which is a big sadness. The debates at workplace level tend to be pretty sterile and tend to be very tightly connected with health and safety issues rather than with wider environmental issues because workplace representatives have no role in this area, they have no rights, they have no powers and there is nothing equivalent to the Health And Safety at Work Act in the environmental field, so it is very difficult for them to get into a valuable discussion, and of course there is the well-known short-termism that our particular type of market economy tends to encourage in most companies, so there are all sorts of difficulties here, but I think putting something right in the education system would be a very good start in all of this. Supplement that with workplace discussions which have real value and you are beginning to move, but we have to move a long way.

Q42 Joan Walley: Perhaps I will invite you to my constituency to have that kind of workplace discussion. Just moving on, you do recognise in the evidence you have given that the Government has taken some action in tackling the skills shortages that exist in the environmental sector, and you give us an example of the National Skills Academy for Power. I just wonder what these actions do to fill the skills gap that you have just referred to.

Mr Young: I think what we are saying there is that that is probably the best of the bunch at the moment.

Q43 Joan Walley: The best of a bad job?

Mr Young: Yes, that is right in terms of a reaction to meeting the skills need, and I think that is because of the very real issue there has been around the nuclear sector coming back and also a recognition that we need both the grid connection and the ability to retain more of the jobs from the various renewables policy instruments that we have got. That fits fairly neatly within a sector and, as such, is more comfortable, it seems to us, for Government to be able to address, but, when you then follow that through to the wider needs, as you say, flowing through to local government and wider business, there is a need to actually penetrate the whole economy with a view as to additional skills. These are not jobs in the sense of being someone sitting on the side with this particular badge, but these are actually skills that need to be part of mainstream employment in many, many sectors, and that area does not seem to be being addressed really at all at the moment and that is the bigger challenge and it is a joined-up challenge because it involves not addressing it in a compartmentalised way. In terms of success of the power sector, I think it is very early days. It cannot be addressed without tackling what John just said, which is again the basics in terms of science and engineering. We have a very weak science, engineering and technology base really to address this agenda, and it is a very technical agenda, it is going to require, and have a tremendous appetite for, skills in science, technology and engineering way beyond that which we have experienced in the past.

Q44 Joan Walley: How long do you think it will take to introduce these skills to the workforce within this Power Academy that we are referring to?

Mr Young: Well, longer than we would like, but I think the general view is that you are probably talking about a five-year period before you really see a major effect in the employment sector.

Mr Edmonds: But this is interesting stuff actually. People like learning about this and, if we were actually keen to teach people, we would not have any shortage of takers. We are talking about changing the whole basis of our industrial economy and in a better world people might get more obviously excited by that. The biggest industrial change since the 18th Century, goodness me, this is quite big stuff. It depends on the level of commitment both from industry and of course from Government, but you could transform in this country people's understanding of the environmental essentials in a year if you wanted to do it.

Q45 Joan Walley: But do you feel that that urgency is there? It is time that is needed. If we are going to live up to Stern's expectations and the Climate Change Committee's objectives that it is setting for the country, is there sufficient recognition of the time factor? We have not got five years to wait for these skills to trickle down, have we?

Mr Edmonds: No, it is the cast of mind problem. We talk about transformation, but we act as if we are talking about small adjustments and that is a big problem. As I say, it is partly to do with the structure

of government, but it is also to do with the cast of mind, and some politicians are not entirely free of these lack of understanding problems, present company obviously excepted, but I have heard—

Q46 Joan Walley: And there are a few others.

Mr Edmonds:—politicians talking in terms which are environmentally illiterate and they believe that they are making a green case, so there is a lack of understanding throughout a large part of our society and that means that planning proper policies becomes extremely difficult.

Q47 Joan Walley: So what can be done to reduce the amount of time to get people thinking in this mindset about the skill changes and the transformation that are needed?

Mr Young: Well, one thing that was said, going back to CEMEP, is that there needs to be ownership of this somewhere, there needs to be clear ownership. Two years ago, we were there talking about the UK Commission on Employment and Skills maybe being given a very specific remit to kick-start a greater level of activity, but the Government took the view that it had other priorities at that stage and I see that has come back on the agenda as something it is going to consider again now. I think one of the biggest problems with this area is this absence of accountability. It is only with the current government structure, when you have sliced and diced this agenda down to quite small segments, that you find an owner and that owner may be actually able to drive some change through, but, by definition, they are only doing it in a small way. We need something at a much higher level for the skills agenda which is recognising that every part of the economy needs to be touched by this and every part of this economy is at risk if we do not have a change in terms of the supply line in terms of skills and capabilities of the employed workforce.

Q48 Joan Walley: I think we should be asking the candidates for the new Speakership whether or not they have an approach towards greening Parliament in terms of ownership!

Mr Edmonds: All I was going to say is that unfortunately at the moment we have rising unemployment and it looks as if it is going to rise for a good few months, and maybe more than that, into the future. If we wanted to, we could give people who are unemployed an opportunity, a deeply encouraged opportunity, to undertake some environmental foundation course to enable them to go back into employment with a wider basis of knowledge than they have at the moment. We could do that if we wanted and we are not doing it, but we could do it.

Q49 Dr Turner: We seem to have established that the Government is doing all that it might do in this area, but what do you think industry is doing to identify the skills that it is going to need to move to a low carbon economy, and do you think that the Government is aware of those needs?

Mr Young: I do not think the Government is as aware as it could be, but I think also that industry is struggling to see where the long-term policy and signals are going to give rise to the really large opportunities for investment and, hence, going to create the needs and their future business activities. I think one of the key problems we have with any transition is the fact that the new jobs are not that tangible and visible. Initially, they come up in a lot of SMEs, they come up in areas which are reacting to shifts and step changes in policy and, as a result, the cumulative effect of that is not a very strong signal, so I think that, whilst there are people in the business community who can talk about this, and we have the benefit of some of them on the Group, there is not a very strong signal because it is quite compartmentalised as well within business, and there needs to be a more strategic approach and a forum to actually channel that know-how and that knowledge of what is going to drive the future economy into government.

Q50 Dr Turner: It seems to me you have touched on a rather fundamental point, being the nature of British industry. We have seen before large British industries die because times have changed and they did not. Is that process still going on, do you think, because, if we are dependent on the SMEs to create this transformation, there is lots of evidence to suggest that that is where the ideas and the consciousness are, but that is not where the financial muscle is to put it into practice, so it seems to me that we have got a fundamental structural problem as well as a skills problem, but the two things go together, so can you see any way of resolving it?

Mr Edmonds: British industry tends to be very good when it has an opportunity that falls entirely into its core business. Chairman, you raised the question of what happened when we found North Sea oil and gas. Well, okay, we had oil and gas industries, we had a big oil industry, they saw the tremendous opportunity for profitability and, because they were going to invest very heavily, they pulled along a whole series of contracting and supplying companies with them because there was the confidence that a great deal of money was going to be spent. The problem we have now is that we do not have the companies for the new industrial revolution, so people have got to start thinking about some of their political and economic models and whether they fit too well into this particular world, and some of those models have been challenged quite fiercely in the last 18 months and it has been a great delight to some of us, but perhaps not to others. The point really is this: that to find quick market-based solutions to that sort of problem seems to me to go all against the experience and commonsense. The market will eventually find solutions, as it did in the 18th Century, but it took an awful lot of time and an awful lot of misery in between. The TUC has said that what we need to achieve is what they call a 'just transition', by which they mean a transition with economic and social justice, and it seems to me that the role of government in intervening financially is going to be very, very important in all of this

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transition because, otherwise, the market moves will be slow and of course there is no reason to believe that those market moves will eventually favour British companies against Continental European, American, Japanese or South-East Asian companies, so we might lose out very, very badly. That then raises the whole question, and you would have to sometimes challenge some of these things, about picking winners. For 30 years, British politicians have been telling each other that we must not pick winners. Well, maybe this is the time to start to thinking about picking winners. We are very careful in our paper to distinguish between picking winners, where you take one narrow technology and bung money at that, and taking a group of technologies and saying that somewhere in all of that there are going to be successes, and there will be some failures, but there are going to be some successes and you back it with public money, so the paradigm, I suspect, needs to change, otherwise we are going to have quite a few decades of misery.

Q51 Dr Turner: Our record of public investment in industry is very, very poor, is it not? It has not really happened to any significant extent since perhaps the almost Stalinist days of CEGB⁶ and the UK Atomic Energy Authority when it was railroading a nuclear industry into being and so on.

Mr Edmonds: But it did produce electricity, mind.

Q52 Dr Turner: Do you think that there is a case for very much greater, albeit targeted, government intervention in order to secure an industrial future?

Mr Young: Perhaps I can come in on this in terms of looking at it in a modern business context. I think the key gap that we are talking about here is that there is a transition and there has got to be some pace to that transition. I think there is an awful lot which government can do to attract business to invest in, to trial and to demonstrate the new technologies and solutions that are required. I think something that the UK is quite good at and has been quite good at ever since Nicholas Stern's Report is articulating what the issues are and perhaps what some of the solutions need to achieve. If we can set the bars high enough, and there are mechanisms that have not been developed far enough, like forward commitment procurement or whatever, to define what it is that we want to purchase in the future, if we can give the opportunity to let the innovators come in and fail as well as succeed with government support to prove what the best solutions are, then I think a lot of these new seedcorn businesses that we do have, which are going to fulfil the requirements and perhaps become our major players in the future, will get accelerated. We need to put a tension into this gap between the inventions and the innovators and the big businesses and I think, as we have said, the big businesses that we have at the moment may actually not be best suited to the requirements in the future, but, if we can articulate those requirements and if we can create enough opportunity to

demonstrate those in a true commercial context, I think that is definitely a role for government; it is the demonstration part of RD&D.⁷

Q53 Dr Turner: So what you are saying is that established big businesses are too risk-averse to be interested in this issue and the innovative SMEs are faced with the valley of death and the Government is not doing enough to help them across the valley of death because it is one thing to innovate and produce something which is on the verge of commercial exploitation, but it involves a different order of magnitude both in finance, skills, et cetera, et cetera to get to large-scale deployment. Do you think that Government is failing to fill that role?

Mr Young: Yes, I think it is failing in terms of direct support in that kind of way, but I think it is also failing in not articulating strong enough policy and regulatory targets which reflect what the needs will be globally in the future. If we can build up the reputation in the UK of setting those standards first and of setting them in a sufficiently rigorous way in terms of decarbonising or in terms of emissions standards or whatever, then I think we will also attract overseas companies to invest in the UK because they know that that is the place where they will get the support to hit the technology not of today or tomorrow, but even the one after which will get them global sales.

Q54 Dr Turner: I am really supposed to be asking you questions about the skills gaps, but we have got into a much more interesting line of questioning. To bring it back to skills, in order to achieve progress, we are going to have to address all these skills gaps, so should the Government not only be giving the sort of support that we have talked about, but also undertaking targeted activity to plug the skills gaps because the two things need to go hand in hand?

Mr Young: Absolutely.

Mr Edmonds: On one small, but very important, skills gap, one of my jobs is that I sit on the Board of Salix which delivers government money into the public sector to support energy-saving projects. It has been very successful and we got extra money out of the Budget to do more of this. One of the things which we find, particularly when we are dealing with local authorities, is that a very significant shortage is of highly trained energy managers, and what typically happens is that a local authority develops a very good portfolio of projects that they want to pursue and then some other local authority poaches their energy manager because there is a massive shortage. It is fine for the energy manager, he or she moves off probably onto a high salary, and that local authority then sticks, it cannot find a replacement. There just are not enough fully qualified energy managers either in the public or the private sector, so energy efficiency, which is regarded by us and everybody as a very important component in this transitional policy, is not being properly serviced because we do not have the energy managers to service it, and we keep having these hiccups and

⁶ Note: (CEGB) Central Electricity Generating Board.

⁷ Note: (RD&D) Research, Development and Demonstration.

pauses, so that is one area where the skills gap needs to be filled. Of course, skills need to be related to policies and, if, as we suggest in our paper, it were decided that insulation standards, smart metering, electricity infrastructure, water infrastructure and social housing should be improved on a street-by-street basis, rather in the same way as we converted to natural gas or something like that, which could transform energy efficiency in existing houses, then you could train for that. That would be a very important skill and would do great things to reduce unemployment levels because the skills involved are not enormous and they could be taught fairly quickly and they could be limited in the same way as we have done in the past.

Q55 Dr Turner: How could you get industry to take a responsibility in this?

Mr Edmonds: Well, I think this is one of the roles of regulation. This is the point Peter was making, that, if Government, through its regulatory framework, demonstrates that progress, as I would put it, is going to be made, that by such-and-such a date these standards will have to be met and by such-and-such a date after that these standards will have to be met, then it is much easier to get the investment in industry for reaching those standards because people can see that survival requires those standards to be met, but also that money can be made in reaching those particular standards, so developing a regulatory framework has to exist alongside the necessary investment in industrial infrastructure.

Q56 Dr Turner: So the hands-off approach cannot be sustained?

Mr Edmonds: Well, I would say that, would I not!

Mr Young: Even from our business members, I think, that is exactly what they are saying, and they want to know where the responsibility lies so that there is some continuity there as well that they can believe well beyond the period of one government or whatever that there is some permanence there. I think one of the risks we have got is that we have seen a lot of short-term reactions which are good and, just to pick perhaps one example, if I may, in terms of the offshore renewable that we mentioned earlier this morning and the banding of the Renewables Obligation and raising that up to a factor of two, which just about satisfied the investors who were about to walk away from the offshore renewable, at the same time one of our members, SEEDA,⁸ is still struggling to retain Vestas, the only turbine blade manufacturer, in the UK. Now, the reason why that is on the point of disappearing in terms of 700 high-skilled jobs is because the reaction has been too short-term and there has not been a conviction that the Government can turn a very clear signal for renewables into a policy which is going to run through. I think that, for me, is a good exemplar of the difference between why business is not in there investing and creating this market demand for skills, even though the high-level policy is extremely strong.

Q57 Joan Walley: You just mentioned earlier on the importance of having a strategy, so it is difficult to see how a green skills strategy can develop if there is not an overall clear strategy, but nonetheless, I just wonder how you feel that the range of organisations which do have an interest in green skills, how well co-ordinated the overall action is and what can be done to improve it?

Mr Young: My personal experience is that it has got a long way to go to be co-ordinated and it starts again from where the ownership of that responsibility lies and the historical structure, it seems to me, which is compartmentalised, and this is a cross-cutting theme, and there is not at the moment a strong enough venue. There are various fora, there are various dialogues taking place, but there is nothing which, it seems to me, is able to drive the agenda forward at the pace that is required when you have to acclimatise between the existing structures, so I think there is some forum needed there or at least some vehicle which provides a single point, a long-term strategy, against which each of the individual components of the skills environment can then react and contribute.

Q58 Joan Walley: If you were asked, who, do you think, would you say would be the green leader of the green skills agenda? Is there a leader out there somewhere? Who is leading this whole agenda?

Mr Edmonds: You mean who is doing best at the moment or who should do it in the future?

Q59 Joan Walley: If you were asked who is actually leading this green skills agenda, who is doing it? Is anybody doing it, or who should, or could, be doing it? In previous Environmental Audit Select Committee reports that we have had on the whole different aspects of the sustainable development agenda, we have highlighted the importance of a leadership role to make sure that things go from the top down and to aim for things to go from the bottom up as well. I do not know where the leader is for this green skills agenda and I wonder if you do.

Mr Edmonds: Well, there is not one. We are back into the transformational problem, that lots and lots of organisations are bolting little environmental bits onto their training and saying that it is green training, whereas looking at the thing afresh and what is going to be needed in the future is rarely done, but it must be the Business Department, must it not? If we are talking about a leader in Government, it must be there. Getting a commitment from the CBI to follow up their really rather enlightened statements which have been made over the last six months or so with real activity in this area would be extremely valuable. To take one small, but very important, example, everybody knows that construction methods are going to change massively, the way in which the services are going to be installed, that we are going to move towards more micro-generation and, certainly in commercial buildings, more CHP⁹ and so on, so this requires a tremendous development of skills, but where are the

⁸ Note: (SEEDA) South East England Development Agency.

⁹ Note: (CHP) Combined Heat and Power.

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skills being developed? Are they being developed in the construction industry? Hardly. Well, there is a challenge. It could be made by the Business Department and the CBI and from the CBI then to construction members, and most of the big companies are members of the CBI, so there could be that type of approach. We then prepare for the future rather than simply sort of stagger on as each new regulation hits us.

Q60 Joan Walley: I am just wondering about the UK Commission on Employment and Skills. Was that meant to have some kind of co-ordinating role?

Mr Young: Well, that was the suggestion made back in the CEMEP days, that it was then just arriving on the scene and seemed to be a vehicle which could provide that. It is, as I understand it, an organ which will now be an organ of the Department for Business, Innovation and Skills, whatever the name is, and I think actually that what we are just seeing there is that we have actually had three departments in two years with that responsibility which, for me, says it all, but that some kind of commission or committee or forum which is under the new Business Department should be given this task.

Q61 Joan Walley: Was this included in the 39 words or however many words there are in the new title of the new Business Secretary of State, this green agenda aspect of it with reference to the green agenda?

Mr Young: I cannot recall, I am afraid. I do not know, but I doubt it.

Q62 Joan Walley: I am just wondering how fit for purpose the—

Mr Edmonds: His personal title is a bit complicated, so it used up a lot of the words, but no, I have seen no indication of that at all. I am not sure that the co-operation between the Business Department and DECC is as close as it should be in this particular area because DECC is meant to be producing the policy and the foresight for the future and so on and, as I understand it, the Business Department needs to be the operational arm. Well, that type of co-operation would be extraordinarily valuable.

Chairman: It all sounds really quite simple. We know what we are trying to do, we know where we need to get to and the benefits of doing so are enormous in terms of jobs and future prosperity, so why does it not happen? Is there some kind of cultural block to this or have people got their heads in the sand?

Q63 Joan Walley: Or is it vested interests elsewhere?

Mr Edmonds: There is this silo problem which we all know about in government, but there are devices for overcoming that as well. There is the problem of the lack of understanding, and we talked about that earlier, and there is also the problem of concern about just how big this task is and, therefore, as Peter says, people tend to try and dice it up so that they can find little bits that they can chew. The task is not a particularly difficult one and the solutions are not

particularly difficult, although doing it will be expensive, but, as the man said, if you think education is expensive, you should try paying the price of ignorance, and that, I think, is a very good slogan for this particular area. If we are so far behind the curve, as Dr Turner was saying, then we had better do something really quite quickly.

Q64 Mark Lazarowicz: In your report,¹⁰ you mention two specific programmes which could be significantly moving towards a low carbon economy. One is for a street-by-street, house-by-house energy efficiency programme and the other is a public procurement programme. How feasible are these programmes, given the current Government approach to the wider issue, and what needs to be done, in your view, to make them happen?

Mr Young: There needs to be more money put in on the energy efficiency side and there needs to be a bit more vision in terms of, if you are going to go and make that intervention, what is the maximum benefit upgrade, if you like, you can achieve. If you have got someone going into a house and they are putting in loft insulation, is that enough? It would be good to talk a bit more about what else could be done there. In the area of energy efficiency, the key thing about that is that it is a transitional activity, and I am not saying it is a sort of distraction while we deal with the main event we have just been talking about, but it is something which will give an immediate benefit to the overall economic well-being and competitiveness of the country as well as providing jobs and demonstrating actually the degree of employment opportunity there is from tackling this agenda.

Q65 Mark Lazarowicz: But, given we all know this and people have been saying this for five, ten years or more and there are all sorts of programmes out there which are meant to make it happen, why is it not happening?

Mr Edmonds: There is a real understanding problem. You say that everybody knows, but I am not sure that everybody does know. There is still a large proportion of the population who think that energy conservation is about switching off lights. Well, I am not against switching off lights, I think it is a very sensible thing, but work done by the Carbon Trust demonstrates quite easily that, if you are really looking at improving energy efficiency, you should buy better kit, whether that is domestic kit, industrial, commercial or whatever; that is the thing that persists. Second to that is to properly look after and maintain the kit you have got, and that is short of persistence, but it still has some value. Lastly is behavioural change, which is kind of useful, but you need to reinforce it every two weeks, otherwise people forget.

¹⁰ *Note:* The Aldersgate Group, Commission Statement: Driving investment and enterprise in green markets, June 2009 (<http://www.aldersgategroup.org.uk/public-reports/view-document/10>)

Q66 Mark Lazarowicz: Well, let me rephrase the question. Maybe there are sections of the general public who do not realise this, but policy-makers, Government both local and central, know this and know—

Mr Edmonds: No, they do not. It is not many months ago when people were being told, “Do your bit and switch the lights off”. Well, fine, I am not against that, but the idea that that makes a major contribution towards energy-saving without the most enormous and repeated reinforcement is absolute nonsense. If you transformed the efficiency of the white goods that people have in their houses, you could save a lot of energy. You just make the white goods more efficient. How do you do that? You regulate to make sure that particular products cannot be sold and you make sure that those products which are sold are properly labelled in energy efficiency terms. Now, we all know that is the way to do it, but it is not done. Now, that is one of the problems because people still take the simple way and say, “What we need is a behavioural change”. Of course we need a behavioural change, but we also need better kit and better maintenance and then we save energy.

Mr Young: We also need a joined-up approach. Just at the moment from the Landfill Directive in what has been a huge effort by local authorities to try and get behaviour changed at the household level in terms of recycling, there is no connection whatsoever between that with respect to schemes that are being set up to encourage people to insulate their lofts, nor is there any connection with respect to how to improve the energy efficiency of the energy-using equipment in your home. Those three things are all going on—

Q67 Mark Lazarowicz: So what kind of connection do you envisage there?

Mr Young: Well, if you packaged it up against this low carbon economy, however you want to put it to the public, which is actually about making yourself resource efficient and, hence, your economic expenditure lower and the benefits which come from that, you could make one intervention, cover all of those things at one time and go to that one behavioural change, instead of confusing the public by actually exhorting them to do independent things, some of which are actually directly conflicting because of the different responsibilities and the bodies which are interacting with the public. The same applies to industry and industry is also confused by that. They have a number of different schemes that come to them, looking at one particular element, and they have particular performance indicators which drive them down one particular route rather than looking at the overall low carbon, resource-efficient solutions which would bring them the most benefit.

Mr Edmonds: My local authority is very keen that before we put out the empty cans of dog food in the little recycling skips that they give us (and uncovered, but never mind about that) we wash them very thoroughly. We happen to be in a water-stressed area, so we are going to use a lot of water to wash the cans before we put them out. Now, someone ought to be doing some thinking about this, should they not? That does not seem to me to be a very wonderful way of making the connections that Peter is talking about.

Chairman: Well, thank you very much for coming in and for covering a good amount of ground today; we much appreciate the time you have given to us.

Tuesday 30 June 2009

Members present

Mr Tim Yeo, in the Chair

Mr Martin Caton
Colin Challen
Mr David Chaytor
Martin Horwood

Mark Lazarowicz
Dr Desmond Turner
Joan Walley

Memorandum submitted by the Sustainable Development Commission

THE SUSTAINABLE DEVELOPMENT COMMISSION

1. The Sustainable Development Commission is the Government's independent adviser on sustainable development, reporting to the Prime Minister, the First Ministers of Scotland and Wales and the First Minister and Deputy First Minister of Northern Ireland. We have been working closely with DIUS on skills policy; most recently we have contributed to the cross departmental high level forum on LCREE skills and the Windsor Consultation on low carbon skills, and, with the TUC and the LSC, convened a round table for the unions, business and the skills sector on sustainable skills; we have also advised on practical steps DIUS's skills and innovation directorates should take to play a more active role in the shift to a low carbon economy.

SUMMARY

2. The Government has stated that the move to a sustainable and low carbon economy requires "industrial activism," including interventions to deliver the skills required. Without these interventions the UK may lose out in international markets and fail to meet its carbon emission targets. This means that energy and other policies must send clear signals to industry about the nature of future demand, steps must be taken to ensure industry, particularly SMEs, are in a position to respond to these signals and invest in skills, and the Government must ensure that the skills sector is in a position to respond to the resulting demand for training. Unfortunately, although this strategy may be accepted in theory by the Government, it is not being implemented effectively. There has been much discussion and considerable activity, but no real concerted programme is in place to ensure the momentum need to turn this kind of strategy into action. To put this right, three things are essential: better co-ordination of policy, crystal clarity that this is a Ministerial priority, and a timetable for the period from now to spring of next year. This memorandum concludes with key milestones for that timetable.

BACKGROUND

3. The Government believes we need to move to a sustainable and low carbon economy and the social returns of such a move are well established: reduced reliance on potentially insecure imported energy resources, reduced carbon emissions, savings from lower fuel bills and the protection and creation of a significant number of relatively high value added jobs in both the long and short term. The Government is also clear that market forces alone will not bring this about: significant "industrial activism"—and "skills activism"—is required.

4. We agree that this "industrial activism" is needed. In our pre-Budget submission "A Sustainable New Deal" we convened a number of estimates about the job creation potential of a "green fiscal stimulus" and estimated that an investment of £30 billion would create c. 800,000 jobs (mainly in renewables, retrofit, new buildings, other energy efficiency measures and infrastructure improvements).¹ As Deutsche Bank has argued, "one of the reasons that the 'green sweet spot' is an attractive focus for an economic stimulus is the labour intensity of many of its sectors".² In reality this level of stimulus is now unlikely given the outlook for public spending, however that makes government's role in facilitating and enabling private sector investment all the more important. An important part of that role is the intervention needed to deliver the skills required ("green skills"), whether these are sector specific (eg those needed for "the Great British Refurb") or useful in all sectors (eg resource management skills).

5. While we believe the Government's overall objectives in this regard are sound, words are not being matched by deeds. As business attendees at a recent Windsor "summit" made clear, it is time to stop talking and start taking action.

¹ Sustainable Development Commission, April 2009

² DB 2009 quoted in Sustainable Development Commission op cit.

 ANALYSIS AND STRATEGY

6. The following analysis of the “green skills” problem and its solution is now widely but not universally accepted (NB “green skills” is used as a shorthand for not only sector specific skills such as those needed for “the Great British Refurb” but also those skills and capacities that are needed in all sectors, such as resource management and carbon accounting, understanding risk and the precautionary principle, critical thinking and change management. We restate the analysis here as context.

7. Government interventions around the world are creating a market for low carbon goods and services, from the urgent and immediate such as retrofit, or increasing carbon and resource efficiency in industry and the public sector, to those which will become important in the longer term, such as electric cars. To the extent that these interventions send clear and unambiguous signals about the nature of future demand, investment in the relevant goods and services will be strong; to the extent that the signals are ambiguous or weak, investment will be relatively weak.

8. As things stand in the UK, these signals are not reaching industry—and indeed the public sector—as clearly as they could: the Government has set ambitious emissions targets for 2050 and 2020, but there is widespread scepticism, expressed at several seminars and fora for business that we have attended, as to its intentions in the short to medium term that frames most business decisions: will it create either the regulatory and fiscal regime or the government investment programme that will drive the necessary commercial investment in green skills (whether sector specific or useful in all sectors)? So for example potential investors in renewable energy have doubts about the future planning regime and investors in retrofit have doubts about financing plans. Investors in all sectors are uncertain about the future price of carbon or even the Government’s commitment to ensuring a carbon price that will really drive change.

9. In internationally traded sectors the resulting danger for the UK is that the uncertainty about future domestic demand holds back the investment in skills that businesses will need to compete successfully in the global market. In purely domestic sectors the danger is that the same uncertainty and resulting failure to invest will create supply bottlenecks, making it impossible for government to achieve its carbon emission targets, and ultimately damaging the global fight against climate change. And in all sectors, the danger is that industry, particularly SMEs, will be unprepared for rises in carbon and other resource prices, reducing competitiveness and increased costs for consumers.

10. Our impression is that these dangers are recognised by the government, at least in theory, and that accordingly a three pronged strategy to deal with it is emerging:

1. The government will ensure signals about future demand are clearer—not just in green industries but across the economy; this is partly a matter of making sure that the range of government interventions—including regulations, incentives, investments, taxes and enabling measures—do indeed add up to a plan that will drive change, and then communicating this.
2. It will take steps to overcome the lack of knowledge, shortage of finance and other barriers which prevent businesses understanding and then acting on these signals, ie prevent them from investing in “green skills” whether sector specific or useful in all sectors. Many SMEs for example may not appreciate the savings they can make from best practice resource management, and even if they do may not know how to implement this.
3. It will ensure that the skills sector—those who specify and deliver qualifications and training—understands the likely future demand for skills and responds accordingly. For example all National Occupational Standards could and should include a module on sustainability.³

11. This strategy, were it implemented, would be entirely coherent. It does not add up to central planning, with BIS attempting to control how many courses in what are conducted where, but active indicative planning combined with a whole series of enabling interventions. The problem is it is not turning into action with the urgency we would expect, given the recession and the imperatives of climate change itself.

THE NATURE OF THE PROBLEM

12. There has been much discussion and consultation, a new machinery (the UKCES, SFA, LSIS)⁴ is coming into being, the Low Carbon Industrial Strategy will be published in July, and a green fiscal stimulus was announced in the budget. At the same time the DECC “Summer Strategy” for meeting the greenhouse gas targets set by the Climate Change Committee, combined with individual departments’ sectoral emissions reduction strategies, will start to strengthen the signals sent to industry. Good work is also in hand to identify and showcase best practice. This is all positive. However, any change strategy requires a degree of momentum to turn words into real and significant change—without this, entirely valiant implementation efforts of the kind just referred to make no headway against existing, well established patterns. The requirement for momentum is all the more pressing given the potential scale and speed of the change to a low carbon economy and the complexity of the array of measures being introduced.

³ As recommended by the first “Outcomes Note” arising from the Windsor Consultation, “Skills for Sustainable Future: facing the challenge.” June 2008

⁴ UK Commission for Employment and Skills, Skills Funding Agency, Learning and Skills Improvement Service

13. This momentum can be achieved through a combination of real progress on the long and medium term planning required, clear communication and those quick wins that reassure business the Government really means what it says. Our strong impression, however, is that as yet the well co-ordinated and prioritised programme across government that would achieve these things, and so the necessary momentum, is not in place.

14. So for example we have been taking part in the Windsor Consultation on low carbon skills, most recently attending the skills summit with leading employers held at Windsor Castle on 18–19 May. While these discussions have been interesting and some useful ideas have been generated, there has been little sense of government progress or action, with no clear accountability or ownership. Not surprisingly, the businesses participants feel frustrated: after all, they might reasonably observe, over 18 months have passed since publication of the excellent CEMEP report setting out a strategy⁵ and a year since the group arrived at a coherent plan for skills delivery which was accepted by the Government.⁶

15. At the same time, in the discussions we have had and are continuing to have with officials, it has become apparent that the kind of ambitious, momentum building programme we would like to see and which would convince business that government really is acting is unlikely to be implemented, essentially for administrative reasons rather than because of any disagreement as to its value. It just hasn't reached the top of the in-tray.

16. This matters. To take just one example, there is evidence that for retrofitting housing stock, the current levels of investment in skills is insufficient to meet even the existing level of demand, let alone that which will be required to meet the Government's targets, and this shortage will, of course, push up the costs of the programme and make it less comprehensive.⁷

RECOMMENDATIONS

17. To put this right three things are needed and needed now: co-ordination, prioritisation and a timetable.

18. Effective co-ordination is important for the whole programme, but particularly to achieve quick wins. The merger of BERR and DIUS into BIS will make co-ordination easier to achieve. We are confident that if the other two ingredients can be secured, effective co-ordination can follow.

19. Most important, if Ministers want real progress then they need to make crystal clear to officials that this is a priority. There have been a number of other pressing issues in the skills area (notably the FE capital budget): it would be appalling—but entirely typical—if shortage of official time was holding back the UK's progress. In addition, although both the Prime Minister and the First Secretary have made public statements that the shift to a low carbon economy may be *the* critical underlying change—and opportunity—facing the UK economy and that intervention is needed to make it happen, we are told that there are still pockets of resistance within government to the analysis and strategy set out above. This too could hold back progress. So clarifying priorities is essential.

20. Third and finally, a timetable needs to be set out in a way which will translate ministerial priorities into effective action, and which will allow Ministers to hold officials and the various NDPBs involved to account. This may be partly a matter of creating priorities *within* the programme, given unavoidable shortages of time and money in the immediate short term, but it is also a matter of setting target dates for the key milestones that will contribute to momentum and working back from those. We accept that the problems are difficult and complex and new, but that is precisely why these rather basic programme management principles need to be applied if we are to avoid drift.

21. Our view is that visible progress can and should be made by three key dates. Autumn 2009, ie the start of a new “season” and the run up to Copenhagen, January 2010, ie the start of a new decade and the natural follow up to Copenhagen, and Spring 2010, ie the first point at which evidence of real progress could be produced. The following sets out the kind of milestones that should be set now for these dates.

THE TIMETABLE

22. *Autumn 2009:* BIS and the UKCES should have published a quantified jobs and skills action plan for the next two years, linked to but going beyond the financial support measures announced in the Budget and building on work that has been done inside and beyond government over the last two years. It will address (a) how many people need to be trained in what skills for what jobs in the short term (including both technical skills and more generic skills such as carbon accounting, sustainable procurement and change management which need to be integrated into programmes for the existing workforce), and (b) the actions BIS will take to ensure the signals government is sending about the future are being acted on. It will be communicated actively to the skills sector.

23. *January 2010:* BIS and the UKCES should have published estimates of the size and nature of the markets that government interventions will create. This will require BIS to have worked with other relevant departments to ensure both that their measures are sufficiently robust to work as the basis of a signal to

⁵ Commission on Environmental Markets and Economic Performance

⁶ Windsor Consultation—op cit

⁷ ProEnviro, Skills for a Low Carbon and Resource Efficient Economy, 2008

industry and that they are as ambitious as leading edge practice and thinking in UK industry allows. It will have been developed with business and should be communicated to business. It should also form the basis for advice to SMEs through the Train to Gain/Business Link network (who are not yet equipped to advise in this area) and ongoing communications to the skills industry via UKCES and the RDAs.

24. *Spring 2010*: BIS should have published a report of progress against the Autumn 2009 plan. The skills industry should have developed appropriate revised qualifications, occupational standards, course content and inspection guidance (an on-going process but significant progress should have been made).

25. Our very strong view is that if BIS is to set and maintain a timetable along these lines it will need to work with an external partner able to apply the necessary pressure for momentum building dates.

May 2009

Witnesses: Ms Tess Gill, Commissioner for Work and Skills, and *Mr Charles Seaford*, Senior Engagement Analyst, Sustainable Development Commission, gave evidence.

Q68 Chairman: Good morning, and welcome to the Committee; it is our second evidence session on this new inquiry so we are glad to have your evidence. Your submission says¹ that at the Windsor Consultation on low carbon skills there was little sense of progress on the CEMEP² recommendations; why do you think we are making so little progress towards developing the skills for a low carbon economy?

Ms Gill: There has been a failure to have ownership of the project to any significant degree. At the Windsor Consultation the feeling was that the UK Commission for Employment and Skills would be a suitable body to take ownership, to look at the whole skills system, which is quite fragmented as your Committee probably knows. We have got what was then DIUS, now BIS, but then there are all kinds of different agencies under that—Learning and Skills Council, funding agencies, we have the providers, the colleges and so on and then we have got the qualification bodies. If one is going to have to have a co-ordinated approach to ensuring that public funding, provision of skills, employers seeking skills, is going to be co-ordinated around the need to transform our society in a low carbon, resource-efficient way, then someone really has to—it was considered at the Windsor Consultation and since—take ownership of that project and work throughout the system to ensure it happens. At that stage it was thought that the UK Commission would be the appropriate body, but since then the Commission has said it has not got the capacity to be involved in this and in fact does not participate in the meetings on that subject. To some extent DIUS took action but really only saw itself holding the ring because no one else was doing it rather, it is fair to say, than because it thought it was wholly appropriate. One needs the sector skills councils to be fully involved; there is an Alliance for sector skills councils and we thought perhaps that would be of assistance, but that is newly set up and equally does not really have the capacity. We think that in the absence of the UK CES—and that still would be the appropriate body, it was set up specifically to advise the Government on employment and skills and to have an overview of what the sector skills councils are up to—if that is

not going to take the responsibility then really it is down to the new department, BIS to take on that task.

Q69 Chairman: That is where the leadership should come from.

Ms Gill: In the absence of anything else, yes, it should. The buck has to stop with the Government in this area; it does not mean that the Government is going to regulate what kind of skills are going to be provided. It is meant to be a demand-led system but it is also widely recognised that there is what is called latent demand. I am not sure whether latent demand exists really, but what it means is that there is a lack of appropriate demand for some of the skills that we are after, whether they are technical skills, the STEM skills, whether they are carbon accounting, procurement, construction, the “Great British Refurb”—it is widely recognised we do not have the skills provision we should have and that something should be done about it. We set that out in our paper, some of the policies are there but the action is lacking.

Q70 Mr Caton: Looking at Government, in your evidence you talk about pockets of resistance within Government preventing action on skills. What parts of Government are showing this resistance, why do you think they are and how do we overcome it?

Ms Gill: Charles, do you want to deal with this?

Mr Seaford: Pockets of resistance may be putting it a little strongly, the more important point is that there is resistance to making it a priority—perhaps I could put it that way—within what is now BIS, a sense that this is not something that we should put resources into, even the quite small quantity of resources needed to drive the policy through, and that is holding up action. It is within the department but it is not an active resistance, it is a passive resistance that actually means that it fails to become the priority it needs to be, to make something happen.

Q71 Mr Caton: How do we overcome it?

Mr Seaford: It is quite simple; ministers have to say that it is a priority and officials have to agree to a timetable for delivery of real results over a nine month period.

¹ See Ev 25

² *Note:* Commission on Environmental Markets and Economic Performance (CEMP)

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Q72 Colin Challen: Is this because really—let us call a spade a spade—the Government sees green jobs to some extent as Mickey Mouse jobs? Real jobs are in nuclear power, in CCS and all the big things, and wind turbines and so on are a bit of a poor relation?

Ms Gill: I agree that to start with, it might have been seen that they were channelling green jobs into environmental industries but more recent statements have accepted that what we are talking about is a transformation of our whole economy and that the public sector, for example, should give a lead. What you are talking about there is, for example, procurement and having the right procurement skills. This is not training apprentices, this is upskilling the current workforce in managerial levels but also engaging the whole of the workforce, and it is also accepted that it is important to bring in the trade unions, the union learning representatives, in this task. We see the need for skills and the Government, certainly in some of their statements, accept it as being a very wide term. It is not just technical and skills and it is not just managerial soft skills, it is engaging the whole workforce, but within that there are specific technical and knowledge issues that have to be tackled. It is not so much that individual ministers do not see that, it is that they do not have a joined-up ownership of how to progress it, and in fact you could take the Prime Minister's document yesterday, *Building Britain's Future* as an example because if you look at that the issue of investing for a return to full employment is dealt with, skills is mentioned, but not at all in the context of low carbon. In fact you have to go well through the document before you get to the low carbon skills for the future, and there it says: "Our skills policy has two central priorities. First, it will focus on the immediate priority of getting people back into work, ensuring that they can get on and make progress in their careers. Second, in the long term, skills policy and the resources we devote to skills training need to be properly strategic and responsive both to the demands of business and to global trends." That still, at that stage, has not addressed the issue of specific skills or indeed general skills for transforming society to low carbon. That comes towards the end of the document, not joined up with the earlier parts, under the heading "The shift to a low carbon economy" where they do talk about the "Great British Refurb". It is just one example, and one could find it in most of these documents, that there is not a joined-up approach, they do not start with thinking when we talk about skills, if we are serious about transforming our economy, we talk about skills in that context and we ensure that the different bits of Government and the different agencies are joined up in this venture.

Q73 Colin Challen: Looking at the £2.3 billion that we are pumping into the car industry to save it from bankruptcy, would you expect to see more conditionality there on developing these skills that you are talking about?

Ms Gill: Certainly the Sustainable Development Commission thought that there should be conditionality as to the cars that had to be purchased

being environmentally-sound low carbon vehicles, which there was not. Obviously if that was done that would then stimulate the market, would it not, for developing the skills to provide those vehicles, so it is quite a good example of policy not being joined-up in our view.

Q74 Mr Chaytor: In the annex to your submission³ you set out a timetable, which is quite a short timetable of about six months, but you say that by January 2010 the Department and the Commission should have published estimates of the size and nature of the market that government interventions will create. My question is to what extent do you think the source of the problem is that really in Government there is a nervousness about the capacity of intervention to create markets. Is there an ideological legacy here about the role of Government that is the root cause of this lack of co-ordination and fragmentation that you have referred to?

Mr Seaford: Yes, I think there is. We get some signals that there is a reluctance to push ahead—it is a mixture of reluctance and nervousness because people have not done this for quite a long time. If you are going to do industrial strategy there is no one around who has done it since the 1970s, they have all gone, so it is partly an ideological thing but it is also a sense of can we really do this and a lack of confidence. We would encourage the Government to bite the bullet and work with industry obviously—it is something that can only be done in partnership with industry—so that a shared view is developed. It was striking the other day, Tony Hayward of BP saying that he did not think that renewables were going to be viable and that they were pulling back in that area. At the same time we are talking about 30 per cent of electricity generation in this country coming from renewables in the next ten years, so there is a sort of disconnect here and there needs to be a much more active collaboration with industry to pull those things together again.

Q75 Chairman: You have called for a plan to be published in the autumn but do you see anything in the Prime Minister's statement yesterday that would form the nucleus of that plan?

Mr Seaford: There are two things that are going to happen in the autumn anyway, the White Paper on getting Britain back to work and the skills strategy, but we were a bit concerned that the skills strategy was talking about an approach to developing skills and what we are talking about is, this is what is going to happen. Really, the time has gone for developing approaches, we really need to get on to the next stage. We have been talking about approaches for two years now.

Q76 Mr Chaytor: In terms of the Government's levers over either industry as a whole or individual companies or other public agencies, what are the most effective means that could be introduced to

³ See Ev 27

hold public agencies and private companies to account and incentivise them to get them to take this issue more seriously?

Ms Gill: In the public sector it should not really be difficult, should it, if there were strong calls for leadership. There have been some calls but not sufficient—it should be built into everyone's performance.

Q77 Mr Chaytor: Are there some mechanisms, performance management indicators for public agencies for example?

Ms Gill: There should be mechanisms, indeed. I was saying to Charles as we came in that I noticed that President Putin in Russia had told the leading bankers that they could not take a holiday unless they increased lending; perhaps that is going a little far but at least it shows the leadership that possibly we need. In the public sector it really should not be difficult if there was sufficient determination. In the private sector some of the leading employers, of course, are doing quite well on this agenda. The more difficult area is the SMEs, so if you take the Great British Refurb it is quite hard to get at those employers and get them to think that they are going to spend money and effort having their workforce—and many of them are individual traders—upskilled. At the moment they probably do need some funding assistance—that is the feedback we have had—that even if they go for the brokers under the Train for Gain system they in fact have to pay and, equally, they are not prepared to put up the money very often. There was talk at the last Windsor Consultation of trying to use supply chains to get down to the SMEs, and there is something in that, but I think its own it would not be nearly sufficient and one actually has to look at how you can assist. If we are serious—taking the example of the Great British Refurb—we want our construction industry, our electricians, our plumbers not just to do the minimum but to understand why they are doing it, because the other point that was made was you actually have to educate householders, because it is no good refurbishing their house if they keep their central heating on high, open the window and buy lots of electrical appliances, so it has to be part of a general project. Ideally the plumber and the electrician would go in as missionaries, understanding why they are doing this, and engaging the householder in the project. We have some way to go to get that far.

Mr Seaford: It is an absolutely key point that Tess made earlier about things being joined-up. The nature of this project is such that you have to have a joined-up approach otherwise it just does not work, so it has got to work firstly at the broad level. This is the direction we are going in, we have got to get these very clear signals coming out from Government that this is the nature of the demand in the future. Then you have to provide, at the next level down, help to the small and medium size enterprises so that they can actually respond to those broad signals, whether it is through Train to Gain, advising people on the nature of the skills that are going to be needed or helping with funding. Then you have to work at the

level of the consumer and then you have to work at the level of the skills provision itself, and these different layers have got to be managed in synch and held together as part of one project. The danger, as Tess has already said, is that that is not happening.

Q78 Joan Walley: You have given an example of the way in which things are not working in a joined-up, integrated way, but just going back we have had the Government's Commission on Environmental Markets and Economic Performance, so that set out what was going to be a clear approach back in 2007. Then we get to the stage whereby Government has been really firm about the commitments it is making to carbon reduction, so we know that in industry and public sector services at some stage, if we are going to reach that reduced amount of carbon emissions, things are going to have to change. Then in your evidence, particularly following the Windsor meeting that was held, you talked about how industry and public services need to get clear signals from Government as to what needs to be done, but I am still not clear what you are actually saying needs to be done. I would have thought that the regulations need to be put in place so that there is a fair signal to industry that you have got to have fiscal packages within the Treasury, and every single government investment programme that there is—and you just referred to the Prime Minister's statement yesterday—needs to show how each and every new policy or new spending commitment is embracing this green agenda. How is that going to happen, where are the action plans, what does the Government need to do to make sure that industry and public services, rather than face uncertainty as to how this is going to happen, know very clearly what they have got to do and what the time frame is?

Ms Gill: It is obviously a complex question and there is not a short, simple answer because there are a lot of levers that can be used, and I am sure you have already had people talk to you about the role that regulation has, the role that fiscal stimulus has and where things could go wrong. For example, if you take funding for renewables, there are widespread complaints that it is stop start, no sooner have they given some funding to help people put up their solar panels than they run out of funds, and this of course does not help industry. That is an example where it does not work; equally the planning system holding up wind farms. So there is no one simple mechanism because we are dealing with the whole economy.

Q79 Joan Walley: But meanwhile industry is uncertain, it is not getting clear signals, so all the time investment decisions are being made which are locking different industries into spending over the next 15 years. Similarly, private finance initiatives are going ahead which could be doubly expensive, so where is that clear line of direction coming from and what does the Government need to do to make sure that it is there?

Ms Gill: I do not think it is at the moment. It presumably rests with Lord Mandelson, he is now in charge of the major department that is involved here, together with DECC, in looking at long term

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planning, and this as you rightly say is a matter of long term planning; short term will not help. If you look at Germany there has been long term planning there, there has been far closer collaboration between the banks and industry over a long period of time and therefore industry has felt secure in the knowledge that if they invest in renewables there will be a market for renewables, and we need those kind of long term signals by this Government. It can be done, it is just that it has not been done.

Q80 Joan Walley: When you say it can be done, what is “it”? When you say it can be done what is it exactly that Government needs to be doing to give that certainty to industry?

Ms Gill: For example, on the funding for renewables, instead of having stop start systems so that they run out of funding they ought to ensure that there will be funding—and some of this they say they are going to do more on, do they not, like feed-in tariffs that they are going to be introducing. But every time they introduce an initiative, instead of just being an initiative for a six-month or a nine-month period or a year, but it runs out after six months, each of those initiatives needs to take a longer term view; that needs to be built into their planning.

Q81 Joan Walley: That presupposes then that whatever the political persuasion of the government in power there needs to be buy-in from all the political parties; do you see evidence of that?

Ms Gill: That is a difficult one to answer, is it not? I do not think I am going to attempt to. Charles.

Mr Seaford: No.

Q82 Chairman: But on that point, if we are looking for more, longer term, predictable, guaranteed incentives for renewable energy, that means higher consumer prices does it not?

Ms Gill: It may do but then there needs to be subsidy, does there not, to deal with those that are on the poverty side of the equation.

Q83 Chairman: I am not aware that any political party is now advocating more public spending in this area, so if there are to be more incentives they are going to have to come from the consumers. I mean, the ROs are ultimately funded by consumers, feed-in tariffs presumably will also be asked were they funded by consumers; it would be moiré honest I think if people who are calling for more effort to be made to create green jobs accepted publicly that there is a better chance of getting bipartisan support if you lay on the line a high amount of investment in renewables creating jobs in that area means higher consumer prices.

Ms Gill: We have said that in our *Green New Deal* document.⁴ I am not being evasive here, it is just not my particular area, but I think that is indeed what we have said.

Q84 Chairman: Those people who come to committees like this and say you need a bipartisan approach need to face up to the consequences; we have to educate the public that more green energy means higher energy prices, everyone pays more for their electricity.

Ms Gill: You also have to put it in the context of the alternatives, do you not, that oil is an exhaustible supply, we need security in our energy industry, that there are ways of financing some of this by leasing from the energy supply companies—which are under consideration certainly. You have to put it in the wider context but at the end of the day we all are going to have to pay if we are going to combat climate change to some extent, but the longer term inter-generational consequences of not doing that are so severe that we have to educate and persuade and mobilise.

Q85 Chairman: Yes, you do not need to persuade this Committee of that point but we do need to be very clear that when we are calling for more investment in these areas that means higher prices. It is very important to be honest with the public about this. We had a toy with a White Paper in 2003 about having secure energy, green energy and cheap energy: you cannot and it is important that people who are now calling for more investment should face up to the consequence.

Mr Seaford: Absolutely.

Q86 Colin Challen: I absolutely agree with that and it certainly applies to the nuclear power industry which had its own secret tax back in the 1980s called NOFO—everybody paid it. My question really is continuing this line because our international competitiveness is very important and green skills will be a very important part of that. You have mentioned the German example and the feed-in tariffs and that long term stable approach which has given the signals for a long time ahead, and that is what I would describe as an interventionist measure; it is a pushing measure rather than pulling. You cited cars: if you make green cars then you will inevitably have green skills but that sort of leaves a lot to chance, does it not, so you would be doing more interventionist things to improve our competitive position rather than simply saying as we do at the moment that the market will decide the mix and therefore the market will decide on the skills mix as well which is the inevitable consequence of a choose no winners policy.

Ms Gill: It has to be a mix of the two, does it not? Government must take the lead, it must provide the framework, it must provide the regulatory regime, it must give the right indicators as in the example of cars in saying we will provide funds provided that they go towards certain green products or environmentally sound products; that would stimulate the market. It has a huge weapon in public procurement, which is probably a bit under-utilised at the moment, and if we had environmental requirements built in more than they are currently, right down supply chains for the public sector, that would be a very powerful market stimulus. It would

⁴ Note: Sustainable Development Commission, *A Sustainable New Deal*, 7 April 2009.—<http://www.sd-commission.org.uk/publications/downloads/SND—booklet—w.pdf>

not leave matters to chance but should not have any adverse consequences in terms of being stop-start or any other disadvantages that one can see.

Q87 Colin Challen: The market-based approach does seem to have failed us and if you look back to the privatisation of electricity generation the investment in research and development just plummeted to practically zero. Should we be taking really strong interventionist measures, should we move away from giving hints and signals as we are at the moment? As you say, they all seem to run out of steam after about six months. What more could be done on that front if that is to be the successful approach?

Ms Gill: It has to be a mixture. Some parts of the private sector are undertaking quite good measures so we are not talking about changing to a command and control economy, but we are talking about Government through the public sector and through giving the right support and indication to the private sector being able to move forward. I am not sure whether you are prompting me to say that we should fundamentally change the basis of the economy because I do not think we would go that far.

Q88 Colin Challen: It might mean directing a lot more to happen. If climate change is as serious as our leaders tell us it is and the science certainly does, surely we should be taking more of an interventionist approach with a lot more planning and a lot more direction from the centre to say right, we are going to have to exceed our targets on insulation therefore we will have to train X number of people to do it rather than simply saying we will have a target with some financial support mechanisms and then we will just throw it all into the air and see how it lands.

Mr Seaford: I would agree that we need to be rather clear that we need so many thousands of people to do this and so many thousands of people to do that, but that is not something Government should do in a sort of ministry of planning in Victoria Street, it is something that has to be done with industry, we would suggest, and the people who actually are doing this already. You say should we not move over to a much stronger interventionist system, we would say that the intermediate model has not really been tried yet, we have not actually got a proper system of indicative planning working at the moment, and I go back to the point I was making about Tony Hayward. We do not actually have at the moment a way of working with industry that allows us to map out how things are going to be, and until we have done I do not think we should go straight over to more command and control personally; that would be our view.

Ms Gill: To take an example where more regulation probably would assist, if you take the Great British Refurb at the moment we have got standards for new build and we have said all along well actually 90 per cent of our buildings are existing buildings. We would like to see the process of regulation to upgrade existing buildings together with some form of finance for those who could not afford it, either by lending—that might be quite a good mechanism—or

the upfront costs to be recouped through saving money through energy efficiency and so on, with perhaps some imaginative programme to speed up that whole process, because that would be a big step forward in moving towards our overall targets. Government could certainly move faster on that than they are and it would then be a mixture of providing the regulatory framework and would enable the construction industry to know funds were available, so they would be stimulated to do something about upskilling their work force.

Q89 Dr Turner: You want the Government to have a green skills policy, you want to see a pull-through of green jobs. Probably one of the most effective connections we can make is to ensure that there are companies crying out for people with green skills, but that is simply not happening at the moment because although the Government has paid lip service to a green industrial strategy it has not set out any ways of actually bringing it into being. Can you tell us the sort of things you would like to see the Government doing to achieve that?

Mr Seaford: There are certain areas of activity which the Government can influence and that industry cannot. Government could say right, we are committed to ensuring that there will be a higher carbon price, a properly-formulated indicative carbon price going forward.

Q90 Dr Turner: But we are not committed to any such thing are we?

Mr Seaford: I know we are not, but you asked me what we should be doing.

Q91 Dr Turner: Sorry, I thought you were indicating the Government were.

Mr Seaford: That is the problem, if there is not a clear indicative carbon price for the future then obviously businesses cannot plan and businesses themselves are crying out for some sort of clearer signals about what a target carbon price might be. That is the first point and that applies across the economy. Then you have got the specific programmes that Tess has been talking about—refurbishment, the Great British Refurb and so on and so forth—and those could be made much stronger and the targets made much stronger and harder: these things are going to happen by this date and that is going to require the following kind of industrial investment. The point I was making earlier was that by working with the relevant industries we can work out some form of industrial plan in key sectors like the building industry where real progress can be made. Then you have renewables, which we have touched on, and as the Chairman said a little bit of honesty about the consequences of that, but in the context of a higher carbon price that may become easier to do. There are then programmes like electric cars, which are already underway, with a clear commitment to investment in the infrastructure, and any other sectors where infrastructure investment is going to be important. You can see there is a combination of measures, a general commitment to an indicative carbon price

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and then a commitment to a set of regulatory and fiscal incentives in specific sectors and investment which will drive industry to do what it needs to do. It is not rocket science.

Q92 Dr Turner: We know it is not rocket science and, as you have already referred to, the Germans have shown us for the last few years quite clearly how to do this. It is quite simple, it is certainly not rocket science, and although it costs it does not cost any more than, for instance, our own renewable obligation does to deliver far less. Do you see any sign of the Government carrying out measures as clear and effective as the Germans have in creating the market conditions to create success? Germany's wind industry and solar power industry between them must be worth about 250,000 jobs but we have nothing comparable in this country at the moment, although we have the opportunities surprisingly enough. Have you seen any sign of the Government doing this and how would you want it to do it if you did?

Ms Gill: We have set out that we would want them to start off with some kind of timetabled plan in the context of skills, which is our particular area, to drive this forward. It is not in our area of expertise to lay down everything they should do so that we should rival Germany, although it would be delightful if we could. We can all see examples around us where they plainly are not doing that, not just in the area of renewables and the Great British Refurb, you can look at our transport system where, certainly in the Sustainable Development Commission, we are keen they move forward on the electrification of the railways, but if they are going to do that then they obviously have to make sure that the grid supports that and that we have green electricity. There are therefore many areas where one would want to see—and we have produced detailed policies in some of these areas which we are very happy to share with this Committee on steps we think they should take.

Q93 Dr Turner: I am beginning to understand the difficulties that the Government has in seeing a clear way forward if bodies like the TUC cannot.

Ms Gill: We are not the TUC.

Q94 Dr Turner: Frankly, you have not come up with anything tangible.

Ms Gill: We are not the TUC.

Q95 Chairman: This is the Sustainable Development Commission.

Ms Gill: You are going to hear from the TUC and perhaps they will satisfy you more but it is a little unfair to say that we have not come up with anything tangible.

Q96 Martin Horwood: Can I just come back to Charles. You have just now, very rightly, identified the indicative carbon price as a really key driver of green jobs that would drive investment but if you are not in favour of a command and control economy what exactly should Government or even the European Union do to intervene to support the carbon price if it drops too low, as it has done in the past.

Mr Seaford: I am not an expert in managing the carbon market so I do not have a proposal up my sleeve to present to you. I was merely asked what would drive an effective low carbon industrial strategy and I mentioned a clear indicative carbon price as something that is necessary for that to happen, but in terms of how it would actually operate I assume that there would have to be some market intervention in the way that you have an indicative price for sterling, but I am not an expert in that, sorry.

Ms Gill: It is generally recognised that the Government as part of the EU system is setting the carbon price and so far it has not worked, has it, but it is hoped that it will work in the future.

Martin Horwood: That is probably something we will have to explore with other witnesses I guess.

Chairman: Thank you very much indeed and also thank you to your colleagues in the SDC as well for the work that has been drawn on from time to time.

Memorandum submitted by the TUC

The TUC welcomes the Committee's decision to enquire into the key question set out in its brief: *How the UK can maximise the environmentally positive opportunities arising in changes from public spending intended to help tackle the recession?*

The TUC's very first concern is to ensure a green economic transformation that involves a just transition to a low carbon future. We agree with a forecast of the impact of climate change policies undertaken by the ETUC for the EU: "Climate change represents an unprecedented challenge for employment policies and for the social partners: the anticipated job gains and losses are sizeable, and no sector can afford to ignore the consequences of climate change". Jobs gained and displaced will vary between sectors, and over time and place.

We have therefore supported a proposal from the International Trade Union Confederation (ITUC) for a "just transition" framework within the UN's climate change agreement in Copenhagen, a concept which the UN has now drafted into its negotiating text¹ for Copenhagen: *An economic transition is needed that shifts global economic growth patterns towards a low emission economy based on more sustainable production and consumption, promoting sustainable lifestyles and climate-resilient development while ensuring a just transition of the workforce. The active participation of all stakeholders in this transition should be sought, be they governmental, private business or civil society, including the youth and addressing the need for gender equity.*

Commitment to a fair and just transition is therefore essential, involving three pillars: investment in green jobs and new low carbon technology; a green skills and training strategy; and stakeholder consultation between government, employers and trade unions.

KEY POINTS

- The centrepiece of the economic recovery package must be a major programme of public works.
- Only a full scale turbine industry will meet our ambitious green jobs targets.
- Government to move quickly to introduce the Feed-In Tariff, including both heat and power.
- It is essential to maintain the momentum of the nuclear new build programme, with significant supply chain and local employment opportunities; however, there are still major concerns over skill shortages.
- The TUC welcomes the shift to a regionally-based CCS investment strategy, and urges Government to expedite its CCS consultation.
- One of the fastest and most cost-efficient ways to combine economic stimulus with green initiatives is a major programme of home insulation.
- At a time of severe economic downturn, the Government must ensure that Network Rail does not exacerbate unemployment by deferring renewal programmes.
- An *active skills* strategy is urgently needed to accompany the new Industrial Activism. Government therefore needs to set out an active skills strategy for the green economy, covering both green technical skills (including level 3 and above) and influencing/behavioural change skills.
- Few SSCs appear to have really taken this issue to heart.
- For public policy on climate change to be effective, efficient and inclusive, the Just Transition model provides an approach which the UK should now adopt.

1. INVESTMENT IN GREEN JOBS AND LOW CARBON TECHNOLOGY

The TUC argued in its Budget submission 2009ⁱⁱ that the centrepiece of the economic recovery package must be a major programme of public works. Only such a programme can address the triple challenge of declining demand, rising unemployment and looming climate change. The projects implemented as part of this programme must be labour intensive (to ensure they maximise impact on unemployment) and they must focus on turning the UK into one of the most advanced and industrially diverse low carbon economies in the world. The programme must also address the severe shortage of decent public housing in the UK by undertaking an ambitious house building drive.

The economic rationale for supporting such an approach is clear. Investing in infrastructure is likely to be significantly more effective in generating short term growth than alternative approaches to fiscal stimulus: IMF dataⁱⁱⁱ indicates that the economic multiplier effect of spending on infrastructure is three times that of spending on tax cuts.

Investment in low carbon technologies and energy efficiency measures will help to protect the economy against future rises in oil prices. Work by E3G suggests that the net costs of investing in this type of programme become cheaper as oil prices rise; indeed, the net costs would be zero when prices reach \$90–\$120 per barrel. Given that the International Energy Agency estimates average oil prices of \$100 per barrel from 2010, the global economic benefits of investment in energy and climate security are clear.

The first report of the Committee on Climate Change, *Building a low carbon economy*, shows where the industrial priorities for climate policy lie, in a core set of low carbon technologies needed to reach the UK's climate change targets to 2020 and 2050

- Decarbonise the electricity supply sector—renewable energy (wind generation; solar power; tidal range technologies; biomass power); nuclear power; and CCS technology.
- Energy efficiency measures *at home and at work*, both through changes in behaviour and investment in new technologies.
- Transport emissions reduced through new technologies—increasing the carbon efficiency of existing vehicles; electric cars combined with the decarbonisation of electricity generation; hydrogen fuel cells; and biofuels, subject to sustainability criteria.

These core technologies provide the basis of a massive investment and industrial opportunity. Hence, they were the main focus of the TUC's stimulus package^{iv}, where we called on Government to support a £16.8 billion green public works programme including:

- a commitment to green manufacturing and renewable energy;
- a green rail stimulus—to offset the unfathomable decision of Network Rail to cut hundreds of jobs from and schemes from its renewables programme in 2008–09;
- progress on making the UK a leader in low carbon vehicles;
- support for carbon capture and storage, including regional networks;

- action on home insulation and fuel poverty, along with retrofitting houses to adapt to climate change; and
- major house building programme.

Many of these initiatives are job-rich—homes insulation, investment in renewable—either directly or with generous multiplier effects in their supply chains, and bring many reskilling opportunities.

The Government's stimulus package

In the event, the Chancellor announced a £1.3 billion green package on Budget Day, supported by other investments worth up to £7.8 billion. Also, the £1.1 billion *Future Jobs Fund*⁸ aims to create 150,000 jobs for long term unemployed young people, of which around 10,000 will be “green jobs”.

Budget 2009 promised a job-rich £435 million of extra support to deliver energy efficiency measures—for homes, businesses and public buildings:

- £375 million to support energy and resource efficiency in businesses, public buildings households over the next two years; and
- £70 million for decentralised small-scale community low-carbon energy.

To decarbonise our energy supply, in our Budget submission we called for “immediate financial support for large scale renewables—such as the London Array, known to be facing difficulties”. We therefore welcomed improvements to the Renewables Obligation: £525 million of new financial support over the next two years for off-shore wind, increasing subsidy levels for offshore wind.

Other measures include:

- £4 billion of new capital signalled from the European Investment Bank.
- Encouraging Combined Heat and Power technology by exempt those projects from the Climate Change Levy from 2013—bringing forward over £2.5 billion in investment.
- £405 million of new funding for to encourage low carbon energy and advanced green manufacturing in Britain—to drive the application of new technology and invest in small scale projects.

UK wind industry

The UK's wind industry, critical to meeting our 2020 renewable energy target, faces turbulent times. In May 2009:

- the London Array responded to the Government's Budget decision to increase financial support for offshore wind projects by announcing the project would go ahead (gain of some 350 jobs); but
- on the Isle of Wight, Vestas announced the likely closure of its onshore wind turbine manufacturing facility, the only one of its kind in England (loss of 600 jobs), citing uncertainty in government policy.

To meet our renewables targets, we are likely to see a ten-fold increase in jobs in this sector as a whole, from around 16,000 positions now to 133,000 to design, manufacture, install and operate these new technologies^{vi}. In the period to 2020, both on—and offshore wind farms are likely to generate over 80% of the 38.5 GW of installed renewable electricity capacity. Up to 36,000 direct new UK jobs could be created in the wind energy sector^{vii}. The wind industry is one of the highest-growth industries in Europe—an average rate of +12% over the last five years.

What do we need to do to secure a full-scale wind industry in the UK? Elsewhere in Europe, high level Government support has meant that Germany, Spain and Denmark have gained most from that growth, with 70% of the EU's installed capacity. Moreover, due to significant exporting from Germany and Denmark, these three countries account for more than 90% of the EU's wind-sector employees.

<i>EU Member State</i>	<i>Installed wind capacity, end 2007</i>	<i>Wind employment, end 2007</i>
Germany	22.3GW	80,000
Denmark	3.1GW	21,600
Spain	14.7	31,500
UK	2.2	5,000

Bain & Co., 2008.

What lessons can we learn from these EU partners?

Bain's analysis points to four common factors critical to the rapid growth of their wind industries:

- Financial and regulatory support schemes to reduce commercial uncertainty—notably a feed-in tariff.
- rapid building of new infrastructure, especially grid access, to accommodate the wind industry.

- a swift process for gaining planning consent.
- support for wind energy in local communities—with opportunities for participation in ownership of wind farms, or through tax revenues paid to local authorities for tangible benefits to the community

An IPPR study^{viii}, perhaps the most comprehensive review of EU polices that have delivered success to our competitors, highlights a number of critical success factors.

- Financial and tax incentives. The Government's decision to increase the ROC entitlement for offshore wind projects was welcome. But other forms of investment support are clearly needed to develop our wind sector: investment support, including subsidies for capital investment and training; low cost premises; underwriting loans; work with financial institutions (both domestically and through the EIB) to encourage lending to this sector; and R&D subsidies.
- Assisting supply chain development through local sourcing requirements. Spain has been explicit in its determination to grow a local wind industry. The policy has encouraged inward investment. Local content requirements have been applied by Spanish regional governments and essentially require the local manufacture and assembly of turbines before wind farm concessions are granted. The result has been the growth of Spanish companies, like Gamesa, supported by a production tax credit only available for turbines meeting local content requirements^{ix}.
- Skills for a low carbon economy. Government should commission a skills gap analysis for delivering its 2020 targets—an issue we return to later in this paper.

Government needs to decide which of the three manufacturing models the UK is trying to establish:

- full scale turbine manufacture—building on policies developed successfully in Spain and elsewhere;
- component manufacture; or
- a smaller assembly and installation sector?

The EWEA estimates that 59% of workforce directly employed in Europe's wind sector either work for component or turbine manufacturers. UK's nascent wind industry, now tasked with a sevenfold capacity increase by 2020, is effectively a test bed for an active industry/active skills strategy. Clearly, only a full scale turbine industry will meet our ambitious green jobs targets.

Accelerating the UK's feed-in tariff

The government committed, in the Energy Act 2008, to introduce a renewable electricity tariff by April 2010 and a heat tariff by 2011. The approach was pioneered in Germany, which has over 100 times the solar power of the UK and 10 times the wind energy.

Budget 2009 announced £405 million to support the development of a world-leading low-carbon energy and advanced green manufacturing sector in the UK (£250 million through BERR and £155 million through DECC: *Budget 2009, para. 7.28*). And £4 billion was identified to help with project finance under the EU Investment Bank. The TUC, along with a wide range of other bodies, is urging Government to move quickly to introduce the FIT, to help industry take advantage of this new funding. The Renewable Energy Association estimates the FIT will make a major contribution to UK CO₂ cuts, and 100,000 local jobs by 2020.

There are several key issues for the TUC:

- £405 million in Budget 2009 is divided into £250 million for SFI money and £155 million ETF money. How much of this “low carbon” allocation is renewables? What is it actually for? How much is available for micro-renewables?
- Can the Heat Tariff be introduced by April 2010? Renewable heat has been overlooked for far too long, with the UK at the foot of the European league. A lack of clarity is “stopping projects in their tracks”.
- An investment strategy is needed for the £4 billion identified in Budget 2009—the renewables industry is desperate for this funding. When and how will it be released?

Nuclear new build

The nuclear new build programme is likely to involve at least four new power stations in the UK, generating low-carbon electricity by around 2018–20. We need to ensure UK manufacturing and service companies will be suppliers of choice to the major nuclear OEMs, by supplying major key components, smaller sub-components, parts, maintenance, servicing and decommissioning.

It is essential to maintain the momentum of the programme, with nuclear involving among the longest lead-in times of any of the elements of the UK's new, low carbon energy mix. There are significant local employment opportunities in building new stations, and also in the manufacturing supply chain.

However, there are still major concerns over skill shortages at a time of strong demand for appropriately skilled staff. So the Government has to ensure that we have the right education and training provision, including local facilities for existing staff to retrain/reskill.

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- The *DIUS Select Committee Fourth Report* (March 2009), *Engineering: turning ideas into reality*, found very real skills shortages in the nuclear industry:
 - Generic Design Assessment and licensing of the nuclear technologies that creates the most immediate demand.
 - Shortages of HSE inspectors, safety case specialists, and project managers with nuclear experience.
 - Ageing employee base.

The timetable for getting new nuclear power stations up and running in ten years time was felt to be tight but achievable. But the Committee was not convinced that the skills shortage in nuclear engineering could be bridged easily: the Generic Design Assessment process, which kick-starts the whole process, was already running more slowly than expected, and the remaining workforce was ageing. Government should continue its investment in engineering and nuclear engineering skills and produce a clear skills plan by the end of 2009 to ensure its nuclear new build ambitions can be met.

Overall, the lack of a clear and detailed plan for delivering the next generation of nuclear power stations was of concern. There should be a master roadmap for all major engineering projects, including nuclear new build. The Office for Nuclear Development should take ownership of the roadmap for nuclear.

Clean coal with CCS

The Government has proposed up to four CCS cluster projects, to be funded by a levy mechanism to accelerate the delivery of this vital technology. He said, “We will encourage clusters of CCS infrastructure and expertise, renewing the value of our offshore industries as fossil fuel production declines and focusing on key regions such as Yorkshire and the Humber, the Thames Estuary, the Firth of Forth and Tyne/Tees, bringing major employment and regeneration benefits.”

The plan is to kick-start each regional cluster with a clean coal demonstration project. But CCS networks aren’t just for coal-fired power generation, though we recognise its need there, but for gas-fired power stations, as well as the much wider range of heavy CO₂ emitters. Across our energy-intensive industries, this includes CCS technologies needed for aluminium, cement, ceramics, steel, etc.

We have consistently argued that commitments to retrofit CCS to new power plant is an essential condition for consenting new installations, so that we don’t develop unabated coal stations. The National Grid has recently stepped up its support for CCS network, bringing its expertise and capacity to bear on developing CCS deployment at scale. Its preliminary assessment of Miliband’s four CCS clusters suggests they could capture 127 million tonnes of CO₂ annually (15% of UK emissions). How soon depends heavily on the scale of Government ambition.

Work undertaken by the *Yorkshire Forward CCS Partnership* is perhaps at the most advanced stage. This is a consortium led by the RDA, of energy, coal, steel, chemical and other business interests, as well as the TUC and our affiliates in the mining and power sectors in the region.

The YF project illustrates the CO₂ and employment potential of CCS clusters. The Aire Valley region emits 80 million tonnes of CO₂ a year, two-thirds from a cluster of 13 large emitters (coal, steel and chemical plants mainly). Together they provide employment (direct and indirect) for around 10,000 mainly high quality, skilled and semi-skilled workers organised mainly within Unite, Prospect, GMB, Community and Unison. It is the largest CO₂ cluster in Europe. The Yorkshire CCS project aims to build a new high-pressure pipeline round the valley to pick up liquefied CO₂ from these sites and transport it to storage in depleted North Sea gas reservoirs. It could start transporting CO₂ out of the region as early as 2013. By 2030, the system is capable of capturing 60 million tonnes of CO₂ annually for storage under North Sea—10% the current UK total, and a much higher proportion of our reducing emissions by 2030.

The construction phase of the project produces £1.8 billion in value added and

55,000 jobs in the region. The operations phase produces £126 million in value added and supports 2,400 jobs a year. The whole network would cost £2 billion, or as little as £1.70 per tonne CO₂. The YF project will therefore help retain the region’s energy intensive industries, as they have a place to store their CO₂, and indeed, to attract inward A

The TUC welcomes this shift to a regionally-based CCS investment strategy, and urges Government to expedite its CCS consultation.

Home insulation and fuel poverty

One of the fastest and most cost-efficient ways to combine economic stimulus with green initiatives is a major programme of home insulation. As Stern and colleagues argue^x, energy efficiency measures for buildings and industry are among the most effective ways to combine environmental outcomes with a fast economic stimulus. The report rates these measures highly given that they are quick to implement, time-limited and offer long-term social and environmental impacts and immediate job creation opportunities.

Research indicates that every £1 million invested in energy efficiency creates between eight and 14 person years of direct employment^{xi}, and a further nine to 40 person years indirect employment—including the benefit of income released from lower fuel bills.

Estimates in *Building A Low-Carbon Economy* reveal that millions of homes require “weatherisation” treatment through measures such as improved insulation (loft and cavity wall) and improved boiler efficiency. Significant annual savings are achievable. Furthermore, major employment and skills opportunities are at stake in meeting this challenge.

However, the Carbon Emission Reduction Target should be reformed to allow a council-led area based national insulation programme, providing basic insulation to the 10 million homes that do not have these measures installed. The cost of the programme is estimated at £5 billion^{xii}—rolling it out at £500 million a year would create an additional 20,000 jobs.

Furthermore, seven million homes require solid wall insulation. A modest national energy loan fund reaching £1 billion over seven years, providing for interest free loans to householders, repayable when the home is sold, would enable 300,000 householders to install solid wall insulation. This would create another 5,000 jobs a year.

A local government-led, area based approach has many advantages:

- accountability and quality control;
- scale economies driving down costs to provide a much needed boost to semi-skilled employment;
- transparency and readily available evidence of employment creation;
- decent jobs; and
- alleviate fuel poverty and reduce household energy bills.

Kirklees Council’s Warm Zone, a partnership with Eaga, has created 80 full-time jobs and saved approximately £1 million a year on household energy bills. The overall economic benefit to the area is calculated at over £50 million.

Retrofitting housing to adapt to climate change

Opportunities also exist in responding to the need for investment in retrofitting existing housing stock to make it more resilient to the impacts of climate change already in the system. Whilst this makes efforts to reduce future emissions all the more urgent, at the same time it means that we must adapt to hotter, drier summers; milder, wetter winters; and more extreme events such as storms and floods in the UK.

Insulation programmes as set out above have a double benefit, helping to keep homes warm in the winter and reduce energy use on heating, but also helping to regulate temperatures throughout the year, keeping homes cool in the summer months and reducing the need for energy intensive and expensive air conditioning.

But adaptation brings other challenges, particularly dealing with the risks of subsidence or of flooding, and much of the UK housing stock is not well-adapted, as the devastating consequences of the 2007 floods demonstrated.

The Government has announced a new £5 million grant scheme to encourage householders to install flood resistance and resilience measures, in response to the Pitt Review of the 2007 floods. A first round of bids from local authorities is being sought in 2009. Given the urgency of the problem and the short timescales involved, this is an opportunity to provide jobs to workers in construction and maintenance, and for these workers to enhance their skills and future employment prospects by working on adaptation projects which will be useful in the future.

Green rail stimulus package

The Government has committed to a long-term goal of doubling the level of demand rail can accommodate^{xiii}, acknowledging that rail’s potential to provide a safer and lower-CO₂ alternative to car and lorry is much greater than seemed possible even ten years ago.

Yet contrary to this policy, the TUC pointed out in its Budget submission that up to 700 of Network Rail’s track and signal maintenance jobs are at risk, with NR implementing “huge reductions” in track renewals. NR acknowledges that these cuts will have a “major impact” on supply chain companies, from steel to quarrying. The underlying reason is NR’s need to address the 13% “efficiency savings” over the period 2009–14 called for by Office of Rail Regulation (ORR) in 2008. But the immediate reason lies in NR’s business plan and management response, which is frontloading staff cuts—at a time of recession. At a time of severe economic downturn, the Government must ensure that Network Rail does not defer renewal programmes, but rather, increases them. Government should find replacement funding for the ORR settlement, to help secure direct and supply chain employment in the rail sector.

2. GREEN SKILLS

An *active skills* strategy is urgently needed to accompany the new Industrial Activism. The current level of skills training capacity is inadequate to meet the needs of a low carbon, resource-efficient economy. Furthermore, relying on the market to identify skills gaps is causing delays in moving towards a green economy. Low carbon skills need to be integrated into the whole skills delivery system. Cross-government co-ordination, led at Ministerial level, is crucial to deliver skills for the low carbon economy.

Much more should be done to promote retraining and reskilling at work. In a new TUC greenworkplaces survey (which drew 1,300 replies from workplace reps), more than half of respondents (57%) commented that their employer had not introduced opportunities to reskilling and upskilling in relation to climate change, while 7% reporting that opportunities had become available.

We acknowledge that Government is taking action to address this issue:

- DIUS has responded constructively, if more slowly than the TUC would like, to the Defra report on *Skills for a Low Carbon, Resource-efficient Economy*.
- DIUS has established an interdepartmental, High Level Skills Group (TUC represented).
- The DIUS Select Committee Fourth Report (March 2009)—Engineering: turning ideas into reality—found very real skills shortages across a range of engineering sectors.
- *New Industry, New Jobs* flags up two forthcoming policy reviews:
 - a new Higher Education Framework on how higher education in England will take a more active approach to building British competitive strengths through higher skills levels, research and knowledge transfer; and
 - an “active skills” paper this autumn, detailing how the skills system as a whole will support these developing policies.

High Level Skills Group is currently focussed on identifying and replicating what leading employers (Toyota, Arriva, Babcock’s) are doing to develop green skills.

For the TUC, there are both specific green skills—carbon measurement and accounting; understanding and applying low carbon technology; robotting machinery—and influencing and persuasion skills (as with the TUC environmental reps).

Leading employers have said that they had grown their own skills internally (an approach adopted by the TUC with its green workplace projects). They had not turned to the SSCs or Universities. But a number are now at the stage where, having done this, they need to scale up dramatically. Practical examples include Arriva training bus drivers in eco-driving; plumbers trained to work at heights on scaffolding to install solar PV. These changes also involve softer, persuasion skills.

A conclusion for TUC, therefore, is that culture and behavioural change skills are just as important as technical skills. The Stern Review identified three key policies to tackle climate change:

- carbon pricing;
- investment in new technology; and
- “The removal of barriers to behavioural change is the third essential element, one that is particularly important in encouraging the take-up of opportunities for energy efficiency”, (Stern Review, page 20).

Support for technical skills development is essential—especially at level 3 and above, which includes engineering and science skills. Despite the High Level Group’s optimism, employers do not “grow their own” engineers and scientists. It is important that there is sufficient, high quality HE provision to ensure supply of new entrants. Equally it is important (as the DIUS Committee report commented) that there are attractive and competitively remunerated career prospects. This applies both to the industry and within Government.

Meanwhile, the DIUS Select Committee report commented that the recent economic crisis has presented the Government with a “once-in-a-generation opportunity to restructure the economy by building on the existing substantial strengths of UK engineering.” Key points from its report include:

- Diversity is a major problem in engineering. Only 2% of engineering apprentices are female and only 4% are black or an ethnic minority (BME). The Committee supported the Government’s efforts to promote diversity in engineering—STEMNET, the Science and Engineering Ambassadors programme, WISE, the Computer Club for Girls, and the work of the Royal Academy of Engineering and the Engineering Development Trust.
- Lack of evidence on the factors that affect the career choices of women and other under-represented groups. DIUS to commission research to examine these factors; evidence should then be used as a platform from which to develop and target widening participation initiatives.
- Need for better trans-departmental management of engineering policy. Government to formulate roadmaps for each major engineering programme, including skills provision, with co-ordination between each of them.
- Government to be more strategic in its support for emerging industries and policy areas.
- Government to task senior officials to oversee engineering roadmaps and strategic plans.
- Appoint a Government Chief Scientific and Engineering Adviser and a Government Chief Engineer.

For the TUC, the Government therefore needs to set out an active skills strategy for the green economy, covering both green technical skills (including level 3 and above) and influencing/behavioural change skills. Few SSCs appear to have really taken this issue to heart. And there have been tensions between energy companies and Ofgem in ensuring sufficient funding for skills training and apprenticeships. If this is a reflection of narrowness of Ofgem's remit, or in the way the regulators has taken to interpreting its remit, then action needs to be taken to address this issue.

3. A JUST TRANSITION

Unions recognise that the transition to a low carbon economy is necessary to tackle climate change. However, unions also know a grand social and economic transformation will only be fair under certain conditions. The ITUC has proposed a "just transition" framework to feature in the new global change agreement in Copenhagen, which we support.

Although the transformation is expected to bring new investment, jobs and skills, there will also be "job crush" in some sectors. The idea that the market alone will ensure social justice in the transition to a low carbon economy is a vain hope.

Therefore, Just Transition principles include:

- institutionalized formal consultation arrangements with relevant stakeholders including trade unions, business and communities, at regional, national and sectoral levels;
- promotion of green employment opportunities and investment in low carbon technologies, and in the educational qualifications related to them;
- education, training, retraining, and life-long learning programmes for a low carbon, resource efficient economy; and
- economic and employment diversification policies.

If the government wants public policy on climate change to be effective, efficient and inclusive, then Just Transition provides a model approach which the UK should now adopt.

1 June 2009

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Witnesses: Ms Sue Ferns, Member of the TUC General Council, and Mr Philip Pearson, Senior Policy Officer, Trades Union Congress (TUC), gave evidence.

Q97 Chairman: Good morning and welcome, and for the avoidance of any doubt we know that you are from the TUC and not the previous witnesses. Can I start with asking you, in America there is some co-operation between trade unions and environmental groups campaigning for policies to ensure that green jobs benefit low income groups and deprived communities. Do you see any progress being made here by the Government on that agenda?

Ms Ferns: There is certainly co-operation between the trade union movement, the TUC, and some green groups on this agenda. For example, we are working with the Green Alliance, we have been working with some of the campaigning groups, Friends of the Earth and so on, so there is some progress really from our side of the table. What we are very keen to see in terms of a transition strategy is that all the social partners are involved in that kind of dialogue, and certainly there is a call in the European Trades Union Congress for that kind of social partner dialogue to take place, and we think that is absolutely key.

Q98 Chairman: Is the Government engaged in encouraging this as well?

Ms Ferns: Yes, absolutely. To be fair, we do have engagement bilaterally with the Government through the Trade Union Sustainable Development Advisory Committee, so those dialogues are happening in the UK, they are just not as joined-up as they might be at the moment.

Q99 Chairman: Do you think this whole process could be used to, I suppose, raise awareness of the environmental challenges and perhaps generate more support for greener policies. Is the discussion about green jobs a way of building public support for a greener agenda generally?

Ms Ferns: It can be, yes. Certainly in terms of the trade union movement's dialogue with green groups at the moment, historically there has been that suspicion that unions are only interested in jobs. We have moved on from that and we have genuinely shown that we are interested in green jobs and are having a proper dialogue with the green movement about that, about where those jobs might be created, what support might be needed in areas where jobs potentially are going to be lost, so I do think we have moved on on that. Also, it is not just at national level, at the level of the workplace there are a lot of our representatives who are acting as environmental representatives in the workplace, raising issues about jobs and skills, so we are building the dialogue from the bottom up as well as from the top down.

Q100 Mark Lazarowicz: There is a wide range of estimates of the number of green jobs that could be created in the UK. Do you have any views as to what numbers we are talking about potentially?

Mr Pearson: Obviously you are aware of the global estimates of 400,000 plus jobs that could be created; the difficulty is knowing sector by sector really what is going on in the economy now. There is a lack of what in European terms is called an observatory, an

understanding of where the growth is happening. We know we are losing jobs when companies such as Vestas on the Isle of Wight threaten closure for particular reasons which need to be addressed; and we know too that the London Array presents job opportunities. Across the energy sector, whether it is wind or tidal or clean coal or new nuclear; clearly there are opportunities that are going to emerge, in the industry generally and in the supply chain of those various developments and in others, such as cars. We know that there are opportunities sector by sector and there are some commonalities in policy, but what we do not know is what is going on. My colleague's comment about a social partnership body, that should be the body to which information is supplied. It should be in the public domain so that we understand where growth and decline are taking place. There will be job losses in sectors under carbon pressure, but there should equally be growth in sectors where carbon pressure produces opportunity. It is difficult until we get into the growth numbers to be able to say whether this 400,000 is fantasy or is going to be the reality we face.

Q101 Mark Lazarowicz: That is what I am interested in finding out. We have this global figure; do you have any views as to how accurate that is and do you have any information which allows you to produce your own figures, either globally or for particular sectors? Is there any likelihood of that at all?

Mr Pearson: There were two sectors where we had worries. On the wind estimates, from the conversation we had with the British Wind Energy Association, we think they are over-optimistic, we did not recognise the numbers. On carbon capture and storage nobody knew where the Government's figures came from. We understand that the consultants have drilled down and down and down to the lowest level of data and have built up a base and said "No, it is really that big", so maybe they know more than we do, but there really have been doubts over those two areas. The proof of the pudding should be in the eating so to speak and so when these jobs emerge and are delivered then we will really know where the growth is coming from, but at the moment we do not know because of this lack of an observatory or a monitoring function shared between the social partners. Our desire is to see this information out there and tracked over the years.

Q102 Mark Lazarowicz: Are you aware of any work that has been done to assess what type of jobs might actually be lost in the transition to a low carbon economy? We are talking about new green jobs but what about existing jobs that will either have to change or just disappear? Have you any news on that or any research yourself?

Ms Ferns: We know there is evidence about job losses in heavy manufacturing and in industries like steel. At the moment what is quite difficult to disentangle is how much of that is due to the economic downturn generally and how much of it is due to green pressures. Our evidence from the unions

involved is that certainly there is some element of environmental pressure there and concerns, for example, in relation to emissions trading schemes about carbon leakage and so on which is causing jobs to be lost.

Q103 Mark Lazarowicz: Have you got any specific figures you could give to us to help inform us in our discussions about the situation?

Mr Pearson: No. We cite in our evidence the European TUC study across 13 nations, undertaken about three years ago, which said in conclusion that jobs gained and displaced will vary between sector over time and over place. That is the big picture but clearly there are jobs under pressure because of the recession and there will be some climate pressure, and we just need to track it. There is no study done that is reliable, we just know that there are sectors that are vulnerable and there are sectors with greater opportunities. We just need to get into a sector perspective quite quickly.

Q104 Joan Walley: Can I just pick up on what you just said about the observatory and the tracking of jobs? There is that kind of information available in terms of jobs already, is there not? You just mentioned the observatory and the monitoring of jobs that are there.

Mr Pearson: That is the recommendation from an ETUC study for the European economy and we would say there should be one in every country; there is not one in Britain as far as I know.

Q105 Joan Walley: Okay, I just was not clear about that. In respect of job losses that there might be which you think might be attributable to the downturn anyway, setting that aside how do you think the Government should manage the redeployment and retraining of workers from traditional industries, because if that is going to be necessary how should Government be doing it?

Ms Ferns: That depends a bit on what the jobs are that are being lost because I do not think there is a single one size fits all solution for all jobs, but the kind of things that we have been talking about is support for training and development, maybe support for relocation packages. In some cases these will be technical-based or engineering-based skills actually that do not require a huge adjustment from the workers to move from one sector to another, whereas in others you will be training people from scratch. The key thing here is to make sure that people are properly supported to do that in terms of training and development, maybe support for communities and transition packages to enable people to move into those new areas of employment.

Q106 Joan Walley: In your evidence you make reference to a TUC green workplace survey. Have you done a lot of surveys of this kind and have you done any surveys that would just focus on a traditional manufacturing area where you are trying to get more information and trying to track more what is happening about this whole issue?

Ms Ferns: The latest TUC green workplaces survey was a big cross-union survey done by the Labour Research Department and there were 1300 responses to that, so that gives quite a good snapshot of what is happening at the local level. What we have not done is aggregated that into a sector by sector study at the moment.

Q107 Joan Walley: Can I just ask whether or not you feel that the incentives to encourage industry to re-skill the workforce are having their desired effect, or could more be done to incentivise transitional arrangements for workers to move towards greener skills?

Ms Ferns: More could be done. In the earlier evidence session what was alluded to in terms of what is currently available for new skills—much of it funded by the Learning and Skills Council—that is focused on a particular set of targets which are not absolutely congruent with the objectives you need to meet to get more green jobs and green skills. One of the things we hear consistently is that although level two skills are important, actually what is key to a lot of this agenda is level three skills and skills above level three, and they are not being incentivised at the moment. There are also issues that do arise about whether you have to incentivise workers to achieve a full qualification or actually take into account what the skill base they already have is in terms of topping up their skills. At the moment there is a lot of emphasis on formal qualifications—I know that has become a bit more flexible—but probably you do need a more flexible approach, taking account of the worker and not just the target that has to be met.

Q108 Joan Walley: I would be interested in knowing what support the TUC can give to individual unions, for example I am thinking about the trade union UCATT. In my own constituency we have a college where we have a construction skills centre, the Seven Centre, and it is obvious to me that more needs to be done to work with the trade unions, on top of what is already being done, to bring in and introduce the training on the green skills levels. Is that something that you have got particular skills at within the TUC to assist that kind of transitional arrangement?

Ms Ferns: There are potential sources of those skills. There is a well-established army of union learning reps now, over 22,000 of them, who have been helping workers into new skills and new jobs now for a considerable period of time. They can do that as regards green skills just like they can for any other skill. We also have a growing group of environmental reps with a particular interest and a particular knowledge around the green agenda.

Q109 Joan Walley: Do you train those centrally?

Ms Ferns: They are trained centrally. The problem that they face at the moment is that they do not have any time at work officially to do their duties, so they are a bit held back by that barrier, but the TUC does provide training and individual unions provide

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training for that group of people. What a lot of unions are also doing now is working very closely with the new national skills academies and getting information via union learning reps about opportunities available there too.

Q110 Joan Walley: Can I think just pick up on that point because in recent discussions I had with the Chartered Institute of Environmental Health they were really alluding to the fact that if there was provision within the legislation for trade union learning reps to have the same approach towards the green skills agenda as they have perhaps towards health and safety, that would be a way of encouraging and promoting greater awareness about the need for change. Is that something that you are looking at?

Mr Pearson: We must not confuse union learning reps, who have clear provisions in statute, a body of 22,000 people who are developing and promoting skills at work: and then the role of green environmental reps: and then the role of health and safety at work reps. There are three roles. Of the last two you were talking about, health and safety at work, shop steward safety reps are recognised under the Health and Safety at Work Act 1974, and they have various rights and responsibilities working closely with employers—that is clear. What we have been arguing for concerns this growing interest among shop steward safety reps and some union learning reps to pick up the green agenda at work and promote the provision of skills, whether full qualification or that shorter list of qualifications needed to green their job. What we have been arguing for is that environmental reps need to be put on a similar footing.

Q111 Joan Walley: That was the point I was making.

Mr Pearson: I am sorry if I have not been very clear about that, but a similar footing is what we need so that they would have a right to appropriate time off, more training, working with employers to have a joint group. We identified 200 joint environmental committees in the workplace that have been set up.

Q112 Joan Walley: You would support the statutory provision of reps on that basis.

Mr Pearson: In brief, yes.

Ms Ferns: We would.

Q113 Mr Caton: Returning to the need for a sector perspective that you identified earlier, Mr Pearson, in what sectors does the TUC expect the most jobs to be created in a green economy?

Mr Pearson: The energy sector and cars. The Committee on Climate Change set it out: it is decarbonising energy, it is transport and it is efficiency at home and at work. That is the agenda for growth in a word, so you tie in the Government's target of a 34 per cent cut by 2020,⁵ the Committee on Climate Change has delivered that in terms of

sectors. We had the first of the five-year carbon budgets this April; that is the territory—energy, cars and energy efficiency.

Q114 Mr Caton: What more can the Government do to encourage job creation in those sectors?

Mr Pearson: Sue and I would both like to answer that but can I just mention carbon price first? Without that driver we are going to progress at insufficient speed. The price of carbon now is €10 per ton on the market; it does not work. I know frighteningly high prices of carbon are being talked about but the idea of a floor price needs to be thought about really seriously, and commentators such as Dieter Helm have argued for that. If there is a reserve floor price in the market—I just do not see why we cannot use such a mechanism, because there needs to be a driver from the bottom. There may need to be some kind of escape valve at the top, which has been part of the American discourse. There is a fear in the American industries and the American unions about the carbon price getting too high, but actually we are in completely the opposite ball park: it is too low, too soft, it is not driving change. That would be my first point.

Ms Ferns: I absolutely agree with that. Just to add to that, I think having an appropriate regulatory framework more broadly is important too, certainly in the energy sector where the union I work for has thousands of members. We know that Ofgem's role is to deliver cost-efficient low price solutions for the consumer and we have evidence that that is holding back investment in skills development. That is skills development that needs to take place now because of the state of the energy infrastructure, but the regulatory framework just is not appropriate for that, so we do need to change that as well.

Q115 Mr Caton: Should conditions be made most favourable for the greenest industries or those that create the most jobs, or is that not necessarily a trade-off?

Mr Pearson: I would have to think about that a little bit. My instinct is that the fundamental issues are about the price of carbon. I do not see how you can really avoid that being a uniform driver; it is essential. You get into issues such as the free allocation of allowances within the EU Emissions Trading Scheme, which is a balancing act, and that may be partly addressing what you are thinking so that some of the pressures are taken off some sectors that are exposed to international competition. In that sense, yes, we would support a more flexible approach but the need for a floor price would be fundamental.

Ms Ferns: Can I just add to that and say I do not think there is a single industry or even a few industries that are going to solve this. What we need to do is we need to green across industry and across the economy. I agree with what Philip said but you need to think about the economy as a whole and embed this agenda into actions that all industry

⁵ *Note by Witness:* The Government's target of a 34 per cent cut is by the year 2022, not 2020 as stated during the evidence session.

takes—there is not a single approach that is going to solve this or a single industry that is going to solve it.

Q116 Mr Caton: The whole history of economic development in Britain has seen huge regional variations. In this new greener economy that you are talking about, Ms Ferns, are there going to be those same regional variations and can you at this stage foresee what is likely to happen?

Ms Ferns: Inevitably, there will be regional variations because we are not starting from a clean sheet, are we, we are starting from a regional picture that varies now with different skills profiles, different industrial profiles and so the transition we make is from where we are now, which may or may not be where we want to be, to the future, so inevitably there will be regional variations. We know, for example, that a lot of work has gone on in Yorkshire and Humberside about a regional approach to carbon capture and storage; we support that in the TUC, we think that is an important regional contribution, and clearly in this regional location there will be other types of energy industry. There is an energy partnership in the eastern region and I do not think there is anything wrong with building on what is already there.

Mr Pearson: I would reinforce that. We understand from the low carbon industrial strategy in the making that it will have a strong regional component to it reflecting, for example, the energy opportunities in different regions. Sue has begun to outline two or three regions where there are partnerships or strengths; every region has got unique opportunities and every region has got huge unemployment problems, so they need to be matched.

Q117 Martin Horwood: Can I just repeat the question that I asked the previous witnesses because they also pointed to the carbon price as a really crucial driver in all this. Short of trying to negotiate with all EU governments to redesign the Emissions Trading Scheme and reduce the amount of licences, in the short and medium term, what kind of intervention would you use to support the carbon price and stop it dropping too low. How do we actually do that?

Mr Pearson: It is a matter of political will, is it not? The mechanism needs to be changed to introduce by political agreement the idea of a floor price, which would effectively be a carbon tax, and the level of that tax should reflect, ideally, a kind of a judgment on the driving price needed to deliver this pace of change you are looking for. That pace of change has been set by the Committee on Climate Change, they have told us what we have to do by 2022. We have to cut down to 520 million tons of CO₂ and keep going, and we need a carbon price that gets us there. We do not have one at the moment. I am sorry if this is a general purpose answer but if I was asked I think the key thing is to introduce the concept of a floor price or tax, but it has to be a price which has some scientific and economic justifications, some industrial value to it—not just a random choice but a price which would be acknowledged as being the right price for carbon, to replace one kind of energy

with another, to stimulate investment in one kind of car as opposed to another, those kinds of issues, internalising the price of carbon.

Q118 Mark Lazarowicz: How would you envisage such a floor price being maintained?

Mr Pearson: Once set it is a question of judgment. The key evaluation that you put against the price that you determine is, is it making a difference?

Q119 Mark Lazarowicz: How would you make sure that that was a floor price?

Mr Pearson: The Treasury set the social cost of carbon at £70 a ton a few years ago.

Q120 Mark Lazarowicz: What I am getting at is how would you actually bring that about. You cannot simply say that is the price, you have to get that price to actually be a reality. How would you do it?

Mr Pearson: You would need to consult, would you not, between industry, social partners, the experts. Charge the Committee on Climate Change to do it; that is what they are there for.

Q121 Martin Horwood: That is not what they are there for, they are there to advise on policy but we are asking you what the policy suggestion would be. You seemed to suggest a minute ago that you were talking about a carbon tax that would kick in if it reached a certain level.

Mr Pearson: That is another word for a floor price, carbon tax. It is those kinds of changes to the system so that it has the ability to drive change.

Q122 Mark Lazarowicz: What I was getting at, and Mr Horwood as well, is that you get a carbon price in a number of ways, perhaps by a carbon tax, perhaps by buying back allowances. I just wondered what your view was, how you would actually bring about that floor, how you would actually make sure that was the price that the market operated at.

Mr Pearson: Of the options you have already touched on there are two that are most likely. Starving the supply of allowances clearly would be one way, shortening the supply, so the Government would not release its allowances to the market which should have an upward effect on price.

Q123 Dr Turner: You are looking to wind energy and turbine production as promising areas for producing job growth. Why just wind when the plum opportunities in wind energy are long gone? The Germans have got that. We will get some jobs out of that but turbine development and manufacturer is a horse that bolted a long time ago because we failed to back it in this country. We have the world's best energy sources in terms of wave and tidal stream of any country in the world. We also have a nascent industry waiting to exploit that and teetering on the edge of extinction. What potential role do you see in the TUC for that in the future, because if we exploit it it could be worth many gigawatts and outplay wind power as far as the UK is concerned in terms

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of job creation and economic benefit. I do not detect any sympathetic noises even from the TUC towards developing that sector. Why not?

Mr Pearson: Do you mean the tidal sector?

Q124 Dr Turner: Yes.

Mr Pearson: In 2005 we published a report called *Greening the Workplace*⁶ where we argued for the government to give far greater support to the wave and tidal power sector. We invited one or two of the major investors to our conference which we held in 2005 with the CBI prior to the Energy White Paper. We have a fairly strong track record in backing that industry. You may not be aware of that, but we do. It is an industry with huge opportunities but we are where we are. The Renewables Advisory Board, which I attend as an observer, clearly is determined to help the government achieve its 2020 targets. They do see all the renewables contributing to that. I would agree with you. In this country, I think we have grossly underestimated the potential of wave and tidal power to generate industrial opportunity. Therefore, Portugal is making stuff which is invented in Britain. The danger is we will lose those opportunities. I could not agree more.

Q125 Dr Turner: It would be nice if the TUC made some loud noises about that or precisely what you say is going to happen and this would be an absolute tragedy. Also, it would undermine our chances of achieving our renewable energy targets by the bye. It would be nice if the TUC made a lot of noise right now to help that. It would be very apposite and I hope you will. You are also looking to nuclear and clean coal technology as job sources. They are both sectors with drawbacks. They are effectively interim technologies. The next generation of nuclear reactors that are built will probably be the last nuclear fusion reactors ever built because if we continue with nuclear power fusion, it will be ready by then and clearly no one would build a fission reactor if they could build a fusion reactor. CCS, essential though it is, is essentially a sticking plaster because so many economies are dependent on using coal but it is short term. Should we not be looking for and promoting longer term opportunities? I am not suggesting that we should dismiss stuff in the interim or not make the most of it, but should we not be focusing on the long term?

Ms Ferns: In response to that, in the short term we have to focus on security of supply as well as meeting climate change targets. Whilst renewables have much more potential in the longer term, we do need those technologies. We do need nuclear to ensure security of supply. Therefore, it is important to us that we get the new generation of nuclear power stations. In terms of coal, it is really important that we look on a global scale because, whatever happens in the UK, there are coal fired stations being built throughout the world in China, India and elsewhere. We can make a huge contribution in terms of CCS

technology in the UK quite apart from trying to ensure that it is applied worldwide. That will make a huge difference to global emissions. It is a very important industry for that reason.

Q126 Dr Turner: Do you think the government is doing enough for us to be effective in the race to provide CCS technology throughout the world? Do you think that what we are doing is going to be sufficient to enable us to retrofit all of China's several thousand gigawatts' worth of coal fired power stations for instance?

Ms Ferns: I do not think anybody knows the answer to that today. We were encouraged by Ed Miliband's statement which expanded the opportunity compared to that which previously existed in terms of four demonstration plans. Of course we would like to see more and of course the technology does need to be proven on a fully commercial scale. In contrast to your example about the wind industry, we are at a very early stage when there is everything to play for. We are very keen that government, industry and trade unions play their part in making sure that we maximise and test that as far as we can so that those opportunities do exist and we can realise them.

Q127 Chairman: On the first part of that question from Dr Turner, do you still see however opportunities in wind energy and turbine production, notwithstanding that the Germans clearly have a huge lead here? Is there still the potential in this country to get significant job creations in those sectors?

Mr Pearson: The short answer is, it is huge and the faster we move the greater the opportunities will be. What would be nice would be to have a clear idea of the kind of wind industry we are after in the UK: big, medium sized or small? Make it all? Do it all? Half way there? We import some, or are we just on the far end of the process and we assemble in the water? Clearly, the more we do the more jobs there are and the greater the industrial base there will be for the UK. The IPPR has produced a really excellent study on those very scenarios. Let us go for the high one. That is what the Renewables Advisory Board would ideally like to see happen. There are still blockages in the system. I do not know whether you are taking advice from them but it is such a crucial sector. They all are really. The whole balanced energy policy that we adopt with nuclear, clean coal, a suite of renewables, clean gas, is important. Renewables seem to draw the most interest and attention and for that generation of younger people coming through into the labour market perhaps it does have some greater appeal. We should be doing as much as we can to get a sense of the industry we want and then go for it. After all, we know what other countries have done, particularly Spain with its very stringent procurement policy. You set up a wind farm in this region and there are regional procurement requirements that the stuff is made in Spain. Portugal is going down the same route. We had a meeting with the Secretary of State for Energy and Climate Change just a couple of weeks back where

⁶ Note: Greening in the Workplace report? Trade Union Sustainable Development Advisory Committee, Greening the Workplace, June 2005. <http://www.tuc.org.uk/economy/tuc-9996-f0.pdf>

we were talking about the Spanish example. The Minister clearly is attracted to that. He was a little slow on the official side about what Spain are doing which is rather surprising because it is written and talked about. It clearly could provide the kind of policy framework to get us there on the high option, which is what we would really want to see. There are tens of thousands of jobs with the high option. That is the key issue.

Q128 Martin Horwood: I am warming more to you on clean coal and renewables than I am on nuclear. That is more likely to generate French jobs than British ones. You say that large scale public works should make a major part of any big push for green jobs as well. Given that there are so many other tools on offer to stimulate private sector investment through targets, regulation and even investing directly in the private sector, what is the particular value of public works?

Mr Pearson: It depends where you want to start. Renewing the grid and creating the CCS grid. There clearly is a role for a public sector framework to achieve those new structures. Investing in the first, if not more than the first, CCS project is a public sector investment challenge.

Q129 Martin Horwood: The National Grid is a private company and it could be invested in.

Mr Pearson: It is a private company but you do wonder why, if the opportunities are that big, there is not yet a move by the National Grid to really accelerate its activity in this area and demonstrate not only to UK industry but to Europe that it can be done. If a hold back is again because of finance problems, is there a role for the government and the European Investment Bank? I do not know, but there needs to be some support for the private sector to get some of these major new investments going.

Q130 Martin Horwood: Is there any evidence to suggest that public sector spending is more effective than investment in the private sector?

Mr Pearson: I do not think we would be arguing the case of more or less effectiveness. It is just getting the shovel ready, getting stuff done, getting pipelines down, getting the first turbines built. That kind of example seems to require forms of public investment so if that is the case let us go for it. That would be our view. It is not trying to separate this from an ideological position. It is a utilitarian one. If the private sector has a role to play, let it play it in bringing forward these technologies.

Q131 Martin Horwood: I should probably refer Members to the register of researchers' interests as there is a reference to the National Grid.

Mr Pearson: I do not understand that.

Martin Horwood: You do not need to.

Q132 Mr Chaytor: Do you think there is a problem for the TUC and for its constituent trade unions in really advocating the transition to a low carbon economy, because the historic role of trade unions has been to protect and defend. If I can give an

example, our previous witnesses made a comment about the car industry not being dependent on the manufacturing of low carbon vehicles. How would you view this? Would you think it would be a good initiative for government to have made its financial support for the car industry solely dependent on the production of new models? What would have been the impact on Ellesmere Port, Luton and other plants if that were the case? Do you see the point I am trying to get at? I just feel that maybe as an institution you have a difficulty here because your primary role is to defend the status quo, not to argue for significant change.

Ms Ferns: I do not think our primary role is to defend the status quo. We clearly do have a role in defending members' jobs and at the moment the issue is that members are losing jobs with nothing else to go to. Our view in relation to the low carbon economy is that we just have a transition programme in place, we will be very forward looking. What unions want to see is good, high quality employment opportunities. At the current time people are losing their jobs in the car industry and they have nothing to go to. If there was a better framework and a transition strategy that allowed those people to reskill and, if appropriate, to move into new industries or new sectors, that is what we have been arguing for.

Q133 Mr Chaytor: One of the easiest ways to generate new jobs with fairly modest skill levels is through a national domestic insulation programme. A number of local authorities have been quite proactive on this. It currently seems to be the leader in the field. Why is it so difficult? Why is this not just part of the normal functions of local authorities supporting schools, delivering social services, cleaning up the streets and doing the refuse? What is so difficult about getting a national programme? Why are only so few local authorities really motoring ahead on this, do you think?

Mr Pearson: They are given a variety of sustainable development targets to adopt. Is there a clear enough central direction here? Should there be a much clearer target and expectation for home insulation work done? We all recognise the scale of the problem. It is huge. The role of local authorities would be to provide quality assurance as to the work done, to provide a better indicator of the number of jobs being created, a more reliable channel. That is not to criticise EAGA, the agency that does a lot of the Warm Front work. It is doing splendid work but we have argued in our budget submission for there to be a much more proactive role for local government in this area. Local government is interested in taking such a role. The LGA's pre-budget submission this year identified 70,000 jobs in a substantial, long term, ten year, £5 billion programme. That is where real jobs at a local level will be generated right across the country. The advantage of local government is it understands the problems in its area, on the estates, in the Victorian houses and the Victorian terraces. Home insulation challenges are different, dwelling by dwelling and type of dwelling by type of dwelling. Local

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authorities are really well placed to ensure that the appropriate standards and approaches are taken to gain householder confidence. After all, if you get people going into your home and changing it, you need to be confident that competent people are going in with the technology skills but also the consumer relation skills that are involved in persuading and discussing how this technology works once you have it in. There are a lot of skills in there which at the moment are not being brought together in a national approach to this problem.

Q134 Mr Chaytor: There could be a case for local authorities with stronger targets from the centre?

Mr Pearson: We have heard that talked about a lot, yes.

Q135 Joan Walley: It is interesting to note that in my own constituency Eon claim that they insulated over 3,000 homes as a result of a Warm Zone scheme which we spent some time trying to get set up. What you are saying is that there is a huge amount of more potential from operations of this kind to create far more jobs. That brings me on to my question as to how the government has set up the new skills sector for power workers. How is that going to make a difference in terms of getting the skills that are needed to carry out work of this kind?

Ms Ferns: Are you talking about the National Skills Academy?

Q136 Joan Walley: Yes. I am talking about the National Skills Academy for Power.

Ms Ferns: It is not yet in being. There are still funding issues that are being dealt with at the moment. There is a business plan but it has not been signed off yet, so it does not exist at the moment.

Q137 Joan Walley: Whose responsibility is it to sign it off?

Ms Ferns: I do not know whether it is the UK Commission for Employment and Skills. I am not quite sure who has formal signing off responsibilities for the skills academies, but what I do know is that there are still discussions going on in energy and utility skills, which is the sponsoring Sector Skills Council. A lot of work has been done and it is pretty close to being there but there are still some issues to be resolved, so at the moment it just does not exist.

Q138 Joan Walley: Do you know what those further discussions are that still have to be resolved?

Ms Ferns: They are around funding and resourcing, as I understand it.

Q139 Joan Walley: Assuming that it does get signed off and set up, what will the actions that it is intending to take do to fill the skills gap?

Ms Ferns: Because all the major employers in the sector are signed up in principle to the Skills Academy and to working together to resolve skills issues, that is where it will make the key difference. The history in this sector has been very much in recent years of employers each doing their own thing and poaching from one to another in terms of the

skilled staff that they need. There is now a recognition that that is not going to resolve the skills issues. A preparedness to work together and in a more coordinated approach will be the real value of the Skills Academy in this sector.

Q140 Joan Walley: Can I turn to industry and what industry is doing? It does not seem to me that industry has been very good at articulating the skills that it needs to make this transition to a low carbon economy. I think that brings into question a demand led approach to skills that has dominated the policy. Given the importance of this, what do you think the further action could be to bring in this low carbon economy because we do have these skills gaps that do not seem to be targeted by government or industry? What more could we do to close this gap?

Ms Ferns: I absolutely agree with that. The demand led approach has not worked well in terms of low carbon skills. The report that Defra commissioned about 18 months ago on this has some very useful recommendations. It is really highlighting the need for a coordinating body or strategic body to do the analysis, to get the labour market information and then to really drive forward and make clear what those skills needs are and to assign responsibility for ensuring that people are skilled up to meet those future demands.

Q141 Joan Walley: Everybody is arguing for a joined up, integrated approach and bringing it all together but with each and every one of these initiatives there is no leadership role defined. 18 months on or however long it has taken, how has this been done? Who is championing this? I referred to the National Skills Academy. It is about will in the future. It is not there yet. How are we making sure that this does get done? Surely that is government's role? What more pressure could be put on government to get that done?

Ms Ferns: I could not agree more with you. We do think it is government's role to do it. I know the previous witnesses talked about the role for the UK Commission on Employment and Skills which could be the right body to do it, but the key thing is, it needs some central point in government to take responsibility for this. The problem is this is not simply an issue for the department that deals with skills; this is an issue across government because it applies to all industries and to all sectors. We hope that when we see the low carbon industrial strategy it will have something very positive to say about this because at the moment we simply do not have those mechanisms and we do need to have them.

Q142 Joan Walley: Which statement is that?

Ms Ferns: When we see the new low carbon industrial strategy which I understand is due out either in the summer, in the autumn or before the end of the year. The sooner the better as far as we are concerned. We do need to see some clear leadership in that and maybe now we have a department that is responsible for business, innovation and skills that is

the right combination to take a leading role here. We do need to see that clear statement in the low carbon industrial strategy because we lack it at the moment.

Q143 Mr Chaytor: We touched on the question of domestic insulation earlier as an easy way to create new jobs. Are there other sectors where new green collar jobs could be created cheaply and quickly?

Mr Pearson: My first answer would be in the workplace through energy efficiency and other initiatives around sustainable production, which is really an essential message of the work we have just reported on—through what we call the greening the workplace strategy. Every time you use an energy saving device or you work more sustainably, you are either creating or protecting employment. The first thing is the greening the workplace activities because they do generate employment or they protect it. We are obviously hoping that there will be a green workplace theme in the low carbon industrial strategy because it is the obvious place to start. Workplaces consume energy and resources. They generate waste and travel. Interventions in all of those areas have the potential to change the economy to the place it should be at.

Q144 Mr Chaytor: I can see the value of that work in reducing energy costs but in generating new products and services that is not necessarily going to be quick and easy, is it? Are there other sectors where new products and services can develop more quickly?

Mr Pearson: We would go for low carbon vehicles right across the board, not just bikes, but the private car, the light vehicle, the commercial vehicle.

Q145 Mr Chaytor: The development of new engines?

Mr Pearson: It is two stages, is it not? It is the lighter engine, the lighter vehicle, the greater efficiency in the technology we have, hybrid into the combination of electric and fossil fuel and then to the one or two million vehicles a year by 2020 that should be electric. Every year we waste in not getting those one to two million vehicles built is a year where we have a third of our carbon generated and thrown up into the atmosphere because we are not tackling carbon from transport. It really is a crucial area. We were talking earlier about the defensiveness of trade unions in the car industry, but they want a car industry still there to convert green. In the background they are saying, “We have to save what we have because there will not be an industry to convert to green if we do not save the industry we have.” Getting support for changes in other technology in this sector should be really job rich.

Q146 Mr Caton: Your written evidence argues,⁷ as well as providing green skills themselves, that the development of influencing and persuasion skills is required to encourage people to change behaviour and reduce emissions. Who needs these skills and what should the government be doing to make sure they get them?

Ms Ferns: Lots of us need the skills but workers need the skills in their workplace. I think the Carbon Trust would agree that you can introduce new pieces of kit and innovative products into the workplace but to sustain behaviour that leads to lower emissions and more efficient use of resources what you need to do is to change people’s habits. You need to change the way that they behave at work and at home. There is huge potential saving there to be had. It is also the way in which you continue to make those savings in the longer term. We have all talked about initiatives that come and go. It is a bit like having new pieces of kit as well. People take notice and after a while it becomes part of the normal scenery and people lose interest. What you need is people in the workplace who are going to keep their eye on the ball and make sure that people do not slip back into old habits, that they do change their behaviour and work in a more sustainable way.

Q147 Mr Caton: Do you think enough is being done in the education process both at primary and secondary level to encourage green thinking in our children?

Ms Ferns: I do not know whether enough is being done. I do not have all that much contact with schools. I am aware that more is being done than used to be and I think there are some good examples of very good practice. What I am less sure about is how consistent that work is and whether those examples of good practice have a lot to thank motivated teachers for and motivated individuals who drive those forward and how much that has become embedded into the system, I do not know.

Q148 Martin Horwood: Given there are other governments around the world who are now beginning to focus on this agenda much more than they have done in the past—most obviously spectacularly China and the United States now suddenly starting to promote green jobs as well—do you think we are doing enough to retain the skills and knowledge on greener technologies in this country or do you think there is a real risk of a green brain drain?

Mr Pearson: I think there is a real risk. Thank goodness other countries see the big issue globally to be resolved is the US/China relationship and if it stimulates both of them to convert their industries and it draws talent globally to the US or China I suppose those processes are to be welcomed; but it would be nice to have as much of the innovation as possible taking place in Britain, which is why we have been great supporters of the projects in the green transport sector, in the nuclear and CCS sectors which are two or three of the major centres of innovation in the cell technology that is going to come through. The CCS capture and storage technology is absolutely vital and the new generation of nuclear and they are all major opportunities for investment and for the development, enhancement and personal career development questions in terms of the new technologies, how they are applied and the

⁷ See Ev 33

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opportunities for employment they provide. We are massively in favour of real change in Britain in areas such as those.

Q149 Martin Horwood: If we take CCS, I am sure most of you would have welcomed the government's expansion of the competition but, compared to the kind of investment that is going into CCS in China and the United States and the existing expertise in the US dating back 40 years, surely those are the places where most of the real innovation and development are going to take place and we are just going to be playing catch up?

Mr Pearson: That could be right. It does not feel like it on carbon capture and storage. It feels like we could well be on the point of creating that cluster approach, which is vital to CCS. Carbon collection and storage is really not appropriate for single sites; it is a cluster thing, is it not, as the government has been arguing and indeed as we have been arguing. In Yorkshire, in the Aire Valley, there is this agglomeration of around 13 or 14 emitting sites, whether it is steel, coal, gas fired power, chemical, ceramics. There are major emitters. The idea is they all find different technologies, ways of liquidising and CO₂ being captured and transported away.

Q150 Martin Horwood: In the industries where we have not got that kind of critical mass, is not the inevitability that we are going to be importing skills and knowledge from other countries. If you look at Denmark on wind power and things like this, they seem to be so far ahead of us that we are in the end going to have to start importing the skills if we are going to develop here, are we not?

Ms Ferns: That may be so. A real risk for us looking further ahead is in terms of the R&D capacity we have here, which is less than it used to be. A lot of research facilities have been privatised or put at arm's length and are now much more contract driven. The long term research and development that we used to have taking place has reduced in volume. I think that is absolutely key for the future. Okay, we may have missed the boat on wind but that is now. The potential for renewables in the long term is much greater and there is a danger I think that we do not have sufficient R&D base. The other danger is that, where we do have R&D capacity, there is that gap in scaling up the R&D into a commercial prospect. I think there is a real danger there that we will lose out to other countries.

Q151 Martin Horwood: Are you aware how we compare with other governments, particularly on public support for R&D, or is it more of a private sector issue?

Ms Ferns: Public support for R&D is important and clearly we have had more money put into the science base over the last ten years or so which has been important. Government departments have scaled back in terms of their commitment to R&D which has led to loss of key skills and in some sectors we have had a lot of services privatised. These are long term projects so they are not necessarily projects that particular companies will do. They are projects that need public investment and public capacity.

Q152 Martin Horwood: You may not be able to answer this now but if you could send us information that would be helpful. How do we compare for instance with other European governments in the amount of R&D we are putting into these skills?

Ms Ferns: Perhaps that is something we could follow up on.

Mr Pearson: We would be pleased to do so.

Q153 Chairman: We had evidence from John Edmonds a couple of weeks ago. He said that he did not think either the government or British industry were particularly well suited to making a quick transformation to a low carbon economy. Do you agree with that assessment?

Mr Pearson: No, I do not. I can see why he would say it but if you go to a body like the Renewables Advisory Board you really do see a great appetite for a combined effort to get to this target. What we would like to see is other sectors being given the same sense of industrial, trade union, government concerted effort to get there in the car industry for example. On the Coal Forum, we are now getting towards a clear sense of how much coal we want to mine and burn, how much clean coal and how much clean gas. Jobs will be lost in that CCS strategy as we lose coal fired power stations. The unions and communities want to see jobs created or saved through the legitimate use of carbon capture. These are major issues of public concern. Bodies that are focused on delivery are really much the best way, rather than general purpose activities and high profile events which last a day. We are talking about being here for the long term and we do really believe that sector based just transition strategies are really the way forward.

Q154 Chairman: You identify the Renewables Advisory Board as a good example of where it is working properly and you would like to see something similar with vehicles and coal. Is that right?

Mr Pearson: Any of the major sectors identified by the Committee on Climate Change deserve that kind of attention.

Chairman: Thank you very much for coming. It is much appreciated.

Memorandum submitted by The Institute of Environmental Management and Assessment (IEMA)

SUMMARY

- Defining green jobs and skills properly is essential to improving prospects for environmental employment and benefits.
- Employers must see a more coherent business case for increasing pro-environment activity if demand for green jobs and skills is to rise. Increasing demand depends on greater understanding of the benefits of such strategy, but at present more official effort is going into promoting supply of environmental technology rather than developing the understanding that will create demand.
- At the same time, and to compound the problem, the skills delivery system is demand-led. It depends on employers arguing for the skills they need to grow their business, although too many of them lack both the motivation that comes with a coherent business case and an understanding of the prospects for pro-environment activity in a changing economy.
- The publicly-funded business support system should ensure that organisations understand the business case from environment and resource efficiency activity and are supported in developing employee knowledge and skills.
- Environment professionals employed across all sectors of the economy have a significant role to play in helping to transform the UK to a low carbon and resource efficient economy.

INTRODUCTION

1) The Institute of Environmental Management and Assessment (IEMA) is a professional body of environmental practitioners; our vision is to promote the goal of sustainable development through improved environmental practice and performance. Of a membership that exceeds 14,500, over 51% are employed in business and industry across all sectors of the economy, 26% are in consultancy, 10% in the public sector and 13% in education. IEMA members largely work on a broad range of multi-disciplinary environmental issues, including climate change mitigation and adaptation and resource efficiency.

2) We welcome the Committee's inquiry into Green Jobs and Skills and believe that investment in low carbon and resource efficiency has the potential to stimulate economic growth with a lower impact on the environment. We see Green Jobs and Skills as pre-requisites for transforming the UK economy into one which is low carbon and resource efficient. The 2009 Budget provided an opportunity to support moves towards the UK developing a low carbon and resource efficient economy and we are supportive of action being taken to develop the low carbon sector.

3) However, IEMA has serious concerns that the potential scope for green jobs will not be fully realised. There are a number of failures which we see as needing Government attention: failure to recognise and support the mainstreaming of environmental knowledge and skills; a skills delivery framework that is ill-equipped to deal with the cross-cutting nature of environmental knowledge and skills; a business support system that is unlikely to engage companies in resource efficiency and low carbon activities and therefore misses opportunities to stimulate demand; and a failure to align skills development with new environmental policy and regulatory initiatives.

4) We believe that for a supply and demand market to operate successfully in the areas of low carbon and resource efficiency, an emphasis needs to be placed on demand side activities. IEMA believes that mainstreaming environmental knowledge and skills across all areas of economic activity will be an essential pre-requisite to unlocking latent demand.

DEFINING GREEN JOBS

5) The Innovas 2009 report for BERR, "Low carbon and environmental goods and services: an industry analysis", bases its assessment of green jobs on those employed in a relatively broad and extended definition of the low carbon and environmental goods and services (LCEGS) sector. This is followed through into the 2009 Budget Report and Investing in a Low Carbon Britain, both of which state that 880,000 people in the UK are employed in the green sector. While it can be debated whether, for example, a company where 20% of turnover is derived from supplying the low carbon sector is providing green employment, we believe that limiting the definition of green jobs to those employed in the LCEGS sector misses a significant number of people employed in green jobs. Any discussion or analysis of green jobs needs to recognise those people who are employed in environmental roles outside the LCEGS sector.

6) Many people are employed in environmental roles across all sectors of the economy and our experience is that the number is growing, in part evidenced by IEMA's rapidly growing membership. Moreover, the contribution that those employed in environment and sustainability roles in mainstream business, particularly in helping to improve resource efficiency and accelerate the demand for low carbon technology, will be essential if 2020 and 2050 greenhouse gas emission reduction targets are to be achieved. While we strongly support the need to stimulate the supply of low carbon and environmental goods and services, there is insufficient activity to raise the demand side for these new goods and services. IEMA believes that environment professionals either directly employed or supporting mainstream business have significant potential to stimulate and catalyse demand.

WHAT DO WE MEAN BY GREEN SKILLS?

7) Although use of the term *skills* is widespread, we believe that when it is used in the context of green skills or environmental skills, it needs further elaboration; this is particularly important when evaluating whether the UK's skills delivery framework is sufficient to support moves to a low carbon and resource efficient economy. Our view is that it is helpful to distinguish between environmental knowledge and the capability to apply it in practice. We believe that this is an important distinction, because many of the skills that are required to make an environmental difference are generic in nature—project management, leadership, communication, finance etc, whether in mainstream business or as part of the LCEGS sector. Indeed, we would argue that the generic skills are already widely available and used throughout the economy and that the focus should be on ensuring that people are equipped with the appropriate level of environmental knowledge (defined here to include both knowledge of effective tools and solutions as well as knowledge about the environment).

8) In 2008 Lantra, the Sector Skills Council (SSC) for the environmental and land based sector, commissioned IEMA to undertake research into existing National Occupational Standards (NOS), Training and Qualifications in relation to environment and sustainability. A key finding of the research was the lack of a clear structure and framework for environmental and sustainability skills. For example, there was duplication of NOS across all SSCs, varying quality of NOS and a range of qualifications being developed in isolation. Follow up research by IEMA for Lantra focussed on the knowledge and skills required for individuals with environmental responsibility in business. This highlighted that many of the skills required by environmental professionals are generic; communication, leadership, planning, influencing; however, environmental knowledge is where training and support is required.

MAINSTREAMING ENVIRONMENTAL KNOWLEDGE AND SKILLS

9) IEMA believes that, in moving towards a low carbon and resource efficient economy, it is important to distinguish between the supply side, ie supplying low carbon technologies and products/services; and the demand side, ie companies and organisations actively seeking to improve their resource efficiency and demand low carbon and efficient products and services. Both the supply side and demand side need to be supported in order to make significant progress in reducing GHG emissions. IEMA believes that “mainstreaming” environmental knowledge into all types of business is essential as this will act as a catalyst for low carbon and resource efficient activity. This will require training and support to be provided at all levels and across all sectors, eg business leaders need to understand the costs, risks and opportunities of climate change; designers need to understand how to integrate eco-design principles into product development; procurers need to integrate environmental criteria into purchasing and procurement activities. IEMA's view is that environmental professionals in business are an important catalyst for this change.

10) Ensuring that employers have access to knowledge of environment, low carbon and resource efficiency is essential. If the UK economy is to adopt the tools, techniques and technologies available, knowledgeable people are needed to make and communicate a more coherent business case. The requirements of such as case are environmental performance improvement, business context, options analysis, pay-back times, maintenance and deployment costs needed to justify any particular action.

11) An important issue for IEMA is that the emphasis from Government is much stronger on the supply side than the demand side; its focus is too much on creating new low carbon technologies and not enough is being done to stimulate the demand from all types of business for low carbon products and services. While there should be no diminution of proposed action to develop new low carbon technologies, we believe that more support is needed to bring the demand side stimulus up to the level of the supply side and we see this as being important for two key reasons. Firstly, the 2050 80% greenhouse gas reduction target means that the whole of the economy will need to become low carbon and all organisations need to play a part; greening the generation of energy will be insufficient on its own. Secondly, while the export potential of low carbon goods and services is significant, if greater take up of these is experienced outside the UK than in the domestic market, then mainstream UK businesses will become less competitive due to reduced resource efficiency.

12) Both the 2008 Pre Budget Report and Budget 2009 noted the importance of appropriate skills for a low carbon economy. However, it is disappointing that no new resource has been allocated to support skills development in this area, nor any indication of money ring-fenced from existing budgets. As such, we believe it will be much harder to ensure that low carbon and resource efficiency skills are properly supported as it will require re-allocation of resources within the skills delivery framework from existing spending priorities.

SKILLS DELIVERY FRAMEWORK

13) It is estimated that 75% of the 2020 workforce is already in employment; therefore, ensuring an effective and efficient skills delivery framework for those already in work is essential if the UK is to meet its long-term GHG emissions reduction targets.

14) In December 2006 the UK Government launched “Prosperity for all in the global economy—world class skills” commonly referred to as “The Leitch Review of Skills”. The report asked a question: How should the UK develop skills to maximise economic prosperity, productivity and improve social justice? The answer lay in incentivising employers to attain higher qualifications, to be delivered through a sector-specific

system that empowers employers and individuals to demand the skills they need, a simplified route to market for vocational training and funding, and publicly funded organisations and agencies that listen and react to knowledgeable employers.

15) Firstly, the system developed to up-skill the economy is *demand-led*, relying on the private sector engaging with and arguing for the skills it feels are relevant to maximise economic growth. IEMA believes there is market failure in expecting a demand-led skills delivery landscape to meet the skills requirements of a low carbon and resource efficient economy. Despite significant drivers, too few organisations understand the low carbon and resource efficiency skills they need, why they are needed and the productivity and competitiveness wins that follow as a result. In a demand-led system this is tantamount to putting the brakes on.

16) Secondly, there needs to be an understanding in the skills delivery framework that “the environment” is not just a sector; it is also a cross-cutting theme affecting all sectors of the economy. In a vertically structured sector skills delivery system, this poses a significant challenge for horizontal issues such as “low carbon”, “resource efficiency” and “environment”. Our view is that the UK Commission for Employment and Skills should take the lead to ensure environment and sustainability skills are embedded across all parts of the skills delivery framework.

17) The skills delivery framework needs to ensure that it supports the development of higher levels of environment and sustainability knowledge and skills at levels 4 (degree level equivalent) and above on the Qualifications Credit Framework, as well as helping people achieve level 2 qualifications. This means that Train to Gain, the funding and brokerage service, needs to understand the qualifications that are available and also have the in-house skills within its brokerage team to ensure resource efficiency and low carbon skills development can be identified and successfully brokered.

BUSINESS SUPPORT

18) IEMA welcomes the emphasis that Government has placed on streamlining the way resource efficiency business support is provided through the new Business Link Information, Diagnostic and Brokerage (IDB) service. With an estimated 500,000 IDB interventions per year, this presents a significant opportunity to mainstream resource efficiency. However, we are concerned that the full scale of opportunity will be missed as Business Link Advisors, the gateway to business support, lack sufficient resource efficiency knowledge to identify the issues and potential improvements. This will result in a failure to help employers understand the business benefits of resource efficiency, which in turn would stimulate demand for more specialist support.

19) Where support is provided to business, IEMA believes it needs to be targeted to ensure organisations understand the business case and sustain resource efficiency activity after publicly funded support has ended. Support must include skills development to ensure relevant employees have the appropriate knowledge and capability. Support in implementing relevant management tools, such as environmental management systems that conform to national/international standards, should also be provided as a means to embed environment and resource efficiency into business management systems.

LINKING SKILLS DEVELOPMENT AND ENVIRONMENTAL POLICY INITIATIVES

20) Legislation and regulation are essential policy mechanisms to support environmental protection. Fiscal instruments and sector voluntary approaches are also being used to stimulate improved environmental performance by companies. The result is a detailed and complex set of legal and policy instruments across a wide range of environmental issues (eg waste, water, air, contaminated land, habitats and species), business activities, products and substance use.

21) However, research from NetRegs in 2007 showed that less than a quarter (24%) of SMEs could name a piece of environmental legislation, and that only 15% thought that they undertook activities that are harmful to the environment.

22) IEMA believes that there needs to be much closer alignment between skills development, business support and Government policy and regulatory initiatives. This would help to raise awareness of the importance of legal compliance in improving environmental performance and also help to ensure companies implement laws and regulations in the most effective and efficient way possible. The ongoing development of new legal requirements being placed on companies of all sizes, for example the Carbon Reduction Commitment, extension in scope of the European Emissions Trading Scheme, together with voluntary initiatives to encourage companies to quantify and report their GHG emissions or determine the carbon footprint of their products/services, should be supported with appropriate skills development programmes. Skills development should also be an important feature of sector agreements and product roadmaps.

CONCLUSION

23) The transition to a low carbon and resource efficient economy will require a significant shift in culture and behaviour in all sectors of the economy, if the UK’s challenging greenhouse gas reduction targets are to be met. Achievement will depend on the supply of new technologies and techniques and their deployment throughout the economy. In addition to providing support to develop skills in the low carbon and

environmental goods and services sector, IEMA believes that environment and sustainability knowledge needs to be mainstreamed throughout the economy and that environmental professionals working in mainstream organisations have a significant and important role to play in securing this transformation.

21 May 2009

Witness: Mr Martin Baxter, Acting Chief Executive of IEMA, gave evidence.

Q155 Chairman: Welcome. I hope you found the previous witnesses' evidence interesting to you. Your submission to the Committee¹⁰ said that mainstreaming environmental knowledge into all types of business is essential as it acts as a catalyst for low carbon and resource efficient activity. Why do you think the government are not doing this?

Mr Baxter: Firstly, it is quite difficult. Secondly, the activity and thrust of government has been about stimulating new innovation. It is difficult to understand why they have not picked up on the need to mainstream demand for low carbon, resource efficiency and environmental improvement in business simply because, in our view, it consistently shows that companies can make real bottom line benefits. Also, by investing in environmental skills in mainstream business, we believe that acts as a catalyst for supporting new innovation. Envirowise is a publicly funded programme to support business resource efficiency. The evidence suggests that they have consistently been able to deliver business benefits. The Carbon Trust is doing similar work and we believe a programme that accelerates the take-up of environmental skills in business so that business can do this for itself would be a good use of public money and would help to drive innovation in new technologies which would help to support the move towards a low carbon economy.

Q156 Chairman: Those examples you have quoted are what you consider good ways of how this could be done?

Mr Baxter: There are existing ways of how things are being done but I do not think they have been as effective as they could have been simply because the one off interventions you might get from the likes of Envirowise or the Carbon Trust do not leave the business or organisation with the capability to do it for itself. We think any form of public support for companies should also focus on giving them the capability to make ongoing, lasting improvements. Organisations change. The external environment changes, whether it is the price of energy or raw materials, diminishing raw material or climate change adaptation, we strongly believe that companies should have access to the capability to make those business decisions and investments for themselves.

Q157 Joan Walley: You were in for the previous session. It seems to us that a demand led approach to skills has not worked. I wonder what your take is on why the specific skill gaps are still not being targeted by government or indeed by industry.

Mr Baxter: There are a number of problems that we see. Firstly, there is a general failure in a large proportion of UK businesses to see the benefits of good, sound environmental management and resource efficient management practices.

Q158 Joan Walley: Why is that?

Mr Baxter: Competing demands for time. If you go back a number of years, environment might have been seen as altruistic rather than delivering a core business benefit. The ability to argue a coherent business case based on sound, environmental improvement principles which will deliver improved business resource efficiency will prepare an organisation to deal with for example climate change adaptation. We have seen some organisations now that are starting to take that and plan a number of years into the future about how they will deal with that. They are starting to see that business and environment are inextricably linked and there is then value in having those skills, but they are few and far between. Our own organisation's growth indicates that there is increasing interest from business in this but it is not going fast enough, in our view. In terms of a demand led system, the sector skills councils are a demand led framework. If business is not demanding resource efficiency and low carbon skills, the sector skills councils will not deliver them and therefore you have a problem. The other issue that we have raised in our submission is that environmental business resource efficiency and low carbon are what we would call horizontal issues, so they apply across all sectors of the economy. You have the vertically aligned sector skills council approach and you have different approaches from different sectors where a large proportion of the skills that need to be developed are the same, so you will either have duplication or gaps, but there is no coherent approach.

Q159 Joan Walley: We are saying that the government is not really targeting the skills which are needed; neither is industry so therefore if it is the sector skills councils that need to be filling this gap and they are all having different approaches why is it that somehow or another the lessons of the Stern Report cannot be filtered through into the skills gaps that we have? It is just straightforward, is it not? Is it the chambers of commerce that are not taking this approach? Whose responsibility is it?

Mr Baxter: If you look at the work that we have had to do to try and push this agenda, it takes us into Defra and the Business and Sustainable Consumption and Production Unit there. It takes us into DEC, BERR and DIUS, so you have to spend a lot of time working across different government departments because there is no coherent approach.

¹⁰ See Ev 50

That is certainly a problem for us. Also, we are starting now to see some of the mainstream business trade bodies take this a bit more seriously. The CBI has its climate change programme. We work with EEF, what was the Engineering and Employers' Federation in developing skills to help make businesses more efficient. That is starting to happen but I would say it has been happening in spite of government support, not with it.

Q160 Mr Chaytor: I would like to ask about accreditation and ISO 14001. What is your assessment of the value of that?

Mr Baxter: There are something like 150,000 ISO 14001 accredited certificates around the world. There is significant growth. The UK has something like 7,500 certificates and it has been growing at something like 10 or 15 per cent a year.¹¹ In terms of its ability to deliver, it helps to deliver operational efficiencies but in terms of the standard itself there is not a great deal wrong with it. The way in which it is applied in organisations tends to deal with the operational issues, particularly a legal compliance delivered focus, and does not really push into the more strategic business elements. It is slightly weaker on dealing with environmental issues and products and also in supply chains. For information, I head up the UK delegation to ISO on all environmental management standardisation and last week we started a group in ISO to look at some of the strategic issues they are facing in environmental management systems and how they can be addressed. That is something that we are certainly looking to exploit. A lot of the training that is done in the UK on mainstream environmental work in business is about supporting people in companies being able to implement environmental management systems to deliver improved environmental performance.

Q161 Mr Chaytor: Does that mean there is a case for a new standard which is more specifically focused on a low carbon economy or do you know if the existing 14001 can be modified?

Mr Baxter: 14001 is the main standard in ISO that deals with environmental management systems but there is a whole range of other standards that deal with environmental labelling, lifecycle assessment. The UK is convening the International Group on integrating environmental issues into product design. There is a whole range of greenhouse gas emission standards being developed at ISO including product carbon foot printing and there is a proposal for water foot printing as well. There is a lot of activity. I do not think that internationally ISO has been particularly effective in getting those standards to work more coherently together and that is one of the challenges that we have been working with as the UK's input into ISO, to get that to be more effective.

Q162 Mr Chaytor: What are the next steps to make it more effective? What would you be arguing for in the ISO discussions?

Mr Baxter: In terms of using environmental management systems, it is focusing on environmental improvement. It is making the link between having a more holistic approach to the use of the standard. You can apply the standard to operational units but having something that stretches across into the strategic decision making is much more effective because that is where some of the big environmental decisions will be made which will lead the way in which that company addresses environmental issues for its sites around the world. That is one of the things we will be focusing on.

Q163 Mr Chaytor: When the government produces its low carbon industrial strategy later this year, how prominent should this kind of environmental accreditation be? Do you think it ought to be a big theme in the strategy?

Mr Baxter: It should certainly be part of the theme and it has a role to play. Defra has a position statement on the use of environmental management systems but it has not really integrated it into existing policy delivery. For example, if you look at the carbon reduction commitment, there was a great opportunity to have built in the use of ISO 14001 to support a management framework for improvement and to support data management, because there is a reporting element in the carbon reduction commitment, and it could also have been used as an indicator of early action, to reward those companies that had already made some commitment and demonstrated performance improvement. Unfortunately, that was a failure. There are other examples where Defra has its product road maps and sector agreements. There are opportunities to use things like voluntary environmental management systems as a means to demonstrate that organisations within sectors are delivering on the commitments that are made. A bit more coherence would be something that we would welcome.

Q164 Mr Caton: A number of different organisations have an interest in green skills and some of them have been identified already: industry, sector skills councils and the government itself. How well coordinated is action on green jobs and skills, in your view?

Mr Baxter: Very poorly. One part of our submission identifies that we do not believe the definition of green jobs and skills is appropriate. In putting together our submission, in some ways, it falls slightly outside the scope of your own Committee's framework because you are looking very much at this as a low carbon environmental goods and services sector in its own right; whereas we believe there is an awful lot to be said for mainstreaming environment in business across the piece. To be able to achieve our 2020 and 2050 CO₂ reduction targets, everybody is going to have to play their part. In terms of a coherent view from within the UK, it is not there. It could be, so the professional bodies could play a part. We are one of them—probably, I

¹¹ *Note by Witness:* The UK has over 7,000 certificates and in 2008 the number grew by 16 per cent, not 7,500 certificates, growing at 10 to 15 per cent, as indicated during the evidence session.

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guess, the biggest—but there are others that can play their part. There are environmental regulators. There are the government departments interested in both the business and innovation side and also Defra. That collaboration could be put to much greater use with a clear road map to say these are the skills that are needed; this is the direction in which we are all going. Everybody needs to play their part but that is lacking at the moment.

Q165 Mr Caton: Why has not that coordination kicked in to date?

Mr Baxter: Lack of leadership, I would say.

Q166 Mr Caton: Who should be showing that leadership? Government? The industry?

Mr Baxter: There has been effectively market failure in being able to take this forward. In the case of market failure, there is a role for government in setting the strategic direction and articulating the case more clearly. Government should take the lead but it should be in partnership with the other bodies.

Q167 Mark Lazarowicz: What would you like to see from the low carbon industrial strategy?

Mr Baxter: A very clear direction that, come what may, the UK will drive forward and achieve its 2020 targets, both in terms of the 34 per cent reduction in greenhouse gas emissions and the 15 per cent of the UK's energy supply from renewables. Secondly, there needs to be a clear commitment that part of that strategy will be delivered by mainstream business and that it will not just be the development of new organisations, new companies, to drive new technology. That has to be an integral part of the mix. Following on from that, the skills that are needed in mainstream business to be able to make that transformation need to be supported very clearly.

Q168 Mark Lazarowicz: What are the key things we need to do to ensure that this happens? What are the points that really need to be given a priority?

Mr Baxter: A coordinating body that focuses on environmental skills and green jobs is absolutely essential.

Q169 Mark Lazarowicz: A governmental one, a governmental industry one or what?

Mr Baxter: I think I said in my earlier answer that we felt it should be government but in partnership with others. Secondly, there does need to be an articulation and a breakout so that we understand what we mean by green skills. We would very much come from the view that a lot of the skills are already there in the economy. It is environmental knowledge and the way in which you apply that in practice in different situations and the way in which you think about those things from a business context which is lacking. We would like to see much greater emphasis on the key environmental knowledge that is required to make this transformation. It is not just about understanding some of the basic environmental science principles; it is understanding the environmental business dynamic, the tools that are

available, whether it is ISO 14001, whether it is the carbon footprint standard, whatever it might be, and then backing that up with a clear skills programme to enable those tools to be applied successfully in practice. Thirdly, the government has an ongoing legislative programme which is there to regulate the way in which companies operate. If you take the carbon reduction commitment, there is no skills programme there to help organisations in both the private and the public sector to achieve the improvements in performance that are required. We think there would be great merit in aligning some of the skills development programmes with the new regulatory requirements so that the expectations that are there from a regulatory regime are achieved and potentially exceeded.

Q170 Chairman: You mentioned the role of mainstream businesses. If you look back 40 years ago and see how we developed in this country a lot of expertise in offshore oil and gas technology, drilling, exploration, production and so on, given that it is quite clear we have a similar, natural advantage for offshore wind as an island surrounded by a lot of windy seas and a history of expertise in offshore technology of a slightly different type, why do you think we have so completely missed out on this opportunity?

Mr Baxter: Firstly, we missed out because we did not have a clear direction until very recently. We now have very clear climate change targets. We have very clear renewables targets, so that helps to set the policy context. That was lacking. Secondly, some of the problems that we are facing at the moment in terms of deploying some of the big, new environmental technologies, whether it is offshore or whether it is some of the onshore things, mean that we are going into a new consent regime. The Infrastructure Planning Commission is being established which will have a new regime. That creates uncertainty. There are no national policy statements available yet which will cover energy, nuclear, transportation. We are waiting for all those. If I was an investor, I would say that equals uncertainty. Even when the Infrastructure Planning Commission comes in, there is then political uncertainty because it is unclear what will happen if there is a change in government because my understanding is that there has been a very clear commitment to withdraw the Infrastructure Planning Commission. That creates uncertainty for investment and therefore international companies will look to other places to invest where there may be greater certainty.

Q171 Joan Walley: Listening to all the evidence that we have had this morning, the thing that just hits me in the face is the extraordinary ignorance that there is around the country about the enormous opportunities that there would be and could be from green jobs if only we could find a way of overcoming all the difficulties and hiccups in the system. I was interested in the research that you quoted in 2007 which showed that less than a quarter of SMEs could even name a piece of environmental legislation. You

have members who are all engaged in different ways in different industries on this agenda. What can be done to really focus on overcoming this widespread lack of understanding about the importance of this agenda? Presumably, if everybody understands the importance of this agenda, lots of the difficulties or obstacles will really be overcome?

Mr Baxter: For us, the answer is very clear and that is that companies need access to people with the right knowledge. Programmes that help to embed that knowledge in companies are absolutely essential. If you take a parallel with health and safety, although the legal regimes are very different, every company of a certain size—10, 15 or 20 people—has to have named health and safety representatives in their organisation. There are very clear personal liabilities associated with health and safety. There is nothing like that on environment.

Q172 Joan Walley: That has to start at the top table though, has it not? It has to start at the level of chief executive. Is there any arrangement whereby your members are getting chief executives' focus on this agenda?

Mr Baxter: Our members could be anything from a director in a big company, an environment or sustainability director, or they could be a site environmental coordinator. Clearly the ones who are operating at the high end do have that influence and can help to influence the strategic direction of their organisation. In my own example, as well as being an environmental professional, I am also a member of the Institute of Directors and participate on their director development programme. There is nothing about strategic environmental business imperative in that programme. If you look at all the MBAs in the UK, what proportion of them would be having a module that takes people through this agenda? Very few, I would suggest.

Joan Walley: Or even giving evidence to parliamentary committees.

Q173 Chairman: Having heard the evidence that has been given this morning and the questions we have asked you, are there any other points you think you would like to make to us that would be relevant to our inquiry?

Mr Baxter: Mention has been made about the price of carbon. Although that is important, the bigger stimulus is going to be the price of energy. A high price for a barrel of oil will transform the way in which businesses look at this. That price is going to be absolutely critical. If you look back 12–18 months ago when there were significant increases in the price of oil and there were major problems with budgeting for companies that were big energy users, that clearly was an incredible stimulus for companies taking this more seriously. Whether it is the price of carbon that is needed or whether it is just monitoring energy prices and the role of renewable in terms of flat lining some of the price increases that you could have, it

strikes me that that is an important issue. It seems that is something the Committee is interested in but, from our perspective, we would like to see far more attention given to the role of environmental professionals in business. We have worked hard to position that as something which is not a finger wagging type, green, moralistic argument but more: "It is good for your organisation. Here is the value that these people can offer." The more that can be given to that approach, the more successful we will be in making that transition to a low carbon economy.

Q174 Chairman: On the price issue, does that mean that there is a role perhaps for carbon taxation particularly to meet some of the shortcomings of the emissions trading scheme, which is not at the moment for various reasons producing a price of carbon which is going to drive more investment into low carbon energy? While that market failure exists, is there a role for more carbon taxation?

Mr Baxter: Potentially. It partly depends on how you view the carbon reduction commitment. The carbon reduction commitment is there to say that there is a price of carbon in terms of the primary energy production in the UK from fossil fuel based energy sources, but the carbon reduction commitment is for those organisations that use a lot of energy. There is an incentive scheme there for buying allowances and that is completely within the government's remit to set fewer allowances to drive up the price of those allowances and to extend the scheme to slightly smaller organisations. Until that scheme is operating, maybe it is a little bit too soon to make that transition at the moment.

Q175 Chairman: In the previous answer you referred to the desirability of an enhanced role and involvement for environmental professionals within a wide range of businesses. The Committee on Climate Change has said that in addition to monitoring the statistical progress towards meeting carbon budgets it will also be looking at other things, the number of wind farm planning applications that are in. Is that compatible with the target we have for a big increase in renewable energy by 2020? Is there some similar way of measuring the role that environmental professionals have with business to see whether that is also growing in the way that, on your analysis, it needs to if we are going to get to where we are trying to reach?

Mr Baxter: It would be a useful indicator to look at the number of skilled environmental professionals operating in mainstream business, particularly because we believe that they act as a catalyst for change in their organisations. They do not do it all themselves, but they work with procurement, product developers, business strategies and operational people. A useful indicator is the way in which their numbers grow and their influence develops.

Chairman: Thank you very much for coming in.

Tuesday 7 July 2009

Members present

Mr Tim Yeo, in the Chair

Mr David Chaytor
Martin Horwood

Dr Desmond Turner
Joan Walley

Memorandum submitted by the Environmental Industries Commission (EIC)

EIC was launched in 1995 to give the UK's environmental technology and services industry a strong and effective voice with Government. With over 300 member companies, EIC has grown to be the largest trade association in Europe for the environmental technology and services (ETS) industry. It enjoys the support of leading politicians from all three major parties, as well as industrialists, trade union leaders, environmentalists and academics.

In January we published our "Green Jobs Growth Strategy".¹

INTRODUCTION

The UK's future competitiveness depends on how quickly we can establish a world-leading environmental industry with thousands of new business, hundreds of thousands of new jobs and huge export potential.

Those economies that gain early mover advantage by developing the green technologies that will guide the transition to a low carbon, resource efficiency economy, will soon be in a position to claim a share of what is already a \$3 trillion global market place—and growing rapidly at over 5% a year.

Taking advantage of this new green economic opportunity is dependent on Government intervention—ahead of international competitors. Without the right policy framework, business will not have the confidence to invest. EIC has lobbied harder than any other organisation for this policy framework.

For example, EIC's recent "Green Jobs Growth Strategy" set out a range of policy recommendations that would put the UK at the forefront of this huge economic opportunity.

Government figures show that the UK's environmental industry, which has a turnover of £106 billion (2007–0), currently employs over 800,000 people. The Department for Business, Enterprise and Regulatory Reform estimates that an additional 400,000 jobs could be created in the UK's low carbon and environmental goods and services sector over the next eight years.

One prediction, from Gordon Brown, is that the low-carbon energy sector will employ 25 million people globally by 2050, which he identified as "a chance to create thousands of new British businesses and hundreds of thousands of new British jobs".

This is welcome, but we urgently need action to follow through on these words of political intent. Otherwise Britain will miss out and allow our international competitors to seize these huge environmental markets. First mover advantage rules.

Lord Mandelson, Secretary of State for Business, Enterprise and Regulatory Reform, highlighted in a recent speech that the environmental industry would create a "job revolution that cuts right across all sectors of the economy." He acknowledged, however, that the worldwide environmental industry would be a "fiercely competitive sector...we will need a smart strategic approach from government".

A "fiercely competitive sector" that the UK is already falling behind in. For example, the UK's environmental industry currently exports some £10 billion a year, yet Germany has environmental exports of some £50 billion (in 2006).

The new Low Carbon Industrial Strategy that sets out the Government's "vision" for how it intends succeed in this "fiercely competitive sector" is, therefore, welcome—and long over due.

However, securing the huge economic benefits of a low carbon, resource efficiency economy will not be achieved through "vision" alone. We urgently need the sorts of industry support policies—such as long-term regulatory targets and coordinated policies on R&D funding, skills and training—that will turn the "vision" into a reality.

Although we welcome the attention currently being given to climate change and low-carbon industry, climate change is by no means the only important environmental issue, and "low-carbon" is by no means the only important aspect of the development of a green economy. An overall strategic approach to green jobs and skills must address issues related to water, air quality, land contamination and soil quality, and resource efficiency.

It is time for Britain to get serious about ensuring its environmental industry wins the lions share of future global markets.

¹ See <http://environment-analyst.com/downloads/EICGrowthPlan2009.pdf>

GOVERNMENT POLICY APPROACH

1. The 2009 Budget failed to include an ambitious green economic stimulus that would have supported job creation, economic development, and environmental protection. Other countries around the world, from the USA to South Korea, have used multi-billion “green new deals” to create thousands of jobs in their environmental industries—putting them at the heart of the transition to a green economy. Enclosed, for the Committee’s information, is a copy of the written evidence EIC was invited to submit to the Treasury Select Committee immediately following the 2009 Budget. This sets out our concerns with the stimulus package announced in the Budget.²

2. In general, Government policy is moving in the right direction, but on too small a scale and at too slow a pace. We recognise that the Government has allocated a significant amount of money for delivery of its Low Carbon Industrial Strategy. However, its scale is significant more in relation to previous levels of funding and in relation to traditional Treasury thinking on these issues, rather than in relation to the conclusions of the Stern Report, the Government’s emissions targets, the recommendations of the Committee on Climate Change, or the scale of low-carbon fiscal stimulus expenditure in many other countries. There is a need to recalibrate thinking in the Treasury and BERR in order to base policy-making on a realistic appraisal of the scale of the changes now required.

3. EIC is concerned that the approach taken in the Budget is focused very much on assistance to the supply side of low-carbon industry, rather than on stimulating demand through inter alia, a supportive policy framework.

4. EIC is also concerned that the emphasis on “low carbon” is beginning to obscure other environmental and sustainability issues. We believe that there is a need for strategic thinking by government with the aim of promoting and assisting the whole of the environmental technology and services sector. This would be achieved through extending the Low Carbon Industrial Strategy dealing with other parts of the sector, such as water management, air pollution, waste and resource efficiency.

5. A further concern is that the Government may not sustain the action it has announced, seeing low carbon expenditure in the current financial year as a temporary measure in response to the recession. Government should ensure that its assistance to the environmental sector will be continued in future years. This is likely to require a different source of funding, in place of deficit spending, such as environmental taxation, thereby establishing (at a time of recovery from recession) “sticks” alongside “carrots”. This should be accompanied by other funding measures, such as the launch of a “Green Bonds” scheme and the establishment of a “Green Investment Bank”.

SPECIFIC RECOMMENDATIONS

6. As aforementioned, EIC believes that the Low Carbon Industrial Strategy (LCIS) should be extended to support the development of the whole environmental sector—to ensure, inter alia, that UK business responds effectively to the opportunities opened up by EU directives on water, air quality, soil, and waste. This should include an announcement of new money for implementation of the Strategy, going beyond what was announced in the Budget.

7. As you will note from our evidence to the Treasury Select Committee, much of the money announced in the Budget was not money directed at stimulating demand for environmental technologies. It is welcome to support development of these technologies but the most important thing is to stimulate demand—through, inter alia, a supportive policy framework.

8. As part of a wider *Green Industrial Strategy*, the Government should create a £10 billion “Green Jobs Investment Fund” for the 12 months following the publication of the strategy. This should include provision for:

- £6 billion to build 50,000 new low-carbon social houses on brownfield sites in—creating/protecting in the region of 160,000 jobs.
- £1.5 billion for extra investment in energy efficiency retrofitting of low income family homes—creating in the region of 145,000 jobs.
- £1 billion of extra investment on energy efficiency retrofitting of schools and hospitals—creating in the region of 21,500 jobs.

8. The environmental technology and services sector moves forward principally through advances in the regulatory framework. Government should establish new long-term regulatory targets and frameworks to support investment, innovation, and employment creation. These should include:

- On carbon management, tightening the new Carbon Reduction Commitment by reducing the threshold from 6,000 Mwh of half-hourly metered electricity use pa to 3,000 Mwh.
 - On sustainable buildings, establishing mandatory refurbishment standards for both homes and non-domestic buildings (and ensuring enforcement).
 - In order to improve energy efficiency, using IPPC Directive implementation to require large industrial sites to implement medium and long-term energy efficiency plans.
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² Not printed.

- In order to reduce water pollution, ensuring that the UK meets the requirements of the Water Framework Directive (through adequate investment approved in the next Periodic Review).
- In order to improve air quality, introducing a national framework for Low Emission Zones, establishing a nationally recognized standard for emissions and vehicle identification, supported by a national certification scheme of retrofit technologies. This would help create many new jobs in the UK's environment industry. Approximately 3,500 people are currently employed in the UK by the retrofit market. An estimated 80 per cent of the UK's retrofit market is supplied by UK owned companies. The UK's share of this market could increase significantly through effective Government support for the introduction of Low Emission Zones across the UK—helping create many new jobs.

9. EIC would be very happy to provide further evidence on any of these issues. Further recommendations are set out below.

10. EIC is very concerned that the economic problems faced by the brownfield development sector will be compounded by a tax burden the Government is imposing through the replacement of Landfill Tax Exemption for contaminated soils with an extension of the Land Remediation Relief. EIC fully supports the principle of incentivising a move away from landfill to treatment. However, these changes were meant to be revenue neutral—ie the extra revenue from the Landfill Tax would be recycled back to the industry through the extension of the Land Remediation Relief. However, this is not the case. EIC members have only been able to identify one site where the extended Relief was likely to be claimable. This means that the change will simply result in a net flow of revenue to the Treasury—and away from brownfield development.

11. The Government should tackle the problem of lack of adequate funding for the development of the environmental technology and services sector by launching a “Green Bonds”. The Government should also establish a “Green Investment Bank”, aimed at larger scale investors and drawing together expertise in this field.

12. The Government should tackle the problem of lack of adequate skills in this field through increasing support for “green jobs” skills training. A National Skills Council for Environmental Industries should be created, and it is also important to ensure that all existing Skills Councils develop programmes relevant for green jobs. There is a particular need to focus on the design, construction, maintenance, and facilities management of buildings.

13. Government support should give more emphasis to the commercialisation stage of technological innovation, where support is less highly developed than it is for very early stage research and development.

14. The Government should increase the Enhanced Capital Allowance to 150 per cent to provide a real incentive to ensure building owners specify qualifying technologies. EIC is concerned that the level of the ECA allowance does not give sufficient incentive to overcome the complexities of the supply chain, particularly in the key area of energy efficiency in buildings. With an enhanced value over 100 per cent investors would be more keen to obtain the allowance as it would be considered a real additional tax saving, rather than merely a cash flow saving. EIC believe that, by projecting previous trends forward, a 150 per cent this could have the effect of at least doubling the amount of energy and water saving equipment installed.

15. The Budget announced that UK renewable energy projects stand to benefit from up to £4 billion of new capital from the European Investment Bank. However the direct loans available under this scheme are only being made available for programmes costing more than 25 million euros, which will exclude many of the SMEs in the environmental industry.

16. EIC welcomes the Government's far-reaching commitment for all new homes to be zero carbon by 2016. By scaling up the house building industry to deliver zero carbon homes by 2016, the UK will create new and innovative technologies, services and skills that far exceed anything that has been achieved elsewhere. Establishing this technology and skills base in the UK will help create new business and, potentially, thousands of new jobs. It will also open up huge new global markets for UK business. To secure these benefits, the zero carbon target must, first and foremost, drive the highest standards of energy efficiency. If “zero carbon” is defined too loosely and allows house builders to meet their obligation by, inter alia, investing in offsite solutions, the Government risks undermining the core objective of the policy—to make our homes amongst the most energy efficient in the world. Lobbying from parts of the house building industry to water down the zero carbon target make this a core EIC concern.

17. The recent Commission on Environmental Markets and Economic Performance highlighted that “there is a huge opportunity for the public sector to amplify the role of low carbon and other sustainability characteristics in products in their purchasing requirements, creating a credible market need for these features so that business will invest in them to gain competitive advantage.” EIC believes that a Green Industrial Strategy and, if not, the Low Carbon Industrial Strategy, should address public procurement as key area for stimulating demand in environmental technologies,

18. Public procurement could also play a key role in stimulating demand in new technologies for meeting the Government's zero carbon homes target. EIC recommends that all social housing should be required to meet the low and zero carbon home targets one year before industry is required to do so. We accept that this is now not possible for the 2010 changes to Part L. Therefore, from 2012 all social housing will be required to meet the Part L standards that will become mandatory in 2013 and all social housing should be zero carbon from 2015.

19. It is also the Government's "ambition" that all new non-domestic buildings are zero carbon by 2019. This is welcome, but "ambition" does not drive investment. Industry will need a far greater statement of intent. It is crucial that the Government comes forward with the regulatory aim for zero carbon for non-domestic buildings at the earliest opportunity.

20. The 2008 Budget allocation for Defra saw a significant reduction in the money available for business support for resource efficiency. WRAP's budget was cut by nearly a third. Envirowise by 55 per cent—from £22 million to £9.4 million. The National Industrial Symbiosis Programme (NISP) budget was cut by 42 per cent.

21. The Government's report "Building a Low Carbon Economy" included a commitment to longer-term, better-resourced business support programmes on resource efficiency. In the report the Government highlighted that work is now underway to provide indicative allocations for business support in 2009–10 and 2010–11 as soon as possible. Much of the previous funding was derived from Landfill Tax revenues, which when introduced were to be revenue-neutral. Despite increasing income through annual increases in landfill tax rate, the transparency of this revenue neutrality has been lost through the revenues now being absorbed into overall Treasury pot. Hypothecation of a proportion of the landfill tax sent a strong signal to industry that waste must be reduced. Following the announcement of further increases to the Landfill Tax, EIC believe that the Government must restore landfill tax revenue neutrality and, at the very least, reverse the funding cuts made in 2008.

22. EIC has consistently argued that the current regulatory regime for the Periodic Review creates a "boom and bust" financial climate for the supply chain serving the water industry in the UK as capital expenditure tends to be concentrated towards the end of the five year period. This situation leads to financial and managerial inefficiencies and instabilities in the supply chain and ultimately leads to higher costs for consumers.

23. A consequence has been the migration of skilled resources out of this sector over the years to more stable sectors, where job security is better, resource management is easier and long-term planning can be better achieved, creating a severe and worsening skills shortage.

24. Above all, it is essential to state clearly, and to signal in practice, the Government's intention to pursue this agenda consistently over time. The green economy agenda cannot be an agenda simply in response to the recession, or simply as part of the run-up to the Copenhagen meeting on climate change. It has to be seen as central to a long-run shift in the structure of the UK and other economies, in response to environmental challenges that are similarly long-run in nature. The Climate Change Act is an important step forward in establishing this sort of approach. The green jobs and skills agenda is an essential way of taking it further.

30 May 2009

Witnesses: Mr Adrian Wilkes, Chief Executive, and Mr Danny Stevens, Policy Director, Environmental Industries Commission (EIC), gave evidence.

Q176 Chairman: Good morning and welcome to the Committee. We are delighted to see you both here and I am sorry that we are running a few minutes late. Perhaps I could kick off with a fairly general question and, if you want to make a general statement, it might give you a chance to do so. You said that the fiscal stimulus in the Budget this year is too small to develop the low carbon economy in the way the Stern Report indicated was possible and indeed necessary and as required by the Government's own emissions targets and the recommendations of the Committee on Climate Change. If it is too small, what is the amount of funding you think the Government should now be trying to inject into this?

Mr Wilkes: Of course, there are varying suggestions. The TUC, prior to the Budget, suggested £25 billion, the Sustainable Development Commission suggested £30 billion and then, in the further analysis, the Sustainable Development Commission

said that if we were to match our international competitors—and I think that this is probably the key analysis—then it should be £45 billion. Underlining my response anyway, the key point that I would like to make is that we are looking at a huge market already, according to the British government figures, £3 trillion worth globally. That is a lot of jobs and that is a big export market for certain countries. Germany is the world export leader; it exports £50 billion worth of exports to our £10 billion and that £40 billion gap in exports reinforces my underlining point that it is a big market and there are many countries racing to grab a large share of it and we need here in the UK to ensure that we are at the front of it. If governments are putting stimulus money in through grants and other investments to support their domestic environmental industries, then they are going to get a head start and it is well known in this industry, and probably in other industries as well, that if you create an early home market, you get

first mover advantage. I would plump for the £45 billion figure because we have to compete with our international competitors.

Q177 Chairman: And that is primarily because of what other countries are doing?

Mr Wilkes: That is the basis of my analysis, yes. Our suggestions prior to the Budget were for £10 billion on the basis that that was the amount of VAT unspent just as we were running into the Budget—thinking that it might be better rather than to encourage a bit of consumerism in the High Street that we invested heavily in the British environmental industry.

Q178 Chairman: Which other countries do you think are doing particularly well?

Mr Wilkes: Only yesterday, the *FT* reported that South Korea is going to spend \$85 billion on the green industries. The Obama stimulus, not the Budget but the big stimulus of about \$800 billion, over £100 billion of that was for environmental projects or “green jobs” and Germany obviously and Japan are talking about plans. The HSBC have done a very interesting analysis of various green stimulus packages around the world, including China. I remember Korean industrialists came over to visit our industry 15 years ago to see what our industry had to offer and they were clearly looking long term and seeing big opportunities and they were trying to learn about new technologies in this sector and now they are backing up any knowledge that they have or gleaned with a big stimulus.

Q179 Chairman: To the extent that there is a global move towards green jobs, are you suggesting that Britain’s competitive position vis-à-vis the countries you mentioned will now be less strong than it might be?

Mr Wilkes: Yes.

Mr Stevens: Just to put those figures into context, following the Budget, the HSBC report to which Adrian referred concluded that the percentage of the UK stimulus package that went into environmental industries, the green stimulus, amounted to 10.6 per cent of our overall stimulus package which compares to China with 34 per cent, South Korea with 18.5 per cent and France at 21.2 per cent. Prior to the Budget, Stern recommended that 20 per cent of all stimulus packages should be focused on the environmental industry. Also, to put it in its context of GDP the UN has recommended that one per cent annually of GDP is spent on the environmental industries and the move towards a low carbon economy. The £1.4 billion of new money that was announced in the Budget, equates to 0.07 per cent of UK GDP and, if you factor in the money that has been enabled through the Budget through private sector investment, it still only comes to 0.7 per cent of GDP. The answer to your specific question is, yes, the UK will fall behind—it comes back to the first mover advantage—and, unless the UK actually gets to these markets first and stimulates its innovation and

skills and new industries across the environmental sector, not just low carbon, other countries will do so first and get a share of that £3 trillion market.

Q180 Chairman: Let us hope that we get closer to that target than the one for overseas aid which we have been in breach of for a long time. Is it possible to have like-for-like comparisons here? Different countries may interpret what consists of a stimulus which is aimed to create green jobs in slightly different ways, may they not?

Mr Wilkes: I think that that is an argument which some people in government have made and it came up in the parliamentary question a few months ago from Angela Eagle when she was the Treasury Minister arguing that actually between the years 2008–09 and 2010–11, the three financial years, ie the period in the Comprehensive Spending Review, the British Government were spending £50 billion in supporting that or spending and supporting that amount of investment, but £7.6 billion was in electricity distribution infrastructure and very little at the moment I understand from the renewable industry is actually given to renewable energies. You have £23 billion, that is almost half of that £50 billion amount, in public transport. These figures are very confusing but I think that it is undoubtedly true that our Budget, and the Pre-Budget Report’s stimulus of £535 million, are inadequate in terms of our competitive position comparable with other countries and what their governments are doing.

Q181 Joan Walley: The Budget 2009 and the UK announced that there is going to be a new capital fund, something like £4 billion, from the European Investment Bank. Are the companies that are meant to be benefiting from that, the renewable energy projects and businesses, actually able to access it? Is it there? Are they taking that money and using it? How accessible is it?

Mr Stevens: It is very difficult to say how much of that £4 billion through the European Investment Bank for energy efficiency and renewable energies is being taken up by UK companies.

Q182 Joan Walley: Why is that?

Mr Stevens: As I understand it, the EIB has two mechanisms for loans for European companies. One is direct loans and the second is through intermediated loans through the banks. The first is direct loans and the projects that the loans are eligible for have to be over €25 million euros which is rather a large amount of money when you consider that 90 per cent of the UK environmental market is made up by SMEs. It is very difficult for them to access that level of funding. With the intermediated loans, it is a question of how that is actually enforced through the banks. I am not a banker and would not have a definite answer on how you actually achieve that, but there is certainly a question about how that level of funding through the banks, is actually enforced. Also, I know that the Budget announced that UK companies would have access to EIB money but, from research, I do not think—and I might be corrected on this—that it was actually a

new announcement. The European Investment Bank, as I understand it, has had that level of funding for energy efficiency and renewable energies since 2007 and, across the EU and across all projects, the UK actually in 2008 only received 6.44 per cent of European Investment Bank loans. When you measure that against the €4 billion euros, it works out at something like €257.6 million. So, whilst the UK companies obviously have access to that, the actual percentage and the actual level of funding might be open to question.

Q183 Dr Turner: Do you know if any of your members have actually managed to access loans in that fund?

Mr Stevens: I am not aware of any.

Mr Wilkes: No.

Q184 Dr Turner: My information is that it is still in negotiation.

Mr Wilkes: Yes, that is true.

Q185 Dr Turner: What signal would you like to see the Government giving in order to encourage investment in low carbon industries? Should they give a clear signal about the future policies and financial investments that will underpin the transition to a low carbon economy?

Mr Wilkes: I think that your question hits the nail on the head. That is the most important requirement if we are going to grow the British environmental industry. Over the years, obviously I have talked to a lot of companies in the environmental industry but I have also talked to a lot of people in the financial sector who are interested in investing in this area, and of course we are going to need massive amounts of investment to assist or underpin this transition from the current economic model to a low carbon resource efficient economy in the future. What they all say is that we need certainty about the policy framework and where we are going. A nice phrase that came out of the Commission on Environmental Markets and Economic Performance Summit was “long, loud and legal”. Not only do the companies themselves want to invest, so the investors too require that, the financial community too. We did a study for many years—and there is nothing to indicate that it is not as valid as it was ten years ago when we did it as it is today—where we asked people who were spending on research and development as well, innovating, and again their message was, unless we have the policy and certainty companies will not invest.

Q186 Mr Turner: In terms of fiscal signals to the market, your industries require presumably different signals to the sort of signals that the group of witnesses that will be following you need. What sort of specific signals would you look for in your industries?

Mr Wilkes: I will let Danny come in with a couple of important specifics but you are right. There is a very broad definition for the environmental industry and our focus over the last 15 years of existence has been on the environmental technology sector, and then

there is a very significant and growing renewable sector. We do not speak for the renewable energy sector and they obviously will tell you how government policy needs to be informed for the future there. In our area, we have not, funnily enough, spent a lot of time asking for government money; we have spent most of the time talking about the regulatory framework in order to tackle the market failure because, as we all know, we do not price environmental pollution into our economic decisions. So, we have been lobbying on all sorts of issues—Danny will talk in a second about a couple of key points—such as on water pollution control, on air pollution control and, in all those areas, our industry seeks regulatory certainty and a long time frame. Interestingly enough in terms of that certainty and long time frame, the people who are currently polluting and are going to have to reduce their pollution also want that and they want a set of rules to know where they have to come. I was at a dinner only the other night when the Chairman of Thames Water, for example, said that. All these government commissions, the Commission on Environmental Markets and Economic Performance and the Innovation and Growth Team Initiative that preceded that, all say the same. Danny has a few specifics which I think you might be interested in.

Mr Stevens: It comes back to the same point that Adrian just mentioned as well, the importance of a long-term policy framework. It must be ambitious and enforceable. A good example to which I refer in terms of that sort of framework is the zero carbon homes target for 2016 and the zero carbon non-domestic buildings ambition for 2019. I think that gives a very clear signal for house builders and for the parts of our industry that will be supplying to house builders to actually achieve those targets. It is a good example of government policy making that has set a long-term very ambitious target. It is a target that, if it is actually achieved, will make the UK a leader in terms of delivering zero carbon homes. It will be enforceable through the building regulations and it will actually be achieved through a trajectory that will get us there in incremental steps which I think provides the kind of certainty that both sides of the industry, if you like, the house builders and our industry, need to invest in these new ways of building homes. Another example—and I think there is a question mark over how ambitious it is and whether it actually contributes to a sufficient level of emissions reductions for meeting our 2020 targets—is the Carbon Reduction Commitment which again is a good example. There is an introductory phase which will kick off next year and it is about reducing emissions for the non-energy intensive sector, ie the non-EU ETS sectors. So, we will have an introductory phase for three years for the sectors covered to get used to what they need to be doing under the scheme and then, from 2013, we have a seven-year phase that will have a clear cap on emissions that will be recommended by the Committee on Climate Change and set by the Government. That again is a very clear, long-term enforceable signal to the industry to encourage investment in new energy efficient technologies.

7 July 2009 Mr Adrian Wilkes and Mr Danny Stevens

Q187 Dr Turner: One of the other elements of uncertainty which worries investors is planning. The Government have changed the planning consent regime in a way which would be expected to benefit low carbon industries, but that was done in the face of a certain amount of opposition and it has been put to us that there is a fear amongst your industry that a government of a different colour might change the planning regime to its advantage. Does that worry you?

Mr Wilkes: I think this is more a question for the grand projects associated with the renewable energy industry.

Q188 Dr Turner: It is any strategic project.

Mr Wilkes: Yes, but our members on the whole are going in and providing quite small-scale pollution control solutions.

Q189 Dr Turner: It might be a sewage farm.

Mr Stevens: In terms of the Planning Act and streamlining it, it is the nationally significant infrastructure I assume you are referring to which will largely impact upon the renewable energy sector and nuclear power sector, neither of which EIC represents. The one sector that it does cover that EIC represents is the hazardous waste treatment, but the size of the plant that has to be considered is a nationally significant infrastructure project is enormous. So, in terms of impact on the parts of our industry, that streamlining of the planning legislation impact is very, very small. I guess—and I do not have a definitive answer on how you achieve this—it would be through, for example, the RDAs to help streamline planning, for example, build sufficient waste treatment facilities. We have the landfill tax for example which is a positive announcement which came out before the Budget which should divert waste away from landfill, but that needs to be accompanied by the ability for parts of our industry to develop the alternative ways of treating that waste.

Q190 Dr Turner: Another great concern for low carbon industries is the price of carbon. How important do you think the level of the carbon price is towards the transition to a low carbon economy?

Mr Wilkes: It is absolutely vital and it is encouraging that there is now a debate about whether there should be a floor possibly through a carbon tax.

Q191 Dr Turner: Is that a mechanism that you would like to see in order to guarantee a minimum carbon price?

Mr Wilkes: Yes.

Q192 Dr Turner: What do you think that price might be to be effective? I know that it is a \$64,000 question that no one will give an answer to, but have a stab.

Mr Wilkes: I very much regret that amongst the reports I brought in I did not bring a report, but I will make sure that the Committee and yourself, Dr Turner, are informed about it later,¹ that I was

reading over the weekend and that, from recollection—and I do not want to be quoted until I have found the report and informed you about it—was looking at what investors require to be putting their money into low carbon investments. I think we are looking at figures above a carbon price of €50 per tonne. May I be allowed to come back because I am citing other expert opinion?²

Q193 Dr Turner: What about relative models?

Mr Stevens: The scenario in the Committee on Climate Change report in December is £40 per tonne of carbon dioxide by 2020.

Q194 Dr Turner: Pounds or euros?

Mr Stevens: Pounds.

Q195 Chairman: If the price of carbon is very important, and I think people can understand why that is the case, should there be a role for carbon taxation?

Mr Wilkes: Clearly, we have put in place a carbon trading scheme that has big loopholes and allows too much pollution, so the price of carbon has until now been so low as to worry investors and in fact not worry them but scare them away from investment. The idea of a carbon tax as a floor is, I think, important and we would endorse that. But I would like to take my answer one step further and suggest that, while we are taxing pollution, we should be using the revenues, and I hope all governments of every colour will start asking the Treasury whether this is one area where we should have hypothecation so that we channel back these taxes to support the low carbon investments that we were talking about at the beginning of your questioning, which are going to be very substantial. If we are going to endorse a figure from the Sustainable Development Commission of £45 billion, that is a lot of money obviously for the country. The auctioning of allowances, which was agreed by Heads of State in December for the period after 2012, was inadequate; I think it gives us until 2027 before there is 100 per cent auctioning. If they brought that forward—I know there were other Member States around Europe who were reluctant and maybe we are more progressive here in the UK—then you would be generating a lot of money and at the same time you would be encouraging the problem holder, the polluter, to be taking these issues really seriously themselves and investing themselves in energy efficiency processes.

Q196 Chairman: Generally speaking, in terms of trying to stimulate green jobs and the Government are going to grow them, is there a bigger role for green taxation? We have been concerned at the way in which green taxes have become a diminishing element of our overall tax structure. Do you think that we could significantly enhance the stimulus for green jobs with a bit more imaginative use of the tax system?

¹ Paul Ekins, *Resource Productivity, Environmental Tax Reform and Sustainable Growth in Europe*, October 2009

² Paul Ekins, *Resource Productivity, Environmental Tax Reform and Sustainable Growth in Europe*, October 2009

Mr Wilkes: Undoubtedly and another piece of weekend reading I had was a new report that Professor Paul Ekins of King's College is publishing in the next few days or indeed the next week at an international conference that looks at environmental taxes and comes to the conclusion that they are slightly positive on employment but they definitely help drive the environmental industry, they drive cost savings and they drive innovation. Underlying everything of course is a choice here about how to correct the market failure and you either do that by regulation, a regulatory standard, or a tax. The advantages of tax is a direct price signal and of course you get revenue that you could then recycle, and that is why I go back to the point that the Treasury do need to think again about the rule that they do not hypothecate taxes. I think transitions to low carbon economy are so vital and essential that we have to have some fresh thinking in all departments.

Mr Stevens: I think that it is important that the Treasury starts to think of new and innovative ways of using the tax system and the regulatory system as well to drive the investment in these industries and move towards a low carbon economy. We are quite clear that, in the current economic climate, we are unlikely to see in the Pre-Budget Report or the Budget next year, another green stimulus as the state of the public finances make that fairly unlikely, so I think that we need to be thinking about new and innovative ways of actually either raising that money and/or driving the necessary changes.

Q197 Mr Chaytor: You gave us a number of figures earlier about stimulus packages and the proportion of GDP allocated to green jobs, but realistically what is your estimate of the number of green jobs in the economy now and the numbers that could be created if your recommendation of the right figure as part of our stimulus package were open to you?

Mr Wilkes: The right amount of stimulus and the right amount of green taxation; as a whole mix of instruments will be needed to drive us towards a low carbon economy. Of course, that is a difficult question to answer because it goes back to my very first point which is, are we, the UK, going to compete with Germany, Japan, America, Korea, China, et cetera, et cetera? That is a very substantial variable because the market in the UK is £100 billion to date according to the latest British government figures and the global market is £3 trillion, so we are just a tiny part of that big market and it depends on how much we grab of that big market. I have no reason to dispute the figures that came out from an expert study that BERR, as it was then, published in February which showed 800,000 jobs currently in the UK³ and that is right across the spectrum—so that is water pollution control and waste management, renewable energies and then all these low carbon technologies and services like carbon finance and sustainable buildings. The prediction—and that is where I am not so sure—was that we could create another 400,000 jobs over the next five

years, but that will depend on a whole mix of things: the stimulus, the long-term policy framework certainty and the use of things like fiscal incentives to drive investment.

Mr Stevens: If I may use an example in terms of the money invested in job creation and the potential from that, the energy efficiency centre. The United States Apollo initiative estimated that, for every \$1 million invested in energy efficient, 21.5 new jobs would be created.

Q198 Mr Chaytor: So, this figure of 400,000 over five years is realistic but subject to a set of policies that are not yet in place.

Mr Wilkes: That is correct.

Q199 Mr Chaytor: Of the policies that are not yet in place, which do you think are the most important to achieve that estimate of 400,000 additional jobs over five years?

Mr Stevens: Coming back to my previous example, I think that zero carbon homes or building more broadly, energy efficiency in buildings, is potentially a huge, new area for market growth contributing to GDP and job creation as well. The BERR study that Adrian referred to estimated that, in terms of actual growth potential, and this translates into employment creation as well, for various parts of the broader environmental industry, behind wind and solar came building technologies as the third sector with the largest growth potential and yet worryingly it is not highlighted as a priority in the Government's forthcoming Low Carbon Industrial Strategy which we are expecting this month.

Q200 Mr Chaytor: One of the things that bewilders me to some extent—and I am not sure if this BERR report to which you refer deals with this—is the definition of a green job. Some activities are self-evident but others not so. Is the production line worker building a hybrid vehicle for Honda or Toyota working in a green job? Is somebody working to construct a new nuclear power station working in a green job? Do you have a working definition or did the BERR report include a working definition or is there somewhere a satisfactory and comprehensive working definition of what constitutes a green job?

Mr Wilkes: Just before we launched EIC 14 years ago, I undertook some very substantial research and part of that was about actually defining what the environmental industry is and therefore what is a green job. The underlying problem is that governments around the world when collecting industry statistics do not collect sufficient statistics in this area. There is not an internationally agreed definition of what is the environmental industry and therefore a green job. Certainly, the three examples you gave—and I am looking at the BERR report by the consultancy Innovas—range from wind and building technologies through waste management, water and waste, water treatment, energy management, air pollution control, noise and

³ *Note by Witness:* There are, in fact, 880,000 jobs in the UK at present, not 800,000 as stated during the evidence session.

vibration control. It does not have nuclear on here but that is often classed, in my personal view rather strangely, as a green industry.

Mr Stevens: The BERR report, in terms of the definition that it used for green jobs of which it estimated there are over 800,000 in the UK,⁴ did include the specialist part of the industry as in the sorts of companies that we represent and the manufacturing side of the wider environmental industry and the low carbon and the renewable industry, but it also included the supply chain as well within that. So, it could have included for example a company producing motors that would go into a wind farm, a big turbine. The definition that they used was very broad and if I remember rightly, the criteria that it used for defining the jobs within the company in the wider supply chain was if 20 per cent of its turnover was actually generated through supplying to a wider—

Q201 Mr Chaytor: Twenty per cent?

Mr Stevens: I think that it was 20 per cent.

Q202 Mr Chaytor: So, 80 per cent of the turnover of a company can be absolutely locked into fossil fuels but if 20 per cent of turnover is linked into sustainable energies, it is a green job.

Mr Stevens: Yes.⁵

Q203 Mr Chaytor: That is a pretty generous definition of a green job.

Mr Wilkes: Yes, although we cannot give you a precise answer because a precise answer does not exist at the moment. One of our early recommendations, which has never been taken up, is for the politicians to actually come up, in association with their international counterparts or certainly European counterparts, with a definition because this links into a very important point: how do politicians sell to the general public this huge economic transition that we are going to have to go through? Surely, the biggest argument to be made is that there are going to be hundreds of thousands in this country of new green jobs. If you go to the Obama Whitehouse website, on the home page is the number of green jobs he has created. He has bought into the fact that this is a way of connecting to the public rather than it being all gloom and doom. So, it is amazing that we do not have precise figures to answer your question. Relating back to some of the earlier questions, is the UK going to create a lot of jobs? Is it going to succeed in the international market? Well, equally we need to ask what studies have been done, what serious studies, about where the UK has comparative advantage? Interestingly, there was a very good report out from the Carbon Trust looking at six renewable energy technologies last week looking at that aspect.⁶ But, when you look at the broad range of technologies in this area, why are government departments not doing so? We

recently saw this when parliamentary questions were asked by interested MPs of government departments about what studies have been done and where the UK has the strength in these growing markets and it was a very anodyne bland answer that those studies have not been done in any detail. We would urge the Government to move rapidly to do that.

Q204 Mr Chaytor: It may be a useful recommendation for our Committee report.

Mr Stevens: Also, that recommendation is in the context of our proposals for the Low Carbon Industrial Strategy as well. The purpose of the strategy is that the UK is supposed to have identified the sectors in which it has comparative advantage, the sectors of the low carbon industry that should support it has not only this great potential within the UK but also have export potential for UK businesses. I am still unclear on how they have reached that decision on some of the priority sectors, but based on the BERR study that came out in March, one of the Government's priority sectors is the carbon capture and storage sector, that it should be supporting development of UK demonstration projects, but its own studies show that this sector is significantly behind in terms of market growth potential in contrast to building technologies and energy and carbon management for example. Energy and carbon management seems at the moment to be excluded from that low carbon strategy from government support and building technologies is not identified as a priority either.

Mr Wilkes: If I may just crave your indulgence and add one final thing to that. There is development of the Low Carbon Industrial Strategy which we welcome in principle; we like the idea of government getting behind certain key industries of the future and this is one industry—and we have been saying this for 14 years—but the strategy is likely to be quite narrow in its focus and vision and we should be talking about the whole range of environmental technologies. That world-wide market is not just about a few select technologies that this new Government strategy is going to focus on. So, we are going to be potentially, though we will wait until the publication of the strategy, missing out on some vital opportunities in the area of traditional methods of air pollution control, water pollution control and waste management for instance.

Q205 Martin Horwood: May I ask a quick follow-up question to that. What practical difference to your industries do you think extending the Low Carbon Industrial Strategy to your kind of sectors would make? I think it is a good point you make that there is more to life than carbon, but what practical difference do you think it would make?

Mr Wilkes: I believe a substantial one. When we launched in 1995, we carried out all this research about what governments around the world were doing and one government in particular stood out and that was the Clinton/Gore administration post-1992 in America. What they did right up front in the first State of the Union address was to say that the environmental industry—and then climate change

⁴ *Note by Witness:* There are in fact, 880,000 jobs in the UK, not 800,000, as stated during the evidence session.

⁵ *Note by Witness:* Yes, according to the BERR report.

⁶ <http://www.carbontrust.co.uk/publications/publicationdetail?productid=CTC752>

was a small concern, they were talking about more traditional parts which are still very important—look at the water resource problem in China for instance. How many billions are they going to spend? The UK alone is going to spend in excess of £15 billion over the next five years to clean up our rivers to comply with the Water Framework Directive. Clinton and Gore saw the opportunity and they said, right, we are going to pull together all bits of government to support this industry and they put in place an environmental industry strategy and they put in place a co-ordinating committee or forum, or whatever they called it, which brought together all the different bits of government to look at, how do we support exports in this area? How do we support innovation? What sort of regulatory framework do we need? Do we bring in the aid programmes? They used third world aid to help drive exports of their water pollution control technologies, for instance. They put in place a comprehensive strategy to promote their environmental industry and, by the time they left office, it was the world leader in terms of exports which were very substantial and in terms of jobs—I think they had something like 3,000,000 jobs in 1999, and we are only on 800,000.⁷

Q206 Martin Horwood: How would you characterise the Government's current strategy for environmental industries outside of that low carbon industry?

Mr Wilkes: There is no strategy, sadly. The Low Carbon Industrial Strategy needs to be brought into a broad environmental industry strategy. It is interesting that the BERR industry analysis talks about the low carbon and environmental goods and services sector, but now we are only getting a low carbon strategy. They are missing a trick. It is far too narrow.

Q207 Martin Horwood: And you do not think that normal Cabinet Government processes have been sufficient for this?

Mr Wilkes: I do not understand why they have narrowed the focus when the opportunity is so big. I can only speculate as to what explains this narrow focus.

Q208 Martin Horwood: Maybe because they have identified carbon as the single biggest environmental challenge bar none and they wanted to have some focus, perhaps.

Mr Wilkes: Yes, but resource use, which is linked to air pollution control, water pollution control, waste management, are, on their own figures, all big business opportunities and they are of course important environmental issues.

Q209 Martin Horwood: Turning to the private sector, we have seen a number of quite high-profile businesses that have looked at investing in so-called green jobs in the past actually reducing their interests now. For example, BP and Shell have cut back

investment. Do you think that there are particular key barriers in terms of supply and in terms of financial incentives or the regulatory regime that are making this situation worse? Clearly, the broader economic situation is part of it but are there regulatory issues that are making this situation worse?

Mr Wilkes: I think in the two examples you cited, that is indeed the case, because I think that the companies involved said that there is a much more generous tax incentives framework over in America—that had existed under Bush and it has become even more generous under the Obama stimulus package. When you look at the detail of the US stimulus, there are all sorts of fiscal tax breaks for companies and for individual shareholders or investors and then there are some bonds that they have been putting in place to drive investment. So, we are certainly not matching that level of support.

Q210 Martin Horwood: It is just about financial incentives or are there wider regulatory issues?

Mr Wilkes: Absolutely. If you have an environmental problem and you have to decide what the best tool is. Sometimes it will be taxes and sometimes it will be regulatory standards, and behind all that you want to be encouraging investment and certainly many, many countries around the world encourage that investment with fiscal incentives. Some of that involves recycling green tax revenue.

Mr Stevens: There are also other mechanisms for enabling that private sector investment. One is obviously the carbon emission reduction target for example for energy supplies to achieve a certain level of carbon emission reduction and the renewable obligation, a sector which EIC does not represent. There are those various regulatory mechanisms for actually trying to enable private sector investment. Again, it comes back to this key point about the level of ambition within that regulatory framework for enabling the private sector investment which still is not there. While the Carbon Emission Reduction Target for example, the Prime Minister announced in September that the target under the scheme would increase by 20 per cent. However, that is a 20 per cent increase on a target that was inadequate anyway and the consultation that came out at the beginning of this year on the legislation that would implement that increase actually now allows energy suppliers to achieve part of their targets by simply providing home energy advice to householders. That obviously does not achieve any guaranteed emission reduction within the home and I do not know whether it means sticking a leaflet in with our electricity bills and whether that will actually count for achieving part of the targets. This comes back to the general points that we have been making about ensuring that these policy mechanisms and these regulatory frameworks are ambitious enough to drive investment and that comes down not only to the kind of demand side of actually pure regulation but also the framework within which the private sector investment is enabled as well.

⁷ *Note by Witness:* The figure is, in fact, 880,000, not 800,000, as stated during the evidence session.

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Q211 Martin Horwood: Given that the sort of things you are talking about, Carbon Reduction Commitment and renewables obligation, already exist, what would be top of your shopping list in terms of either removing barriers or adding to an existing incentive?

Mr Wilkes: A general incentive for investors in this area, undoubtedly. That is a fiscal measure. We have talked about the importance of having an overarching strategy towards investment and government action to be focused in one direction and then—I am sorry to break it down—in each area there are specific regulatory proposals that we would like to see put in place. Danny has just talked about the Carbon Reduction Commitment and I mentioned the Water Framework Directive earlier. All around the world there is a problem with water resources. China has a massive problem with polluted rivers and it is going to spend a lot of money over the next decade or two on cleaning those up. Where is it going to get those technologies from? Some might come from this country and many might come from America, France and Germany because they are driving higher standards in their own countries which is creating the demand for innovation and the demand for products and creating a home market from which to export. The Water Framework Directive is now being implemented in this country. But the figures I have seen from the Environment Agency on what standards we can achieve in 2015 are quite unambitious.

Q212 Martin Horwood: Do you think that a large-scale public works programme could form part of the package if it also tackled infrastructure blockages to renewable or to environmentally friendly industries' development?

Mr Wilkes: Yes, absolutely, particularly at this point in time when we have the problem of unemployment and we have this huge problem of how we are going to adjust to climate change and transition to a low carbon economy. In our submissions before the Budget we brought forward proposals for a Green New Deal of £10 billion, most of which was in terms of energy efficiency in central housing and in schools and in hospitals where there is a significant amount of retrofitting. That is a low-hanging fruit, which would not be a waste of money because it would not only create jobs but save energy levels and reduce carbon. It is a win/win situation.

Mr Stevens: I would like to make one final point on the shopping list of requests in terms of environmental policy and one that has not been mentioned but which would be pretty high on my list would be urgent improvements to air quality within the UK. At the moment, we are a long way behind meeting EU targets under the Ambient Air Quality Directive and the National Emissions Ceilings Directive on particulate matter NO₂ and NO_x emissions which are incredibly damaging to public health. On average, every person in the UK loses seven to eight months of their life as a result of poor air quality and it is something that seems to have slipped down the agenda—I guess in line with the

emphasis on low carbon and climate change. Certainly, urgent improvements to air quality through tracking road transport would be very high on my shopping list.

Q213 Chairman: Many of the measures to improve air quality would also be helpful in reducing greenhouse gas emissions?

Mr Stevens: Yes, that is true. There is an increasing body of evidence emerging now that suggests that black carbon particulate matter coming out of the back of heavy-duty lorries for example, is a significant contributor to climate change. This evidence is just emerging at the moment and we are developing our thinking on it and trying to work our way through the science of it to establish how much of a contributor it is. It is particularly from the US that scientific evidence is suggesting that the black carbon particulate matter is actually not only a public health and an air quality issue but also a climate change one as well.

Q214 Joan Walley: I would like to ask about your members and how they go about training their workforce in respect of the skills that are needed for the green jobs.

Mr Wilkes: I know part of this inquiry is focused on skills and, clearly, if we are going to create all these extra green jobs people are going to have to be trained up, but, interestingly, we have not heard the message from our members that there is a big problem here.

Q215 Joan Walley: How do they train people?

Mr Wilkes: It depends. There will be people who test dirty water samples and dirty land samples, so they will be qualified through university, and then you have people who are installing equipment, which is more manual labour, so there is a range of skills in this area. I do not have a precise answer as to what individual companies are doing.

Q216 Joan Walley: You do not know what skills training your member companies do.

Mr Wilkes: No. It has not been an issue, in the sense that EIC has been asked to lobby about it.

Q217 Joan Walley: The evidence we have had up until now from the CBC and CEMEP has suggested that there is a skills gap, so it is interesting that your members have not had identified one.

Mr Wilkes: No, they have not identified one, but if we look ahead at the rapid transition we are undertaking, I can understand why those organisations suggest that there will be a skills gap in the future.

Q218 Joan Walley: But it is not the experience of your members.

Mr Wilkes: Not one that they have relayed to us up to date, no.

Mr Stevens: In terms of raising policy issues within our working group structure, skills has not been, as Adrian says, one that has been highlighted on a regular basis, but in terms of training up new skills,

something that does get highlighted quite regularly, and in the context of providing the policy and regulatory framework, is retaining skills in the sector. Adrian will be able to tell you a little bit more about this, but certainly in the water sector, in the way that the periodic review process is set up, the five-yearly boom and bust cycle, if you like, for investment in the sector has significant implications in terms of retaining skills in the sector. In the first year of investment, as they are scaling up and increasing the level of investment, obviously there is lots of training and there are lots of new jobs. Then as you reach the end of that five-year period it all tails off, and the jobs and skills disappear out of the industry only to start again in the next five-year review process. Land remediation is another one that has been highlighted. For obvious reasons, at the moment the construction industry and the brown-field development sector is taking a significant hit, and that not only has implications for the market growth of that sector but it is retaining the skills within those sectors as well.

Q219 Joan Walley: In respect of the green skills agenda, where would you say the leadership is? Who is leading on the green skills agenda? You just mentioned two industries, water and land. Where? What? How? Is it going to be possible to make sure that the skills that are needed are there? Where is the leadership meant to be?

Mr Wilkes: I am not sure we currently see any leadership. Obviously, when the Government announced just over a year ago, with a high level launch by Gordon Brown and a range of Cabinet ministers, the concept of the Low Carbon Industrial Strategy, they had the then Secretary of State for Skills on the platform and he talked about the skills challenge. I think there is a future skills challenge. Then there were initiatives announced. There was going to be a national skills council for environmental industries.

Q220 Joan Walley: I thought one of your suggestions was that there should be a national skills council for environmental industries.

Mr Wilkes: Yes, that is right. It came out of the commitment the Government made over a year ago but nothing has happened. There does not seem to be any leadership within government and this kind of thing will be increasingly important in the coming years. We understand that in the forthcoming Low Carbon Industrial Strategy there will be some new announcements.

Mr Stevens: Coming back to the Skills Councils, that was a government commitment made in their response to the CEMEP report. It was a commitment to establish a new environmental

industry skills council or skills academy which we understand is not now happening. I do not know quite what there'll be obviously, but we are expecting announcements in terms of the low carbon skills agenda and how the government is going to take that forward as part of the Low Carbon Strategy. Last week, as part of the report *Building Britain's Future* that Gordon Brown published, there was a commitment to publishing a general national skills strategy, and last April the UK Commission on Employment and Skills was established. But these are emerging broad, economy-wide strategies for skills within the UK economy. The crucial thing, I think, is making sure that the environmental sustainability agenda is integrated into all of those areas. There are currently 25 sector skills councils and it is crucial that environmental sustainability is integrated into all 25 probably. This is not only a question of improving the skills base in the low carbon industry and the wider environmental industry, but it is also a question of building up the skills base within the wider economy to understanding sustainability. Whether that is through procurement processes, for example, the whole environmental agenda needs to be integrated into all aspects of skills training.

Q221 Joan Walley: Am I right that you suggest a national skills council for environmental industries but are saying that it needs to be integrated right the way across the sector skills programme that there is? Is there not a tension between those two things? You either get it integrated right the way across the board, that is all skills across all sector skills councils, or you have something which is over and above everything else.

Mr Stevens: I think you need both, because the environmental industry is very broad and there are lots of different sectors within it. We accept the argument that to have a single academy that is able to develop the whole environmental industry skills base—one single academy—is clearly quite difficult, so it would be our suggestion that you have that overarching leadership provided by an environmental industry skills academy which has the responsibility for making sure that the sustainability and environmental agenda is integrated across the existing sector skills councils.

Q222 Chairman: I think we are out of time. Thank you very much for coming in. It has been a very useful discussion from our point of view.

Mr Wilkes: Thank you. We will get that information to you and Dr Turner.⁸

Chairman: Thank you. That would be helpful.

⁸ Paul Erins, *Resource Productivity, Environmental Tax Reform and Sustainable Growth in Europe*, October 2009.

Memorandum submitted by The British Wind Energy Association

1. The British Wind Energy Association (BWEA) is the leading UK trade association in the field of renewable energy, with over 470 corporate members representing the large majority of the wind energy business in this country, both large and small-scale. Wind energy is the fastest-growing renewable technology in the UK, and it will make an increasingly significant contribution to our electricity supplies over the next decade and beyond. BWEA also represents the interests of the emerging wave and tidal stream energy sector, building on its experience in the development of offshore wind. We therefore welcome the opportunity to submit evidence to the Committee on the subject of Green jobs and skills.

2. Most of the subjects being addressed in this inquiry are discussed in BWEA's report *Powering a Green Economy*,³ a response to Government's *Low Carbon Industry Strategy: A Vision* document. We answer some of the specific questions asked by the Committee below, but in general Members are directed to BWEA's report.

3. *The degree to which the Government's long-term policy framework, including environmental regulations, tax changes or new market instruments, will encourage low-carbon investment and increase employment in environmental industries and their associated supply chains.*

4. It cannot be stressed highly enough that the most important factor in making a country a major site for investment in low carbon industry is for there to be a strong, stable domestic market for the goods and services required. This has been the lesson from the wind industry in Denmark, Germany and Spain, where world-leading manufacturing bases have been established on the back of comprehensive policy support for the building of wind power generation. If the market does not exist domestically in the UK, or is considered unstable and risky, then this country will not benefit from the investment that is inevitable if climate change is to be tackled.

5. The UK has had a strong instrument to support renewable electricity production in place since 2002, in the form of the Renewables Obligation (RO). This has been highly successful in encouraging developers of wind projects to bring forward schemes: onshore, 15–20,000MW of projects have been submitted to the planning system in that time. It is not the fault of the RO that more has not been built, and the industry supports its retention in the new, banded form as the key vehicle for delivering our commitments under the 2020 renewable energy targets. In fact, some of the most pressing issues for the renewable energy sector are non-economic barriers such as planning and grid availability. In this context, the Renewable Energy Strategy due for publication in June will be more important than recent stimulus packages, and BWEA awaits its conclusions with some anticipation.

6. The UK is well placed to take the lead in a number of renewable electricity generating technologies, given that this country is well endowed with resources of wind and marine renewable energy. The UK also has advanced capabilities in research and development in these areas, and a long history of activity—for instance, BWEA was established over 30 years ago. This country has a distinguished tradition of heavy electrical engineering and capabilities in manufacturing areas such as aerospace and motor vehicles which could be transferred. The expertise in offshore structures and operations developed in the course of extracting oil and gas from the North Sea is also very relevant.

7. While the technology and businesses associated with large-scale onshore wind are and will most likely remain primarily non-UK-owned, wind at the small and micro scales and offshore offer major opportunities to British business. Given our status as an island nation, the new marine renewable technologies of wave and tidal stream power should also be motors for long-term economic growth. In each of these areas markets are at an early stage of development, with much of the investment to build industries yet to happen. Strong early action therefore holds the promise of taking leadership positions in all of these technologies, repeating the experience of Denmark in the area of onshore wind.

8. The UK is already and will remain for the foreseeable future the largest single market for offshore wind in the world. Once the Round 3 zones have been awarded, there will be nearly 40,000MW of projects in varying stages of development in UK waters, including 565MW of operating capacity, 1,240MW under construction and 3,600MW with consents but not yet being built. BWEA believes that at least 20,000MW is deliverable by 2020, which will be vital if the UK is to meet its targets for both renewable energy and carbon emissions. It is important to note that one of the most important ways to maximise the amount that can be delivered by 2020 is to set out a longer-term vision, to 2030 or beyond, which shows continuing build over a period of 20 years.

9. At 20,000MW in 2020, the UK would constitute half of the total European market for offshore wind, set to be 40,000MW according to the European Wind Energy Association.⁴ This amount of UK capacity would represent an investment of about £50 billion. With a strong home market, UK companies would be well placed to exploit export opportunities to other EU member states, as well as countries such as the US and China, which have indicated that offshore wind is an opportunity they intend to pursue.⁵

³ See <http://www.bwea.com/pdf/publications/Powering%20a%20Green%20Economy.pdf>

⁴ The 40,000MW of offshore wind that EWEA projects for 2020 is a significant part of the 230,000MW of wind power the Association expects to be installed by that date. See http://www.ewea.org/fileadmin/ewea_documents/documents/press_releases/2009/EWEC_Day_1.pdf

⁵ The US Department of the Interior estimates potential of over 1,000GW on the Atlantic coast alone. See <http://www.doi.gov/ocs/slides-At.pdf>

10. The marine renewables of wave and tidal stream are still primarily in the technology development and demonstration phase, but most of the leading companies are either UK owned or based, attracted by the UK's resource, our strong technical base and the investment in the research infrastructure that has already been made. The UK should not be complacent, however: there is a need to step up the commitment of resources to this sector if this leadership position is to be maintained in the face of increasing competition. The Carbon Trust reports that these technologies could provide as much as 15–20% of our electricity, and there is the potential for 2,000–4,000TWh/year of wave energy alone to be generated globally, which would require investment of at least £500 billion.

11. One of the unsung UK business success stories in the renewable energy sector is small and micro wind power. Wind is the only microgeneration technology in which the UK leads, and domestic manufacturers supply 82% of all small wind turbines installed in the UK, a market worth £13.5 million in 2008. The sector is already exporting heavily, with 50% of production sold abroad. In the long term, BWEA estimates that UK companies could secure 20% of a total market of 80m units over the next 20–30 years.

12. As the North Sea reserves of oil and gas are exhausted, there is an opportunity to redeploy the expertise and skills of the offshore hydrocarbon industry to the renewables sector. This is a key transition from the high—to low-carbon economy, building on experience and existing solutions to provide cost-effective renewable energy.

13. *Whether the changes in public spending intended to help tackle the recession will maximise employment opportunities in environmental industries.*

14. The stimulus packages in the Pre-Budget Report and the Budget itself must be judged against the criterion of whether they will ensure a secure, long-term market for renewables. The RO is already in place and successful in stimulating the market for developing renewable generation projects. The measures to award extra support to offshore wind help to unlock the value of the RO for this sector, while underlining Government commitment to a strong market for the technology, which is most welcome. Action announced in the Budget on accessing funding from the European Investment Bank for onshore wind projects similarly leverages the value of the RO. If these initiatives are successful, they should be exactly the kind of measure required.

15. For the purposes of building new industries, the Budget announced new funding of £405 million, split across a number of sectors, including renewable energy. We await further detail on how this money will be spent, but there are useful indications in Government's paper *Investing in a Low Carbon Britain*, published the day after the Budget. In particular, BWEA welcomes the focus on establishing a manufacturing “hub” port for offshore wind. We note, however, that the wave and tidal stream sectors need a long-term path from the Marine Renewables Deployment Fund to the Renewables Obligation at 2ROC/MWh, which currently does not exist: the new Budget funding will be aimed at filling gaps in the innovation process up to the MRDF. This is an omission that will need to be addressed sooner rather than later.

16. BWEA would also welcome some additional targeted funding to overcome some key barriers. In particular, we believe that Government needs to make resources available to bring forward technical solutions to the problems of wind turbine interference with radar signals: the industry has volunteered £3.2 million in difficult economic circumstances, while Government departments have not committed funds, with the honourable exception of the Ministry of Defence. Approximately £10 million of additional funding is required, which will unlock the 4.5GW of wind projects in the planning system that are currently blocked by these concerns. In addition, a small fund of £2 million would be extremely useful in supporting new small wind products through certification processes. This would ensure UK companies continue to be world leaders in the field, tiding them over to the point where a market supported by the new feed-in tariff allows them to justify the expense of certification. If money from the £405 million fund is directed to these two areas, it will be money well spent.

17. *The economic and social benefits of planned green investments and the extent to which the changes in spending will contribute to sustainable development and environmental protection.*

18. The wind generation capacity that is required by 2020 represents investment of approximately £60 billion. The extent to which the UK benefits from the direct capital investment depends on how successful Government is in creating an environment in which manufacturers wish to invest in UK capacity. We are therefore looking forward to the publication of the Low Carbon Industrial Strategy this summer, which we hope will give a strong signal to the market.

19. With relatively small effort, the majority of the value of UK projects could be retained within the UK. Of the capital cost of such generators, nearly half is in the development and infrastructure portions of the project.⁶ Infrastructure includes cabling and foundations for projects: capability to produce the former is certainly available in the UK and if market certainty can be provided, that can be expanded to supply the thousands of km of cable required; the latter should be a natural extension of the UK capabilities to provide offshore structures for the oil and gas sector. Consequently the approximately £25 billion to be spent on these components could be readily retained in the UK.

⁶ In the Ernst & Young report *Banding of the Renewables Obligation—Costs of Electricity Production* commissioned by BERR in support of the Energy White Paper, these factors are 2% and 46% respectively. See <http://www.berr.gov.uk/files/file39038.pdf>

20. Of the remaining capital value, about half is in the tower and blades of the turbine, and the other half in the nacelle. Due to transportation issues, it should be natural to manufacture the former components in the UK, and barriers to entering the production of these are relatively low, leading to a further £12.5 billion of business which UK companies should be able to bid for competitively. So, approximately three-quarters of the investment in offshore wind projects—approximately £37.5 billion—should be readily accessible by UK or UK-based firms. Securing the remaining 25% of the value for the UK will require nacelle assembly and a strong UK component supply chain. This will be more difficult to establish, but would maximise the value to the UK.

21. The manufacture of the equipment for offshore wind is not the only part of the value chain that is available to UK business. Installation and operation will employ significant numbers, approximately 10,000 by 2020, and have market value in the hundred of millions of pounds annually. These should be areas where the UK captures a large proportion of the value available. The expertise that UK firms are building up in the development and installation of offshore wind will also have an export value, though this will be quite small in comparison to the capital cost of projects.

22. The electricity produced from renewable sources displaces fossil fuels, which will increasingly be imported. Thus, in addition to benefits in the form of carbon emission reduction, there will be improvements in our balance of trade and an increase in our security of fuel supply from renewables. Due to the capital-intensive nature of most renewables, they also result in very stably-priced electricity, which is a benefit that is not often recognised.

23. *The nature of the jobs that might be created in green industries as a result of the green fiscal stimulus.*

24. Whilst BWEA is not in a position to comment on the “green” sector as a whole it can provide input on the nature of the jobs that will be in demand for the renewable energy industries if targets are to be met.

25. Since renewable electricity will have to contribute a disproportionately large slice of our 15% by 2020 renewable energy target, and wind power is the renewable electricity technology ready to deliver at scale in this time, a large proportion of the renewable sector employment opportunities arising in the near future will be in the on—and offshore wind industries. The wind labour force needs to grow from 5,000 today to a minimum of 36,000 by 2020 to ensure capacity is installed on track to meet the Government’s own renewable energy targets (Bain & Co, 2008, base case scenario). Under a higher-growth scenario with significant offshore manufacturing, this rises to 57,000. Businesses focusing on micro-generation technologies are also set to provide a large number of jobs in the near future.

26. The range of employment opportunities within the renewable energy sector is extremely diverse, and the scale of demand for talent is vast. Employees are needed coming from both vocational and graduate educational backgrounds. A single project provides a myriad of different jobs, when one considers the steps involved this becomes clear.

27. Employees of different backgrounds are in demand in consultation, planning and development, construction, operation and maintenance, technical, procurement, financial, legal and retail services. There is also plenty of scope for research and design work for those who aim to drive technological innovation forward for the future.

28. Construction, operation and maintenance are the areas that are anticipated to collectively provide the highest number of new jobs in the period leading up to 2020. Whilst design and manufacturing are the most labour intensive areas within the supply chain, without the right policy environment companies will not set up manufacturing bases in the UK and these national employment opportunities will be foregone.

29. As noted above, fiscal stimulus is not a solution in itself, key barriers such as grid connectivity, bottlenecks in the planning system and supply chain issues need to be addressed before the renewable energy sector can maximise its outputs and really start recruiting at full pace. In addition, whilst the vacancies will no doubt open up, the question of how the UK’s skills base can be built up to feed industry’s demands has not been adequately addressed thus far.

30. *The Low Carbon Industrial Strategy, what it needs to deliver, how, and by when.*

31. The Committee are directed to BWEA’s *Powering a Green Economy* paper referred to above. This gives the Association’s full thoughts on this subject.

32. *The skills base for the UK environmental industries, and the effectiveness of Government policies to improve and enlarge it.*

33. There are three key challenges in addressing the skills needs of the sector: (i) identifying what skills areas public policies should focus on; (ii) lack of clarity over who should be responsible for building the skills base; and (iii) rolling out support at speed and at a scale demanded to support the growth and demands of environmental industries. Whilst an impressive amount of work has recently been done on the first point, actions to address diagnosed skills shortages are lagging behind. For jobs in the renewable energy industries to be successfully filled, rolling out public investment in training of both students and trainers themselves is crucial. Such support is needed at all levels, from further education level through to postgraduate training, as the green industries are set to provide employment opportunities for individuals from a broad range of backgrounds. In order to support the success of the industries, both up-skilling and re-skilling pathways need to be set out.

34. A number of reports over the past six months have set out to analyse the nature of the skills needs for building a green economy, from TUC, EU Skills (Scotland), ETI, and the work done for BWEA by SQW and Bain & Co. Together they provide a strong indication for where public support on skills should be focused. They all suggest that the overall pool of people with the right skill sets is too small to sustain the rate of green industry growth that Government envisages.

35. Whilst BWEA is not in a position to comment on the environmental sector as a whole it can provide input on the skills gaps that affect the wind and marine energy industries.

36. The Bain & Co Report *Employment opportunities and challenges in the context of rapid industry growth*⁷ identified that the most acute shortage today is at skills levels 4 and 5 for technical roles within renewable energy businesses. The pool of engineering technicians and professional engineers must be boosted to supply the most imminent demands of the renewable energy industries as well as the broader spectrum of employers across the UK. Bain & Co found that it was particularly difficult to recruit project managers (46% of those surveyed reported difficulties recruiting for this position), electrical engineers (40%) and turbine technicians (25%).

37. The key causes underlying the skills gap today and in the near future are a lack of qualified potential recruits, a lack of potential recruits with relevant experience, and, despite an overall rise in the intake of engineers, a fall in home student applications and candidates for essential engineering niches, for instance in 2001 the student intake for electronic engineers was 5,100, but by 2005 this had dropped to 2,900. In addition, the overall number of young people (18–20) is forecast to drop by 2020.

38. Such evidence suggests that focusing on providing support for training that combines academic groundings with practical know-how is what is needed. Funding for industry focused apprenticeships and sandwich courses at university level would be welcomed.

39. Despite efforts to streamline the complexity of the UK's skills system there is still confusion regarding the responsibilities of different players, not only experienced by industry, training providers and learners but also amongst the key bodies themselves. For example, the Sector Skills Councils must ensure they meet more regularly through their "Cross SSC Renewables Project" so that they can clearly communicate their roles and take ownership for which areas they will cover as soon as possible. Once all stakeholders are more aware of who does what in the skills system, action to address skills gaps can take place more swiftly. Collaborative efforts such as the National Skills Academy for Power that bring a variety of stakeholders together are encouraging, and the renewable energy industry eagerly awaits what the NSAP outcomes will be for us.

40. At present around 5,000 people are working in the wind and marine energy industries. By 2020, between 22,000 and 57,000 will be employed in the large scale wind industry alone. An additional 5,000 employment opportunities are anticipated to arise within the micro-wind industry, and up to 2,100 will be joining the marine energy industries over the next 11 years.

41. Training needs to be rolled out fast especially as this growth sector is not the only one with a need for new entrants. Ensuring a wider pool of potential employees with core technical training, for all industrial sectors, should be an important goal for Government.

42. In terms of the skills needs of the renewable energy industries, there is a great deal of overlap with the power sector as a whole. RE companies are already finding it difficult to find suitably skilled recruits. On top of this, the aging employee profile within traditional energy businesses means there is will be a steeply increasing demand for a shared pool of suitably qualified new entrants. In particular, the number of professionally qualified engineers within the UK must be boosted. University departments must receive adequate funding to support their teaching and research, whilst simultaneously home-student uptake of engineering subjects must be encouraged at undergraduate and postgraduate levels. The set up of centres of excellence such as The UK Wind Energy Research Centre at the University of Strathclyde is very welcome and provides a useful model for how future expert training for the green industries can be developed. Focusing funding strategically is more valuable than spreading the same resources thinly.

43. As for vocational technical training—funding for the further education sector needs to be increased (in contrast to recent trends) and also focused in a strategic way—ie following the centres of excellence model.

June 2009

⁷ See http://www.bwea.com/pdf/publications/Bain%20Brief_Wind%20Energy%202008_FINAL.pdf

Witnesses: **Dr Gordon Edge**, Director of Economics and Markets, British Wind Energy Association (BWEA), **Mr Henning von Barsewisch**, Managing Director, REpower UK Ltd, and **Mr Steve Clarke**, UK Content Manager, Mainstream Renewable Power Ltd, gave evidence.

Q223 Chairman: Good morning. Thank you very much for coming in. You have heard the evidence from our previous witnesses. Perhaps I could start with a general point. I think there is a sense of frustration amongst many of us that Britain is a country with lots of natural advantages for renewable energy, most obviously things like wind and tidal and so on, but we are not a leader in this industry; in fact we are not even anywhere near the leaders. What do you think the Government could do to encourage more investment in renewable energy?

Dr Edge: The number one thing the Government needs to do is to ensure that there is a strong and stable market for renewable electricity. From this, all else flows. We believe that in recent times the Government has been trying to build up the coherent policy agenda for which we have been asking for quite some time. We have had a support mechanism. That has not been as effective as it might have been because a number of non-economic barriers got in the way, notably planning and the grid system, but we are seeing progress on that. We are looking forward to the publication of the Renewable Energy Strategy, probably next week, which we hope will bring forward more proposals on that, but we have to understand that we have made a lot of progress, and, indeed, we are leading in offshore wind. We are the number one generator of offshore wind within the world and we will continue to be so for the next ten to possibly 20 years. That gives us an opportunity, also, to be a leader in the industry as well.

Mr Barsewisch: My background is that I am from Germany originally and I moved here six years ago and started up REpower UK, a subsidiary of the German turbine manufacturer in the UK. Over the last six years I have seen an enormously encouraging development in the UK. Firstly, on the onshore side there is very substantial progress. Things are really happening and it is really an industry now. But, also, on the offshore side it has been very impressive. The UK is the only country in the world that consistently, year on year, installs offshore wind farms. While the nacelle and the top bit might seem the prize of it, it may come from somewhere else in Europe, it has been a phenomenal track record and a phenomenal experience also to British industry. No other country has managed constantly to build, year on year, wind farms offshore, therefore the experience in project management, on the finance side, on health and safety, on logistics is second to none and it will come in very handy, but what is very important to understand in that context is that what it is all about is stability. The reason why Britain missed out on the opportunity of having significant UK manufacturers is because of the years that stability has not been in place. Industry was not sure whether there would be a market in the future. A home market is fundamental and is crucial. Because that has not been in place, let us say, about ten years ago, some of the very promising offshoots in the British manufacturing side died because there was not a

confidence there. That is why countries like Denmark and Germany are extremely successful in terms of creating jobs. The opportunity for Britain really is there on the offshore side, in offshore wind but also in wave and tidal. The underlying principle is what Gordon said initially: stability. Do not rock the boat. What is coming there is extremely promising. It is looking very good. It might not be quite there yet in that there are massive numbers of jobs coming out of it, but the opportunity really is there and it will prove very large in terms of the economy, provided that the environment is stable and these companies can continue to prosper and do their bit.

Q224 Chairman: I am not sure whether those two bits of your answer reconcile. You say everything is tickety-boo, we have the biggest offshore wind sector, there is year-on-year growth and so on, but the truth is in terms of jobs it is not producing many in this country. You have just acknowledged yourself that because of a lack of stability we are not getting the jobs here. If you look at the turbine manufacturing sector, how many of the turbines are being put out in offshore now have been manufactured in this country?

Mr Barsewisch: The view one should take of that is the value-added that is done in the country, and that is substantial. It does not take the full picture to say that the turbines are coming from Denmark or Germany because the top bit is coming from there. Nowadays in an offshore wind farm less than half, maybe 40 per cent of the total value is the turbine, whereas the steel, the substructure, the logistics, the grid connection, all of that is largely made in Britain. While it might not seem as sexy to produce cable, cable is awfully important and there are British cable suppliers. There are companies that make towers in Britain. Steve, maybe you can jump in that, on the share of offshore wind farms of British value-added.

Mr Clarke: Yes, for sure. We cannot correlate forward what has gone on in the past. Henning's point is absolutely right that a strong home market is key. In the past, Germany and Denmark have had strong home markets onshore, which we have not. Now, and going forward, we will have the strongest worldwide offshore market, and as a result directly we have the opportunity to grow the sorts of turbines, technologies and supply chains we need. The volume is leading to whole new turbines coming to market. In the short to medium term there are massive opportunities for UK companies to come in as what I call the "me toos", to enter the existing supply chains to ramp up capacity that is much needed, but, then, as we start to see bigger projects proliferate in UK coastal waters, new turbines will come to the fore which are currently being funded through big public and private investment programmes. Those new turbines currently do not have a supply chain prescribed, so there is a very, very big opportunity, whilst we have the home market for the next ten years, to grow those new

supply chain companies. That is the step change that is the opportunity ahead of us that does not correlate with what has gone on in the past onshore.

Q225 Chairman: What is our share of the value-added to date and what will it be in this more optimistic scenario that you now paint?

Mr Clarke: First of all, there is the significant opportunity of growing a UK supply chain in cutting metal, making components and so forth. But secondly, and more importantly, when turbines are being delivered onshore, for onshore markets, service could be delivered pretty much by setting up a base anywhere. With UK coastal waters becoming home to the large amounts of offshore wind farms, it is very, very appropriate that the operation and maintenance bases around the coast are also as close to those wind farms as possible; that is, UK coastal locations. It minimises downtime, maximises speed of deployment. Those jobs are minimum five-year jobs, maximum 20-year jobs too. I see a vision, going forward, where if we proliferate large-scale offshore wind farms we not only grow new technologies and commensurate supply chains but we capture the long-term five- to 20-year operation and maintenance jobs too. Then, as we start to see old wind turbines being taken down and re-powered, as we are seeing onshore in Germany and Denmark now for ones that are already 15 to 20 years old, that opportunity is just perpetuated forward.

Q226 Chairman: What is the current share of the value-added factor and what will it be in future?

Dr Edge: The high-water mark in terms of local content for offshore wind projects was the Scroby Sands project off Great Yarmouth, and that was at 50 per cent. Most projects have not been at that level—perhaps as much as half of that—but it is worth pointing out that offshore wind has been only one or two per cent of the total global market for wind power generally. Therefore, what you have seen is onshore turbine manufacturers and people working in this sector, and, indeed, when it comes to things like the foundations, people working in the oil and gas sector and a very small part of their production being devoted to this sector offshore, with the turbines being primarily onshore turbines that have been made and then “marinised” and taken offshore. Going forward, as Steve rightly says, there will be dedicated, new, large turbines for which the factories have not yet been built, and that is the opportunity, for the UK to be able to capture that. The Government needs to ensure the market and then also help us build the infrastructure to attract those kinds of manufacturers. The model we point to is Bremerhaven in North Germany. A lot of public money and resource has been put into building an area which has been cleared and made available to turbine manufacturers and blade manufacturers for the offshore sector and they have been quite successful in getting some manufacturing out of that, including Henning’s company REpower. We need to see that focus in the UK. We need to choose a hub for manufacturing of offshore wind in the UK

and really put resource into that, making a deep-water port, lots of lay-down area, lots of areas to make blades and towers and so forth and nacelles, and then build it. We should then be able to capture that extra 25 per cent which is involved in nacelles, as well as all those other bits underneath it.

Q227 Chairman: Where would be a good place to do this?

Dr Edge: Somewhere on the East Coast. We are agnostic, but—

Q228 Joan Walley: Did you say the East Coast?

Dr Edge: The East Coast, because that is where the largest proportion of development will be in the North Sea, the majority of the Round 3 sites are out there in the North Sea, like Dogger Bank and Hornsea and so forth. There will be significant development in the North West as well. If you want to pick just one manufacturing hub: somewhere between the Humber and the Tay perhaps.

Q229 Chairman: Is there a risk that if we do not do this relatively quickly other countries—they can see the market just as clearly as you can—may move in and capture a bigger share of it?

Dr Edge: Yes. The window is there but it will close if we do not act pretty swiftly.

Mr Clarke: May I say that I think there are two risks there if we do not move quickly. The first risk is we do not build out sufficient quantities of clean, green gigawatts—that is the first and biggest risk. Secondly, if we do not move quickly enough to capture the UK content, then maybe we do get to deliver the gigawatts of low carbon energy but they are delivered by Korean and Chinese companies.

Q230 Joan Walley: You have thrown up a lot of issues there. I would like to come back to talk about the manufacturing hub in a minute, but, just going back, in 2007 five per cent of the UK’s energy came from renewable sources and the Government has now set targets for 35 per cent by 2020. You talked in your previous replies about the need for stability. Does that commitment to 35 per cent of energy from renewable sources by 2020 give the stability that was the fundamental plank of what you said was needed for your industry’s future?

Dr Edge: It is certainly really helping. One thing that we have really found out of the whole process of the European target for 2020 and the new Directive has been a whole new sense of purpose behind government’s policymaking in the renewable sector. Whilst we had the Renewables Obligation and different programmes in terms of bringing forward changes to the planning system and so forth, this has given it a really big push and underpinned that market stability and confidence that we really think it is going to happen. The icing on the cake was what came in the Budget. We were lobbying and saying, “There are some short-term issues in terms of loans

for onshore wind and the economic situation for offshore wind.” and the Government then responded to that. It gave us a lot of confidence that they are right behind this and they are going to stand behind it all the way to 2020.

Q231 Joan Walley: You say that you were given a really big push. Is that a clear enough signal for industry, or is there some murking of the waters in terms of how, for example, nuclear could well be part of the equation and could make it less clear in terms of the signals about renewables?

Dr Edge: It is not an either or with nuclear and renewables. There is an argument that you need everything you can get, but we do not see why it is the case that if you are choosing to opt for nuclear that would necessarily impact on our sector. As long as the signals are there and the support system is there and we are getting a lot more signals on planning and the grid system it should be okay. We would love to see government being a bit more publicly behind our sector.

Q232 Joan Walley: What more could it do?

Dr Edge: The Government speaks at nuclear industry supply chain events and works in strong partnership with organisations. We feel there is perhaps a bit more they could be doing there for renewables, but it is getting a lot better than it was.

Mr Clarke: We will probably come on to the green jobs aspect shortly, and when we do we will see a vision that fundamentally we need a lot more mechanical and electrical engineers in this country coming through the system to take up jobs. Those kinds of skilled people will be just as relevant to nuclear as they will be to wind. There are some benefits in the green jobs agenda for growing those sorts of skilled people for both of the sectors that you mentioned.

Q233 Joan Walley: Could you put a figure on those jobs that you could see being created?

Mr Clarke: We are focused on wind energy. We have done some empirical analysis through the Bain Report.

Dr Edge: We could supply that for you.⁹

Q234 Joan Walley: Coming to what you said just now about needing to have a hub that would be there to take advantage of this new investment and the future projections of greater take-up of renewable energy, what is the interface between regional development policy, which is presumably what is driving that readiness on the ground. I represent a constituency in the West Midlands where we have manufacturing skills in abundance. You mentioned the East Coast. Where is the strategic discussion taking place between your industry, in the places where it is scattered about around the British Isles,

and the regional strategy and the opportunity for investment in jobs that could go a long way towards dealing with some of the unemployment black spots that are currently there because of the way in which some manufacturing industries no longer exist or are in a state of transition? Where is that debate taking place?

Dr Edge: There is not the leadership at the moment on a national strategic level. The Government has made great noises about finding somewhere to make this hub and it has been talking with the ports industry. There was a very interesting ports seminar back in March and there is a prospectus now on the DECC website showing where there are facilities available, but we think the Government needs to sit down with the RDAs and knock some heads together and say, “Right, between you guys you cannot all win here. One of you is going to have this major investment and we need to decide.” Yes, there will be other things that other regions will get out of this—and I am sure the West Midlands will be able to build up strong component supply chains to feed that hub as long as they know they are there. You are only going to get the turbine manufacture if you really focus the investment and entice those manufacturers in to set up. Only then can you have a target for those component manufacturers to supply to. We have to club together and make that agreement so that everyone can win, but not everyone wins big in terms of having that hub.

Q235 Joan Walley: If those discussions are not taking place, where should they be taking place?

Dr Edge: The Department of Business Enterprise, Innovation and Skills needs to be the one that takes a lead on this. We are hopeful that in the Low Carbon Industrial Strategy there is some strong focus in this. The day after the Budget, BERR, as it still was, and DECC published a report called *Investing in Low Carbon Britain*, which for the first time in a government document put out the objective of having a large single manufacturing hub for offshore wind. We are hopeful that the Government really has that message and is wishing to pick up that ball, but we have not yet visibly seen them taking that initiative with the RDAs and other interested stakeholders, like the major ports group and so on, and forcing a decision.

Q236 Joan Walley: The existence of that strategy is an example of government showing leadership, is it not?

Dr Edge: I hope so. I want to look at the strategy, and I would reserve judgment, but I am hopeful that the messages that we have been giving for quite some time now have got through and that therefore they will be taking further leadership.

Q237 Joan Walley: You would disagree with the evidence that you heard just now from the EIC that there is no leadership.

Dr Edge: In our area we are starting to see leadership emerge and direction.

⁹ <http://www.bwea.com/pdf/publications/Bain%20Brief—Wind%20Energy%202008—FINAL.pdf> & <http://www.bwea.com/pdf/publications/BWEA%20Skills%20Report%20FINAL%2016oct.pdf>

Q238 Dr Turner: All the discussion in the past half hour has been couched in terms of wind energy because that is what most people recognise renewable energy to be, but obviously it is not the only one and it ignores the fact that we have enormous marine resources, almost uniquely, in the UK. What is your view on the balance of renewables that could be achieved in producing 35 per cent of our electricity from renewable resources? Where do you see the potential for wave and tidal power?

Dr Edge: We estimate that even with quite a strong policy push you are looking at somewhere in the region of 1500 megawatts of wave and tidal capacity by 2020. The number of grid-connected wave and tidal generators in the world is countable on the fingers of my two hands, with a total megawattage of perhaps ten. That is where the wind industry was in 1980 and it took a further ten years to get to the first thousand megawatts of wind power. We may be able to accelerate some, but there are limits. We have a huge opportunity in the UK to continue the leadership we already have in terms of the research infrastructure, the testing infrastructure, the intellectual skills that have been developed in our universities over the last 20 years, and, indeed, as you rightly point out, that huge resource, but we do need to make sure that all the links in the innovation chain are covered, there is that major gap between the Marine Renewables Deployment Fund which supports early stage projects and the wider market. We do not like using the term “valley of death” but that seems to be the accepted term. If something is not done to fill that, then we will not progress further, but there are also links ahead of that, getting the full-scale prototype area which we see. On the funding in the Budget, the £405 million, we have had an indication from DECC that a significant proportion of that will be going towards the wave and tidal sector which will be very welcome.

Q239 Dr Turner: So far there has been no single government initiative to directly benefit wave and tide. The only thing has been the marine development fund, which has not yet paid out a penny. Do you think that we are great danger in terms of wave and tide, where we have fragile lead in terms of technology development, rather comparable to our state of development in both wave and wind power in the early 1980s when we lost it? We just lost it. You know what happened in wind. Are we not in grave danger of repeating the same mistake with wave and tide?

Dr Edge: I absolutely agree that there are risks here. If we do not take strong action in the near future there is a risk it will go away. I underline that we have strong advantages and a lead, and with one or two very key steps—obviously the valley of death being the key one—we can have that industry. Yes, there is a risk. We pressed government quite strongly about this, that there needs to be further funding in that chain and if we do not get it, it will go somewhere else. You say the Marine Renewables Deployment Fund (MRDF) has not given any money. The Portuguese have had a feed-in tariff for quite some years and there is only one project which has been

able to access that so far. I am not aware of any more being developed to meet it. I do not think it is necessarily the fault of the MRDF; I think it is the fault of us not making sure that things were ready to get into the sea in the right way, which is further down the innovation chain. I think we are in danger of talking ourselves down, if we are not careful.

Q240 Dr Turner: We are in a position now where things are ready to go into the sea. Things are in the sea in limited numbers. The valley of death is still there and it is still littered with all the bodies from the whole field of innovation. What would you like to see done? We know the MRDF is a complete failure. What would you like to be seen to be done, in order to pull through with early stage technologies so that they can get through to full commercial scale?

Dr Edge: I would disagree that the MRDF has been a complete failure. The fact that it is there has been an important staging post carrot on the way.

Q241 Dr Turner: It is a carrot that nobody is interested in.

Dr Edge: Our failure has been to fund the prototype stage enough to allow people to access the MRDF. That is not the fault of the MRDF.

Q242 Dr Turner: You do not think there is a market failure.

Dr Edge: There is a market failure beyond that. That is the next carrot you need to have to be pulling it all through.

Q243 Dr Turner: My question to you is what do you want to see done about establishing the market? You have made the point, very correctly, that we now have a market established for offshore wind. It will just happen now. That is almost a given. The only thing that is an issue is how much value-added we get out of it for our economy. What do we need to establish the market for wave and tide? The technology is there. It needs the market pull now.

Dr Edge: Absolutely. Our position has been that post MRDF the general model of a capital support and revenue support mixture is good. There is still a lot of technology risk, even after that first project through the Marine Renewables Deployment Fund, and therefore we still see a role for extra capital support immediately going beyond that. Fix the revenue to a certain extent.

Q244 Dr Turner: How? I am trying to get at how. Give me an answer.

Dr Edge: Our preferred model, in the model of the Non-Fossil Fuel Obligation Contracts, would be to have an agency buying the power and the ROCs at a fixed value, or perhaps just the ROCs. They could then sell those certificates on the open market to part-fund that process, with a top-up coming from government funds. There would be a capital grant, there would be some revenue support, with the capital grant and revenue support tailing off until they can function at two ROCs per megawatt-hour,

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as currently seen in the longer term under the Renewables Obligation. We think that model could work.

Q245 Dr Turner: We are in a situation where there is an absolute investment drought. There is certainly no investment available for high risk, in commercial terms, technologies, such as wave and tide, because of the lack of reasonable market certainty. You have not said anything or suggested anything that would give an investor any confidence.

Dr Edge: Why not?

Q246 Dr Turner: You have not. Others might argue that four or five ROCs might make a difference, which would be a substantive suggestion. What is your position on that?

Dr Edge: I am sorry, I am just a little puzzled as to why mine is not a substantive suggestion and giving five ROCs is. It is a support mechanism.

Q247 Dr Turner: I am just asking you to say it. Is that the sort of mechanism you want to see?

Dr Edge: Yes. We have said so in our response.

Q248 Dr Turner: I am trying to get you to say it for the record here.

Dr Edge: I am sorry. I thought I had said that that was our position.

Q249 Dr Turner: Right. That is better. I was just trying to get a substantive answer from you. Okay. The prize is quite considerable, is it not? I disagree with your estimate of the potential by 2020 for marine technologies. I think it could be much greater. The other great advantage is, whereas we may get 50 per cent if we are lucky in terms of value-added out of offshore wind, we could get something approaching 100 per cent out of wave and tide if we get it right. Is it worth pursuing this with greater vigour?

Dr Edge: We believe that wave and tidal should be pursued with all vigour. We have always said that. We just believe that, having had the experience of wind power, especially since we are going into a harsh environment like the sea, it is very easy to over-promise and under-deliver. I think that would be a bad thing. Our estimate of what is possible by 2020 is tempered by that experience, but that would still make us by far the world leader and the strong centre for this industry going forward. The important thing, I think, would be to set a further objective, out further, so that the industry knows that 2020 is just a staging post and in fact there is much more to come in the years after.

Q250 Dr Turner: How much responsiveness do you detect from government to this imperative?

Dr Edge: We believe that a large chunk of the £405 million that the Government set aside in the Budget would be given over to wave and tidal. We are talking to DECC around issues to do with this valley of death and what happens. I do not think they are being particularly responsive to our

particular model, partly because it involves having to spend a chunk more of government money which, obviously, is in very short supply at the moment.

Q251 Dr Turner: Can you tell us something about the resistance. It sounds great: there is £405 million sitting there, plus access to the European Bank funds. In theory there should be no problem, but it is not happening. No-one has yet accessed that money and DECC has not made it clear how people will access that money. Do you have any answers that no-one else has?

Dr Edge: No, but we understand that out of the Low Carbon Industrial Strategy and the Renewable Energy Strategy they will make clear what they are going to be spending that money on. We are just getting indications that they think that wave and tidal should be getting a disproportionate chunk and that what they are focusing on is those areas leading up to the Marine Renewables Deployment Fund. We are still working with them and saying, "Can we please talk about a strong message post that?" It is not that they do not want to, it is just that they are sitting there saying, "We have no money."

Q252 Dr Turner: But they have money.

Dr Edge: That £405 million has to be spread about a lot of things. You need to be talking in the region of £1 billion over ten years in above current market costs to try to bring forward that development and I think they are nervous about committing that as government funds.

Q253 Dr Turner: This is precisely the sort of nervousness that has seen us lose industries before, is it not?

Dr Edge: It does not mean they are going to do nothing. We are looking forward to the Renewable Energy Strategy to see what they think they can do, but I think there will be something in there.

Q254 Dr Turner: It is clear from the German experience that it is fatal to do nothing. You have to do enough. If you fall short, you might just as well have done nothing, in practice.

Dr Edge: Yes, but we have been working with government to make sure that enough is done. We still need to be waiting for the Renewable Energy Strategy and what is in there. As I have said, I do not think government wants to do nothing; it is just that it has not yet done it. It may be happening very soon.

Dr Turner: Perhaps I can suggest that you need some sharper steel-toecaps.

Q255 Mr Chaytor: Coming back to the suggestion of jobs in offshore wind and onshore wind, are the companies that are starting to generate the new jobs either in turbine manufacturing or in logistics or in cables completely new start-up companies or do they tend to be companies already in existence that have been supplying other forms of industries? I am interested in the extent to which, with the

growth of renewables, we are going to see a whole new set of industries and new set of skills emerging from nowhere but at the same time significant redundancies in companies that have previously been servicing the fossil fuel industries, or is there a way of managing the transition by building on older skills and retraining?

Mr Barsewisch: The second point you are suggesting is more the way the reality would work out. At the end of the day renewables is part of the energy mix. That is where it belongs and that is the wider picture. That means that a lot of the existing players that are active in the power industry are starting to ramp up their renewables activities, be it by acquiring some more start-up companies or by expanding on their own basis. If you are making an offshore cable, it does not quite matter whether that connects an oil rig or a wind farm. Granted the power rating might be different, at the end of the day it still ties in. There is that gradual transition. We are not living in a black and white world, where it is the old industry versus the new one. This is a gradual transition and it is also reflected in expanding skill base and looking at the skill base. BWEA, for example, is doing some quite significant work in terms of leading an apprenticeship programme, making sure that we have the skills in the future. We expect—we have had some work done by Bain & Company—that by the year 2020 57,000 people will be working in renewables, in wind, wave and tidal, compared to the 5,000 that that was the starting point around 2007. There is a massive growth. Where do these people come from? They have to come from somewhere. We also see that it is not an entirely different curriculum that they have to go through. In many cases, the skills that are needed to make them employable in our industry are more add-ons, bolt-ons, modifications of existing programmes. That is why the turbine technician programme that we are looking at is something that we are optimistic we can roll out pretty swiftly, together with EU skills and a number of other players, because it is effectively taking an existing apprenticeship and adding to that the renewables bit, adding to that working at height. Somebody will have been working with high voltage and now they have to be working with high voltage and at height. Working at height is understood and working with high voltage is understood: it is bringing those things together and making it one package.

Dr Edge: This Friday I shall be going up to Middlesbrough to attend the opening of a new factory in a company called JDR Cables which came from the oil and gas sector. They were doing cable and now they have seen and gained a lot of work in this new market of offshore wind and they are building a new factory for that reason. That is a very good example of people coming across from other sectors.

Q256 Mr Chaytor: Are we seeing something of a geographical concentration here? In the way that in the past Lancashire and Cumbria have been strong

in the nuclear industry and Aberdeen has been the centre of the oil industry, are there now geographical locations that you would identify as increasingly strong in the development of renewables?

Dr Edge: Yes. Steve can talk about Lowestoft, which is a key one, we believe. We are seeing concentration around the Humber, Teesside and especially in Northumberland, around Blyth, where the New and Renewable Energy Centre is set up.

Q257 Mr Chaytor: So this is good news for the East Coast.

Dr Edge: Absolutely. Places like Mostyn and Belfast are getting good work out of this sector as well.

Mr Clarke: We are seeing a time dynamic. We need to see those clusters now develop and proliferate and seize market share, which if you like kick-starts the industry. As a result, the North West will then start to develop, the Scottish territorial waters will start to develop—as will Northern Ireland.

Q258 Mr Chaytor: In the last few days, the Chief Executive of EDF has finally admitted that he cannot build a nuclear power station until the carbon price hits €60 a tonne. What are the implications of that for the wind industry? What do you need the carbon price to be at to make offshore commercially viable?

Dr Edge: The carbon price will underpin the power price, and that is always going to help. But the more important thing for us is the Renewables Obligation. If we have a high and stable carbon price, that helps the stability in the power price part of our income, and that will help us. Then you can crank down on what you need out of the Renewables Obligation as time goes on. It is part of the mix, but it is not as vital as it is for some other sectors.

Q259 Chairman: Given the very long period over which investments have to pay a return, particularly in offshore wind but in other renewables as well, is there enough stability in the present incentives? Does the Renewables Obligation provide enough long-term predictability and stability?

Dr Edge: We certainly welcome the fact that it is a long-term mechanism, out to 2027 for sure, and the Government is committed to taking it out to 2037 at least. As time goes on and we approach what would be called “guaranteed headroom”, sometime before 2015, then the price of ROCs will be pretty stable from then on. So long as there is a general agreement that that is the mechanism and we are not going to mess with it—which we are hopeful we can get from across the political spectrum—then it should be something about which increasingly people will say, “It has been there now for seven years. We expect it to be there for as long as we need it.”

Q260 Chairman: The implication of what you have just said is that there is still an element of uncertainty which it would be helpful to have removed. Is that right?

Dr Edge: A small residual amount.

Q261 Chairman: Is there anything else the Government could do to provide a greater degree of stability and certainty and predictability in order to encourage investment?

Dr Edge: It is the non-economic factors. We would like to see progress in that space, particularly in the planning field for onshore wind where it is inconsistent and slow and expensive. We are seeing progress in the offshore sector with new rounds from Crown Estate and the application of the new Infrastructure Planning Commission. We see that that is making some significant progress there. I think grid would be the other one where we would like to see more help, more clarity on the regulatory side, to make sure that we can deliver on time.

Q262 Chairman: Realistically, given that this is quite a crowded country, whatever changes are made to the planning system there are always going to be difficulties about expanding onshore in the southern half of the UK. We have a natural disadvantage compared with America in terms of onshore, because of the crowded nature of the country, whereas we have a natural advantage in that we have lots of sea right on the doorstep. In terms of playing to our strengths, I take the point about the grid connections and so on, and that clearly is relevant, but I think it is optimistic, perhaps even naïve, to think the planning system can be changed so that onshore gets much easier. It is always going to be difficult, is it not, in this country?

Dr Edge: I think it could be made easier, more predictable and faster. These are things that could happen. When you compare wind farms with other developments that require environmental impact assessments, 70 per cent of those other developments are decided within their statutory limit of 13 weeks. Only five per cent of wind farms are decided within the statutory supposed limit of 16 weeks. We feel that you can do better on that.

Q263 Chairman: You would rather there were no—

Dr Edge: That would possibly be the case, unless it was a stupid no that we had to appeal. There are plenty of noes that are completely inconsistent with national policy guidance or against planning officer recommendations—which we think would be bad.

Q264 Chairman: Would feed-in tariffs provide more certainty than the Renewables Obligation?

Dr Edge: I think it is a case of the old Irish joke, of pulling up to the farmer and saying, “How do you get to Tipperary?” and him saying, “Well, I wouldn’t start from here.” We are where we are and to move away from the Renewables Obligation would be too much of a change and would impact market confidence. If you address these non-economic barriers, then it becomes a much more effective system overall and the difference in terms of cost-effectiveness is low. We agree with government, with

the analysis it did as part of the renewable energy consultation last year, that that is in fact the right way to go. Feed-in tariffs have many good advantages but I think it would be a case of the perfect being the enemy of the good if we changed horses now.

Mr Barsewisch: To support that point from an industry point of view, that is extremely important. The one thing that always upsets industry and undermines investment decisions is changing the rules of the game, and even though feed-in tariffs might have some advantages, everybody is used to the ROCs now and that is a system that works.

Q265 Martin Horwood: Can I ask you about some of those barriers that you have identified, and this does not have to be just about wind. You talked about planning. If you look at the example of Denmark, we seem to have had less problems with communities opposing wind farms. In fact they have generally been supportive of them, partly because of the different attitude and the different way in which wind power is developed from the more community-up, bottom-up approach. The industry does seem always to blame the planning process and the fact that they are not allowed to steamroller their way through local communities more effectively, but do you not think that some of the fault may lie with the way in which the industry is approached?

Dr Edge: I would respond to that by saying that community ownership is not a panacea. If anything, our experience in the UK is that community-owned schemes have no easier ride and some have an even worse ride from the planning system than projects brought forward by commercial developers. It really is no panacea on that one. The only monetary benefit that a community sees out of having a wind farm in its area is a voluntary contribution from that developer, whereas if you go to somewhere like Portugal or Spain, the local land property taxes from that development go into the coffers of the local council. In the UK, business rates go straight to the Treasury. If you are in Spain, you can say, “That wind farm on that hill equals that swimming pool” and that connection starts making you think, “Actually, I want more of this.” It becomes a much more beneficial thing for people to have it in their area. That would be a better change and then the planning system would work in our favour.

Q266 Martin Horwood: What is your judgment on the Partnerships for Renewables initiative? Has that fulfilled its potential?

Dr Edge: I think it is still early days for that one. They are still working with their public sector partners to try to identify good sites and bring them forward. I think it is too early to say.

Q267 Martin Horwood: Could we be removing a barrier there if we gave more support to that?

Dr Edge: I do not think it needs more support. I think it needs local authorities and other public bodies to be encouraged to take advantage of what is already going to be a decent deal if they took advantage of it.

Q268 Martin Horwood: You mentioned the grid. Clearly infrastructure is an issue, is it not, especially with offshore and perhaps with other renewables as well? Should the Government be doing more to develop infrastructure for renewables?

Dr Edge: We were very pleased with the report from the Electricity Networks Strategy Group recently which identified the investment programme out to 2020 to support the connection of 29,000 megawatts of wind and 4.4 gigawatts of new nuclear with an investment programme of £4.7 billion in the onshore grid. We thought that was an excellent report. We are looking forward to more initiatives to make sure that is delivered in that timeframe. In terms of the strategic development grid, we think there has definitely been excellent progress. We are a bit concerned about the progress of the Transmission Access Review and the reform of access arrangements. We believe that DECC will be invoking the powers that it has in the Energy Act 2008 to impose a solution there, since there has been a bit of a breakdown in taking forward the solutions under the current governance arrangements. Hopefully that will lead to something coming in in the near future.

Q269 Martin Horwood: Mr Clarke, are you pleased with the way infrastructure is progressing?

Mr Clarke: One of the biggest things I can see a need for from our perspective—and we are developing offshore wind energy projects throughout Europe and not just in UK coastal waters—is more alignment of the SuperGrid agenda, where we start to address the socio-political barriers to delivering energy where it is required, irrespective of where it is generated. I am pleased to see that a lot more support is starting to gain momentum on that European-wide grid connection agenda, but still more needs to be done both in terms of investment (clarity on obligations and trading and so forth) and then finally the technologies that will therefore pump into those new, high voltage, direct current grids that are starting to emerge. My plea would be more joined-up talks with Europe to speed up that whole European SuperGrid agenda.

Q270 Martin Horwood: Are you disappointed that the British Government is not explicitly supporting that yet?

Mr Clarke: One can only be disappointed about the pace of SuperGrid since it has been talked about now for approaching ten years. So, yes, there is a degree of disappointment, but, equally, we are really pleased it is getting on to more and more agenda now.

Q271 Martin Horwood: As I understand it, the Commission does support it now and various governments do support it but ours is not signed up to it yet. Is that how you understand it?

Dr Edge: It is not the only one that has been expressing reservations. Germany has been a bit of a laggard on this one as well. We think that is extremely disappointing. We think that having that large-scale interconnection across the North Sea will

facilitate a much larger connection of wind, both on and offshore, in Europe as a whole but the UK in particular, so we would like to see government putting much more priority on this initiative.

Q272 Martin Horwood: Do you think there is a role for a large-scale public works programme in any of this? Would that be relevant to the infrastructure?

Dr Edge: More capital would be useful from whatever source it came, whether it is public money or private EIB is public money as well to a certain extent.

Mr Clarke: I cannot help thinking it needs to be both public and private, to give that sort of industry focus as well, not just purely public.

Q273 Chairman: Why did Vestas close its blade manufacturing plant in the Isle of Wight?

Mr Clarke: I could offer one perspective, and that is that it comes down to a certain degree to do with product. Vestas's products in the past have been extremely successful onshore; they have been less successful offshore. Their order book for offshore turbines has reflected that.

Mr Edge: I would add to that that all the production pretty much of that plant was being exported to the US and that market went through the floor this year as a result of the economic crisis. It is also a plant that has been there for quite some time. It was there for historical reasons. Getting large-scale, 45-metre blades in and out of that plant was quite challenging. If you were to go any bigger, they would have to have some very significant investments in that plant, including access—which they felt was not really justified by the order book that they have for the UK.

Q274 Chairman: From your earlier answers I think you did say that there was the potential for more manufacturing to take place in the UK, particularly if offshore expands in the way you expect. Apart from the creation of a hub that you talked about between the Humber and the Tay—there would seem to be a very wide range of choices there—are there any actions the Government should take if they want to try to attract manufacturers to the UK in the face of the possibility they might go to other parts of Europe?

Mr Clarke: One of the most successful examples is where, when Henning and I set up REpower UK, it was through collaboration: a German existing technology company partnering with a longstanding British engineering firm, Peter Brotherhood Ltd. The trade and investment programmes which start to broker partnerships between the existing supply chain leaders and the UK capacity that could ramp up, I think that sort of activity is key. It is always easier for somebody to get in through partnership than it is to be a completely new entrant trying to win orders, so anything on the trade and investment front I think would be most welcome. Then, in the example we discussed earlier, if a cluster is set up in a specific location it is how you then generate the corridors of supply chain within the UK to those clusters, from the manufacturing centres like the

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Midlands through to the East Coastal clusters. Any focus that can be done there on transport, logistics, knowledge transfer would be extremely welcome.

Dr Edge: Also, what I call the intellectual infrastructure is incredibly important here. That is the research, in terms of places like the New and Renewable Energy Centre where they do testing, the skills base, the colleges and the universities. That needs to be very much an integrated part of this plan to bring manufacturing to the UK.

Q275 Mr Chaytor: Earlier you were quite relaxed about the issue of skills shortages. Henning, you said that the skills were there in other industries and it was a question of simply building on those. Is there an issue in Britain about leadership and skills? Do we need to do more specifically, other than developing new skills in renewable industries? How do we compare with Germany, Denmark and Spain, for example?

Mr Barsewisch: Maybe just to clarify my remarks, in that sense I am relaxed that the potential is there. It is an enormous mountain to climb. I make no bones about it. This will take a lot of very significant work in order to get there, to really get those people and to be able to train them up and to qualify. In terms of leadership, the National Skills Academy for Power is being set up. We see it as one of the key elements and a key driver. We fundamentally believe that skills development needs to be demand-led. Employers need to say, "This is what we want," and we need to be involved in the detail of setting up those programmes; however the Government should still have an overall view of where things are happening from a strategic perspective. The Power Academy is very important in that context, and together with the work that the BWEA is doing will hopefully provide some significant leadership in getting that on board. The BWEA is working quite hard on it as well. At this annual trade conference that we are organising we will be hosting a skills summit, and we hope to get industry in that, the sector skills council and a number of other key players in the skills landscape, but also, importantly, the Government to back a bundle of measures that we are putting in place, including an apprenticeship framework for turbine technicians. So there is some joint leadership, but fundamentally it needs to be industry and demand-led.

Q276 Mr Chaytor: You have the structure there of the skills academies, you have the process which is the expansion of apprenticeships. Is there anything else that is needed to complete the package?

Mr Clarke: I really think there is one massive aspect and it touches on both of those. For apprenticeships to be most successful they need a vocational aspect to them, where individuals go through a certain amount of generic training and then they move on to the production lines and get their product specific training, their hands-on training. Because we do not yet have the UK supply chain, there is a lack of availability of internships or hands-on production roles to complete the apprenticeships. That is very acute if you consider that the apprenticeship programmes are four years and we cannot see wind energy engineers coming out of apprenticeships and taking up jobs until they are 21. Somehow we need to overcome that valley, where we have generic training and then hands-on training within supply chain companies that then deliver 21-year olds ready to take up the job. There is a huge opportunity to diversify skilled people redundant from jobs, for example, that are already over the 21-years old age barrier, but we fundamentally need more work-based placements for individuals to complete their training.

Q277 Mr Chaytor: Are there enough companies who are willing to offer placements that are coming from the companies?

Mr Clarke: Not yet. This is where the supply chain is absolutely key. The clusters are absolutely key. The growing of small companies into bigger ones is absolutely key.

Dr Edge: I think Steve is being a little bit bashful about some of the initiatives that Mainstream are taking with NaREC (New & Renewable Energy Centre in Blyth) in terms of setting up facilities with Northumberland College to train technicians. I think we need to see much more investment in training centres, including large equipment, like nacelles, that people can work on to train on, and towers where they can work at height, and that is quite expensive.

Q278 Chairman: Are there any other burning points you wanted to make while you are here?

Dr Edge: Those are our three key messages really.

Chairman: Okay. Thank you very much for coming in. It has been a very helpful session for us. Thank you.

Tuesday 20 October 2009

Members present

Mr Tim Yeo, in the Chair

Colin Challen
Martin Horwood
Mark Lazarowicz

Dr Desmond Turner
Joan Walley

Memorandum submitted by Energy & Utility Skills

INTRODUCTION

This response has been prepared by EU Skills on behalf of the cross-sector Renewable Energy Skills Group. The Renewable Energy Skills Group comprises AssetSkills, Cogent, ConstructionSkills, ECITB, EU Skills, Lantra, SEMTA and SummitSkills. However, whereas all SSC's/SSB's in the group are supportive of this response, it does not necessarily reflect some of the wider sector specific environmental matters or work being undertaken with a number of Government departments. Some SSC's have therefore submitted additional responses referencing these sector specific points.

SUMMARY

- Renewable energy is key to the UK's low-carbon energy future. There is a need to radically reduce greenhouse gas emissions, as well as diversify energy sources. It's about energy security, becoming more competitive, and creating the economy (and jobs) of the future.
- It is in this context that the sector-orientated skilled workforces can make an impact and contribute not only towards the UK and EU targets of 20% renewable energy by 2020, but also support the economic recovery.
- Renewable energy technologies have the potential to create a significant number of skilled jobs and to diversify and extend many existing jobs. With often lengthy lead-times to competence, a proactive investment in skills is needed.
- For employers and training providers willing to invest, the opportunities relating to renewable energy technologies are significant. However without a proactive approach to skills investment, to ensure the UK can provide the skilled workers that industry needs, these opportunities could migrate overseas and the UK will fail to maximise employment opportunities.
- A strategic approach to meeting these skills challenges is therefore required, with Government and industry working together across the emerging sectors. There needs to be joined up thinking with the various policies and funding mechanisms both consistent and complementary.
- There also needs to be a better link between policies derived at National Level and plans for implementation drawn up at Regional Level. We recognise that co-ordinating across the regions is more complex, but feel the strategic direction being provided by the Devolved Nations will provide more coherent and focused action and greater progress. This approach will also mitigate against the duplication in funding that is a current symptom of the regional, bottom up approach.
- There needs to be a clearer definition of what we mean by "green jobs", what is in scope and what is not. The Environmental agenda, incorporating Low Carbon, Renewables and Energy Efficiency targets, needs to be treated as mainstream across Government departments, both at national and local level. Knowledge and experience should not be limited to a small number of "experts" or specialised departments. All have a part to play in addressing the environmental challenge.
- The Sector Skills Councils (SSCs) and Sector Skills Bodies (SSBs), recognising the need for collaborative working have agreed a shared commitment to create a Renewable Energy Skills Strategy. This skills strategy will provide a better understanding of the future renewable energy skills requirements, the increased training capacity required and the nature and timescales of related job opportunities and up-skilling of existing workers, whilst recognising the specific nature of some of the job requirements in each of the sectors.
- In reality without this research and a further programme of work to address the issues it will highlight, it will be difficult for the UK to maximise employment opportunities related to renewable energy technologies.

TACKLING THE RECESSION AND MAXIMISING EMPLOYMENT OPPORTUNITIES

1. In the current economic climate most employers are focused on today, rather than proactively thinking about the potential skills needs for the future. There needs to be some form of economic stimulus and/or Government directive combined with reassurance that "policy" is or will be turned into "effective demand", if skills investment is to be boosted.

2. However, it is critical that the skills agenda is industry led, as recommended by Lord Leitch in his 2006 report¹ on the UK's future skills needs. To help employers understand what they need to do, there is therefore a need to articulate what the 2020 target means in reality ie short term achievable targets, which together with a route-map will demonstrate that the environmental agenda provides a sustainable future.

3. The time lag inherent in developing new skills capacity, needs to be considered with the objective of providing early visibility of requirements and helping employers and the supply chain develop resources in a timely manner.

SKILLS BASE

4. Getting the right skills in the right places, at the right time will be critical in delivering the 2020 renewable energy target. For emerging technologies, determining the skills requirements is especially challenging because there are uncertainties about the exact nature of skills required, the timing and extent of deployment, and, hence, when the skills will be needed.

5. The core skills of workers in the energy-related sectors are highly transferable, being based on a thorough grounding in technical competence. It is these sectors that, with additional and specific modular based training, will need to provide many of the skilled workers to support the deployment of renewable energy technologies.

6. Recognising this we need to ensure the UK has the appropriate number of skilled people in the conventional energy-related sectors with transferable skills, to provide the flexibility to accommodate the skills needs of emerging renewable energy technologies.

7. In terms of potential barriers and constraints it is important to consider the skills requirements of the whole supply chain. For example, designing and manufacturing new technologies is no use if there are insufficient skilled people to deploy and maintain the plant.

8. As with research and development, the investment in skills needs to be up-front to accommodate the often lengthy lead times to competency. The production of competent, skilled workers can take between five to 10 years from leaving school. It is clear that if we don't proactively recruit and up-skill workers, jobs will migrate overseas.

9. The interdependencies between the renewable and conventional energy activities need to be considered. There is certain to be major activity in, eg nuclear power engineering and construction at the same time as investment in renewable plant construction is required.

10. In addition, the energy-related sectors face a major challenge in addressing the impact of an aging workforce, due to the skewed age distribution. Losses to retirement will increase sharply through the 2010s. The demand for skilled workers is therefore rising at a time when retirement is set to take an increasing toll and the labour pool is static, or even decreasing. This is exacerbated by the skills demands to deliver substantial grid upgrades and new infrastructure, including the offshore grid.

FLEXIBLE FUNDING MECHANISMS THAT PROVIDE CLEAR UP-FRONT INCENTIVES

11. We recognise that there is some Government funding available, but this does not fully address the needs, particularly for upskilling existing workers. Additionally, there needs to be better signposting. Seen from outside, the training landscape and funding structure is too complex for effective engagement with all the stakeholders. Individual employers are confused in terms of funding available, how to obtain the funding and routes to training, leaving them unable to navigate the bureaucracy in the system. There is a need to remove bureaucracy and simplify funding mechanisms so that employers better understand the options available.

12. This situation is further exacerbated, for UK-wide employers, where the funding structure differs across the devolved Nations. Employers and Sector Skills Organisations are faced with multiple stakeholders and the frequent need, especially in the regions, to pursue the same initiative many times over, often with different results.

13. There needs to be a simpler approach, with easy access routes developed, and services delivered through structures that are clear to understand, even if they are complicated inside.

14. A further barrier is that understandably Governments need to see evidence of need before funding is provided, but for emerging industries where skills investment is required prior to jobs being available this is almost impossible to evidence.

15. We would specifically recommend that Train to Gain (T2G) support (in England) should be better focused on employer's needs and on modular qualifications. The current performance of T2G in the energy-related sectors highlights how the technical nature of the energy-related sectors means it is difficult for brokers to understand requirements which results in an ineffective interface with employers.

¹ Leitch Review of Skills, Prosperity for all in the global economy—world class skills. Published 5th December 2006

16. Funding should also focus on full job competence rather than using qualifications as a proxy for skills. This will help to increase the productivity of newly trained workers quicker and restore employer confidence in the educational system. T2G can be an effective mechanism to support the environmental sector but requires a much more informed interface with employers before this potential is realised.

INCREASED TRAINING CAPACITY ACROSS THE ENERGY SECTOR

17. Traditional funding mechanisms are one of the reasons why further education colleges and universities are not fully meeting the needs of the energy-related sectors. Too many educational institutions are focused on courses that are easier and more cost effective to deliver, leaving the energy-related sectors short of training places. Further education should be more employer demand led, with funding focused on areas where there are demonstrable skills shortages or gaps.

18. To support the required recruitment and training the underlying capacity to train needs to be expanded. In turn training providers need to develop their short, medium and longer term investment plans to grow the capability and capacity to deliver the required people and programmes. It is acknowledged that that there are wide geographical variations in the quantity and quality of renewables training provision in the UK.

19. Recognising that a major challenge in increasing the number of apprentices and skilled workers is the lack of training capacity across the UK, the energy sector require ongoing support to its existing and proposed (Power) National Skills Academies so that training capacity can be grown and the capability of the workforce ensured for the long term.

ATTRACTING SUITABLY QUALIFIED STUDENTS INTO THE ENERGY SECTOR

20. The energy-related sectors are predominantly employers of science, technology, engineering and mathematics (STEM) disciplines. Ensuring there are adequate numbers studying STEM subjects at school and university is an imperative. We welcome the Government initiatives to increase STEM education, but this must be strengthened to enable a step change. Key targets should be to increase the numbers of school leavers equipped to enter apprenticeships and to improve the supply of graduates in critical subjects.

21. Schools, rightly, promote university to their pupils and pride themselves on the numbers of students who move on to higher education. However, this is not the only route into employment in the energy sectors. Other entry routes, and their potential for those who take them, are less well promoted.

22. Opportunities need to be better articulated through career advice. This means also that significant changes in school culture are needed to encourage young people in to the sector. Teachers/careers advisors need to give guidance on both academic and vocational routes into work with equal vigour.

IMPACT OF THE RECESSION

23. It is still unclear the extent to which environmental goals are taking a back seat due to the current economic climate. On one side, meeting the 2020 targets and rising fossil fuel costs are making renewable energy more appealing. Conversely the need to reduce expenditure and rising energy costs are creating pressure to consider the cost of renewable energy technologies—and its impact on the fuel poor in particular.

24. It is recognised that within some sectors, renewables will offer significant potential for new jobs, however as most renewable infrastructure assets are project financed, the freeze in lending between banks may delay or prevent these projects proceeding. This in turn will reduce or delay the creation of new employment opportunities.

CLARITY ACROSS NATIONAL/REGIONAL THINKING

25. Across the Nations and Regions there is a considerable amount of work being undertaken in support of the environmental agenda. For employers and SSC/SSB it is difficult to meet the differing requirements of these individual initiatives. This work would be more effective if there was a stronger more strategic lead centrally, to ensure a more cohesive approach and better clarity over how initiatives support National Policies and targets.

26. We recognise that the regions are more complex, but believe the stronger lead taken by the Devolved Nations is resulting in a more effective implementation and clarity over skills delivery.

SSC COLLABORATION

27. The range of renewable energy sources and technologies is diverse and complex spanning a number of Sector Skills Councils and Sector Bodies. Recognising the need for collaborative working the respective Chief Executives² have agreed a shared commitment to create a Renewable Energy Skills Strategy. Working in this way fully utilises the sector specific knowledge and experience, whilst at the same time providing a single interface for renewable energy skills-related issues.

² AssetSkills, Cogent, ConstructionSkills, ECITB, EU Skills, Lantra, SEMTA and SummitSkills

28. A cross-sector Renewable Energy Project Group has been formed and a Skills Action Plan developed. The plan outlines the steps required, methodology and outcomes, to develop the Renewable Energy Skills Strategy. The project is adopting a process that mirrors the proven mechanism for developing a Sector Skills Agreement (SSA), to provide a robust framework and give confidence to the research. The process will include:

- (i) Assessment of current & future skills needs—skills analysis.
- (ii) Mapping quality and availability of training provision—supply side analysis.
- (iii) Gap Analysis of training requirements and training provision.
- (iv) Development of practical, workable and cost effective solutions to address identified needs.
- (v) Action plans to tackle the short, medium and long term priority skills issues.

29. The aim of the proposed Renewable Energy Skills Strategy is to take account of the requirements across the supply chain from initial research, to installation and maintenance and disposal at the end of life. Consideration will also be given to both large scale technologies and micro-generation. By using processes aligned to those used for SSA development, it will be possible to build upon the work already undertaken to produce SSAs avoiding duplication. Although the solutions for different parts of the sector may vary, bringing the work together in this way will ensure consideration is given to the whole supply chain and that all are working to the same targets.

30. The Renewable Energy Skills Strategy will provide a better understanding of the future renewable energy technology skills requirements, the increased training capacity required and the nature and timescales of job opportunities in the energy-related sectors. In reality without this piece of work and the accompanying action plan, it will be difficult for the UK to maximise employment opportunities in the energy-related industries.

31. All of the organisations in the cross-sector Renewable Energy Project Group recognise and have agreed to contribute resource in support of the deliverables identified in the Skills Action Plan. However, to provide the appropriate focus and support the additional research requirements, it is recognised that dedicated project management and research resources will be required. The total cost of this additional resource is estimated to be £150k.

32. Despite ongoing discussions with a number of Government departments it has not been possible to secure the necessary funding. Work is still progressing, but not at the pace needed to fully answer questions in this inquiry and inform the wider environmental debate.

33. Developing the skills strategy is the first step, it will identify clear actions that are required to support the renewable energy skills agenda. However, the real value of the collaboration will be in the next phase—developing and implementing cross-sector solutions to address the skills issues. When considering support and funding for phase 1, it is important to recognise there will be an ongoing requirement to resource the project and ensure that it can progress from research to implementation without a time delay whilst funding is sought.

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Witness: Mr Tim Balcon, Chief Executive, Energy & Utility Skills, gave evidence.

Q279 Chairman: Good morning and welcome to the Committee. Thank you very much for coming. I am sorry you have had to wait a little while but some of us had trouble getting here this morning so we started few minutes late. Can I begin by asking about the National Skills Strategy which was announced when the Government published its Low Carbon Industrial Strategy. Have you been involved in preparing this?

Mr Balcon: No.

Q280 Chairman: Do you think it is going to work? Will it be effective?

Mr Balcon: No.

Q281 Chairman: Why not?

Mr Balcon: I have grave concerns over its ability to respond to a part of the economy that is very fast moving and requires a flexible here and now response. It appears from reading the document that it engages with the current skills system which is a very

cumbersome, slow, prescribed, policy and funding driven process and I think it needs to change. It needs to better reflect what employers actually value rather than what the policies would want them to. For me, the skills infrastructure is not aligned to respond to the flexible and changing needs of an energy-related sector.

Q282 Chairman: You say that it does not reflect what employers would actually value, what do you mean by that?

Mr Balcon: Employers are finding it very difficult to engage with, if you like, Train to Gain, for example, which is a very clear offer to them. They have found it almost impenetrable to get any kind of meaningful response from that. The RDAs clearly are regional organisations but many employers do not see regional boundaries and, therefore, are confused about who to speak to, where to go for advice and guidance and where to get the most meaningful help from. I think it requires an employer who has, if you

like, sophisticated systems in place to be able to understand how this works to get a response from it, and even then it is not always clear and not always easy. The employers that we speak to that are very considerable in terms of the energy sector would say that it is quite hard at this moment in time.

Q283 Chairman: The employers you speak to come from which industries, broadly speaking?

Mr Balcon: We represent the electricity, gas, water and waste management companies. If you look at our board, we have members from National Grid and from EDF Energy, for example. We have a strategic group which includes most, if not all of the power generators, a lot of the network operators and certainly includes National Grid transmission and distribution. Almost all of the asset owners and very many of the contractors of the supply chain are associated with that as well. We also lead on a cross-SSC Forum which includes other SSCs that have a relationship with the Low Carbon Industrial Strategy. That includes seven Sector Skills Councils. You are looking at ConstructionSkills and AssetSkills, et cetera. We have a wide reach across all of those Sector Skills Councils that can have an impact on this particular agenda.

Q284 Joan Walley: You are painting a bit of a bleak picture. In view of what you said about not having been involved, to what extent do the Low Carbon Transition Plan and the Low Carbon Industrial Strategy provide the mechanisms and milestones for delivering on the green skills agenda? I appreciate you said that you had not been involved but can you see any merit in what is being proposed by Government in terms of how it relates to skills and the training agenda?

Mr Balcon: Of course, you can always extract value from anything if you try hard enough. I think what I am saying and, in a sense, what you are hearing is my frustration about trying to engage the skills system with the needs of the energy sector. We have a number of frustrating examples. If you take smart metering, for example, it is a classic example and serves the purpose very well. We are looking at changing 23,000 meters per week for the next eight years. We have tried to engage with the LSCs and the RDAs to say we need a response which is different from what they are currently offering and the response has come back saying, "It does not fit with our agenda because it does not fit with the targets or the qualifications that we have a remit to achieve". In order to meet those kinds of numbers it really needs somebody to change the remit or the approach to skills that is taken. If you look at Train to Gain there is value there that you can use and I am sure there will be employers in the energy sector who will say, "Actually, I have got good value from this". My point is that it is ad hoc and not strategically joined up. It needs a national strategy on skills related to this agenda to be driven down and implemented through the regions rather than a bottom-up geographical response to talk to local employers to find out what they need. For that

reason, and I do apologise for the fact that I am painting quite a black picture here, things need to be said and need to change in order to respond to this.

Q285 Joan Walley: Would you not have expected your organisation to be having that input to make that point of view known to Government when drawing up these two strategies?

Mr Balcon: Yes.

Q286 Joan Walley: So what is wrong institutionally that there is not that contact between yourself and those responsible for the new Skills Strategy?

Mr Balcon: If I can step back and just explain the origin it might explain where we have got to here. It is six years now since the Sector Skills Councils were established. They were established as employer-led bodies on the basis that employers would determine what remit and footprint that would serve. Within that time this agenda has emerged. It has almost come through the middle of this. We have been saying in Energy & Utility Skills that actually this is a key sector and it requires some leadership on this. We tried to engage the SSDA, the predecessor to UKCES, to put some resource in to see what it would look like if we had a Skills Strategy and we were not successful in doing that. We have been making representations to UKCES and also to BIS saying that there needs to be some leadership, a cross-sector group. Your point is well made that says why is that dialogue so hard and I can tell you from my perspective that I do not think it is as effective as it should be. You can sit back and wait for things to happen or you can just get on with things. What we have done is we have brought together seven Sector Skills Councils and said we would all be happy to commit some resource to make sure this will happen. We have started to engage that and we have a Renewables Group, which includes seven Sector Skills Councils and also includes the four nations, which appears to be working well. We have just received some funding from DECC which is ostensibly to develop the Skills Strategy. That is happening but I wish it had happened a little bit sooner. If we can start to give that group some authority and remit and get behind that group then I think the potential to do something is really quite meaningful.

Q287 Joan Walley: In relation to what you have just said in terms of what is missing from the Transition Plan and the Industrial Strategy, you mentioned Train to Gain as though it was not quite hitting the nail on the head with respect to the green jobs skills agenda, but in terms of the new initiatives like, for example, Flexible New Deal and the other government programmes where a large number of employers are coming into the whole employment arena, have you got linkages there with this new skills green agenda?

Mr Balcon: Train to Gain needs to change in order for it to be effective in this agenda. We have made that point and still hold that point. I am more enthusiastic or positive about the New Deal. We have what appears to be a good dialogue with Jobcentre Plus that says where the potential is there and they seem

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much more open-minded to looking at the flexibilities required in order to engage with this agenda properly. We are still at the early stages yet but the dialogue is positive.

Q288 Joan Walley: Have we left it too late to develop the skills that we need?

Mr Balcon: No. We have not let left it too late, there is still an opportunity to do something. There are two approaches to this, both of which need to be done together. There needs to be a step back and a proper worked through strategy that needs to start from the UK and then implemented down into those geographical areas. It is very helpful for devolved nations to develop their own strategies because that gives us some clear guidance in terms of the kinds of policies that they will do. At the same time, employers are asking for things here and now. It is okay developing all of this thinking and current action plan, but the things that need to happen here and now need to be supported. All that would be required in order to meet that is just some flexibility with the current skills system and the funding to pump-prime some of these areas, or just some incentives to bring employers around the table to do this. The National Skills Academy for Power, which appears now to be moving forward slowly, is a really good mechanism by which to develop and implement some of the strategies necessary to meet these demands.

Q289 Dr Turner: In your written evidence¹ you say “it is critical that the skills agenda is industry led” which goes against a lot of other evidence we have had. Why do you think a demand-led Skills Strategy is most effective? Perhaps you could base your answer around the smart metering programme which could be a very good example of the applicability of the two different approaches.

Mr Balcon: The people who understand the market best are the people who operate within the market. If you look at the potential for new jobs, new businesses, for economic growth, it can only be done by the people who are willing to commit and ensure some entrepreneurialism around what that means. They are the people who have the best understanding of what their skills requirements are. It is incomprehensible to me to believe that people like myself or people in government would actually be able to tell them what skills they require.

Q290 Dr Turner: Coming back to smart meters as an example, perhaps you could tell us in practice how this example would work. It would seem to the innocent that what you want if you are going to install smart meters is a lot of properly skilled electricians with just a particular briefing on the nature of smart meters. If the basic Skills Strategy produces lots of really well skilled electricians, have you not got what you basically need?

Mr Balcon: I am not sure I understand how you got those two points together. When you are talking of a large volume of work associated with smart metering, what the employer will determine is how best to do

that. They will look at the current qualifications. We are not looking at generating new qualifications because in reality most of this energy agenda is not new jobs, it is just existing jobs with an increase in scope. This is why it does not chime particularly well with the skills agenda because at this moment in time the skills agenda requires qualifications that are of a certain size. On smart metering, what an employer will determine is how many meters need to be changed in a day and what skill set will be required. Would that be a fully blown competent electrician or would it be somebody who just has the skills to change those meters? I would say it could probably be either and it depends on the size of the company and the scope and how many meters they are actually changing. What you have there is a need for a qualification to reflect their working practices as well as the skills sets that they would require.

Q291 Dr Turner: So you would want a specific certificate for smart meters which would not necessarily embrace the whole scope of electrical work?

Mr Balcon: That may be a possibility, absolutely.

Q292 Dr Turner: How does industry feed into the Sector Skills Council to express requirements like that?

Mr Balcon: There are many routes into doing that. In a sense, the qualification is a portal to competence. The starting place there is the National Occupational Standards and do they reflect what employers manage to do on the ground, this is the point. It needs to fit with those working practices and then the qualification will follow. As I keep saying, this may not be a full qualification, it may be just a part of the qualification. It could be any tweak to the existing National Occupational Standards and that may be all that is necessary and at that point then you say, “How many people do we need now?” If we take the numbers as read, the 23,000 meters to be installed every week, it will probably require about 1,200 to be operating just on meters alone and then you say, “Where do those people come from?” and you start to engage with the Jobcentre Plus or the New Deal programme to say there is an opportunity to train somebody specifically associated with that skill set just to do those things. In time that may extend to a full-blown electrician. That is an example of how it might work rather than being definite. The employers are driving this and they need to understand what their requirements are and sometimes that is worthy of debate. We have to reflect the qualifications of bite-sized chunks of learning that they would require for them to be able to do that.

Q293 Dr Turner: Of course, a lot of the companies involved will be small businesses. Are you satisfied that there is enough training support for small businesses to help them through it?

Mr Balcon: Small businesses will always be hard. This is not going to be an easy one to solve. The way to do that, if you take smart metering on the gas side, which is probably a better example and I can give you a better solution, is it would require somebody

¹ See Ev 82

to be competent in gas work. We have a Gas Safe Register with 120,000 gas engineers and it would not be too difficult to reach those micro-businesses and explain what their competence requirements would be in order to be able to do this. The difficulty is, of course, if you impose difficult qualifications or licence to practise systems on top of that you almost prohibit their ability to engage in this market. It is about providing fit-for-purpose and effective qualifications and a learning process for them to get to that point.

Q294 Martin Horwood: Can I follow on from Des's point and your theory that the industries themselves will be able to work out what the demand for skills is. I will quote you a really parochial example here. My boiler packed up last week and I went to a very reputable local plumbing firm and asked them about replacements and I said, "Can you look into combined heat and power", being a bit greenie. They did not even know what it was. We are only months away from commercially available combined heat and power being on the market. There are probably millions of the kinds of micro-businesses that Des talked about out there who simply are not aware of what is coming down the track, so how can we rely on the industry to identify the skills? Surely we need a much more proactive approach from somewhere, from you or from government, to try and map out the pathways that are coming down because it will transform their businesses.

Mr Balcon: I think that is the point. I was also encouraged to speak to SummitSkills who on that particular example would be able to explain the fact that they deal in qualifications associated with those technologies that you are asking for here. Absolutely, it requires leadership. Employers, generally speaking, are here and now, particularly micro-businesses. It requires somebody to understand what they are asking for but also to step out and say what does the future look like as well, which in a sense is a priority for the Skills Council to be able to do. We can engage with a skills system that would be ready and able to respond to future needs but also there is a here and now need as well. I do take the point that just an employer-led process is incomplete but you really have to start there.

Q295 Dr Turner: What are your feelings about the Government's role? If there was more active Government intervention in the Skills Strategy, can you see hazards there?

Mr Balcon: I would encourage an intelligent collaboration between Government and employers. The example I give is in power generation. Through the Power Sector Skills Strategy Group we brought employers together and they identified that they would need to replace 80 per cent of their technical workforce in the next 15 years. That is quite an astounding number. If they resorted to their current approaches to skills it would be on an individual basis and you would not get the kind of response that would give the safety and security of supply which is what the rest of the UK is asking for. Where Government can come in is encouraging that

collaboration. Collaboration is not a natural event for employers, it is something that needs to be worked at and resourced. What I would encourage Government to do is to say, "We can provide some incentive for collaboration, for employers to work together so they can develop the system" because the universities do not provide enough engineers. Stephen Holliday from National Grid only a couple of weeks ago mentioned that. Despite the size of these employers, not one of them is big enough to alter the HE infrastructure, ditto with FE colleges or even private training providers. There is a clear relationship here that needs to happen between employers who need to articulate what their skills requirements are and an engagement with Government to incentivise that collaboration but also to respond to those strategic needs.

Q296 Dr Turner: If the Government does not get that right?

Mr Balcon: If it does not get that right I think what employers will do is revert back to the current way that they meet their skills requirements. The numbers explain the fact that there is such a dire training need, particularly in power generation at the moment.

Q297 Colin Challen: I have nothing against hairdressers, some of my constituents are hairdressers, but it seems to me that if we substituted the word "hairdressing" for "power and energy sector" your answers this morning would probably be just as good. I cannot see a qualitative difference between preparing for climate change and a bad hair day. What is happening in this sector that is so different that you could actually put your hand up and say everything is being done that needs to be done to address climate change within your remit?

Mr Balcon: I think the first point is to articulate what that looks like, and I do not think we have yet. We understand there is a huge opportunity and an absolute need to respond to climate change, but the bit that is missing is to say how we transfer that knowledge into meaningful activity on the ground. When you ask employers are they engaged, is this something of interest to them, absolutely it is, it is a key imperative to them, but the bit that is missing is a strategic response to that requirement. I keep saying, and I think it is a mantra now within these conversations, we have to have a national Sector Skills approach to energy. That needs to be understood and bought into by the key employers who will show leadership in this agenda. They are the ones who are going to drive this. Nationally they will be the big employers. They will engage their supply chain into this. If they engage into that they will drive it themselves anyway. The bit that is missing is to say, "I hear all the stuff about skills but I find it hard to engage with. I don't really hear the stuff that I need to do that would help me and, therefore, it's hard". Employers do not have a remit to develop a National Skills Strategy, that is our role. I think we will be very successful. As I have mentioned, we pull the employers together and say, "Let's start with what we need" and that starting

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point is understanding how many engineers are required just to satisfy replacement need, let alone moving on to this agenda. We have a clear articulation of what that means here and now but what we need to move towards, which is what we will do through the Renewables Group, the cross-sector group, is to say, "Let's have a consensus on some of the key drivers and some of the key requirements that we need for this agenda" and then we will work out how to implement that on the ground.

Q298 Colin Challen: Is not the word that is really missing "planning"? Basically we are relying on signals, forecasts, engagement, collegiate behaviour, people coming together and having a chat in various places. There is no plan, it is just reliant on everybody hopefully pulling together because they feel perhaps inclined to do so if the market conditions are right.

Mr Balcon: I could not agree more. That is why I would say engagement with nine individual RDAs to respond to this is not going to be an effective solution. No doubt it will give you some models of best practice but it is not going to meet that strategic need.

Q299 Chairman: Do you have the sense that employers are articulating sufficiently clearly what their needs are, or is that part of the gap in this whole process?

Mr Balcon: I think employers do have a good understanding of what they would like to do although it may not be accurate at this moment in time. In a sense, this is an agenda where we need to show some foresight and that foresight inevitably will be wrong because things will change. It is about getting employers to say what needs to happen to make a response to this now and become engaged in that plan so that plan is flexible and can respond to it. Employers are more sophisticated in their approach than perhaps they are given credit for.

Q300 Chairman: They are communicating that adequately?

Mr Balcon: The mechanisms E&U Skills use is through the Power Sector Skills Strategy Group and National Skills Academy for Power, which is the mechanism by which to respond to this.

Q301 Chairman: Looking at renewable energy, is there the leadership we need in renewable energy skills delivery to make sure that Britain can achieve some quite challenging targets on renewables?

Mr Balcon: Again, I think it needs a strategic plan.

Q302 Chairman: We have this extraordinary situation where we have got the most natural potential for offshore wind and yet none of the kit that is required for offshore wind turbines is built in Britain.

Mr Balcon: That is right.

Q303 Chairman: Why do you think that is?

Mr Balcon: It is difficult to say. If I can reverse the question a little bit. If I give the example of Germany, I think it is accurate to say that Germany leads the world in terms of photovoltaic panels and maybe the reason for that is because the incentives that were placed before them by government were quite appealing for them to set up there so in a sense they have a market-driven response. Any response that we have here or incentives have to incentivise the market because the market will pull employers into this because they will want to be able to respond to that. I think the key to that is to find out those employers who are willing to show some leadership and be early adopters of those technologies and then to use those employers and support them with their skills needs. I also suspect that will require some pump-priming to help them with that thinking as well. Again, it refers back to a previous point I made about the collaboration between Government and employers and I think there is a clear partnership that is needed there.

Q304 Chairman: Just staying with offshore wind for a moment. We are not talking about growth of ten per cent a year, this is an industry that is going to have to be about 15 times bigger over the next ten years than it is right now. We have got double ROCs already agreed for offshore wind. Are you saying there need to be additional incentives to get British employers interested in training people who can make the kit that we are going to need?

Mr Balcon: There are two parts to the question. The first part is about what attracts inward investment and what attracts employers to be able to invest in new business around this, and I have to say my knowledge does not extend to a point where I can speak with any authority. At one point I used to work in an inward investment role and one of the key triggers for inward investment is having a skill base for people to develop their businesses within. I am unsure at this moment in time what that offer will be. I suspect we can do an awful lot more in incentivising employers to come and locate in a particular area, associated perhaps with a university or an FE college, and a clear commitment that says if you are training people within this remit then we can help and support you do that. I imagine that would be very attractive to inward investment in this area.

Q305 Chairman: So how will the Renewable Energy Skills Group fit into the National Skills Strategy?

Mr Balcon: I am hopeful it will actually develop it. That is a really good opportunity to have a well thought-out and intelligent strategy. What I would like to happen is for people to get behind that group and support it. It has been very difficult because we have had to scramble around for resources to be able to do that. Perhaps part of the answer is how the Sector Skills Councils are set up in the first place. If you are going to do this you may as well get behind it to resource it. I do not think there is a better opportunity than supporting that group.

Q306 Joan Walley: It is not just a question of the Renewable Energy Skills Group fitting into the National Skills Strategy, is it not also a case of how each of those fit into the research and innovation and research and development strategies? It seems to me that there is not ownership around the table of all the different constituent parts who need to understand what direction the green energy agenda is going in order that everything can then be put in place, including the skills.

Mr Balcon: I think that is right. Skills is very often one of the afterthoughts, so I take your point. There needs to be a clear inward investment strategy, clear research and development. I agree with your point that they need to be joined up. The other thing about the cross-sector Renewable Energy Skills Group is I would say that is not about fitting into the strategy but that group should develop the strategy.

Q307 Joan Walley: In terms of which groups are developing the strategy, what can we learn from the devolved administrations? What are the issues arising out of the different Regional Development Agencies and the different examples of how this agenda is or is not being taken forward around the country?

Mr Balcon: Within the Renewable Energy Skills Group we have just seconded our Scottish manager into Scottish Government to work specifically on this agenda. That means we have some clear linkages with the Scottish Government. We can bring the expertise that we have but also we can cross-fertilise that with, if you like, a nation's requirement on this agenda. One of the examples in terms of wind power is Scotland had geared up for ten per cent in generation coming from renewable sources but that is likely to be 50 per cent now from Scotland. It is that understanding and therefore we can get in early to understand what those skills requirements are. There are some leads being taken here and it is taking the best advantage of them.

Q308 Colin Challen: What is your view about the availability of training facilities to train the next generation of workers in this sector appropriately for the new needs that we have? Do you think that the Low Carbon Industrial Strategy is addressing the question of training facilities adequately?

Mr Balcon: On the issue of training facilities I do not think there is a current infrastructure. In a sense, the development of the National Skills Academy for Power is to correct that. There are actions being taken fully supported by employers and, in fact, employers are investing significantly in the National Skills Academy for Power. The second part of the question is probably the reason why we have not got a skills infrastructure because the way that FE colleges are funded is about developing qualifications. Your example of hairdressers is one that says it is much easier and cheaper for an FE college to train people in hairdressing than it is to invest in engineering or renewable energy skills. The other thing associated with that is my issue with going down a regional agenda. When you look at the big numbers that a national strategy requires to train

people, those kinds of numbers, you can say there is a real need and it is pretty obvious to all concerned, but when you split that down into local areas that number is not that big and it is not big enough to incentivise an FE college to invest significantly in capital infrastructure, et cetera, which is why we need a different response. I think that response will come from the National Skills Academy for Power.

Q309 Martin Horwood: In some of your answers you seem to be implying that what we are really talking about is a fairly narrow field of specific engineering expertise. Surely green jobs and green skills are going to apply across the whole wide range. We have heard quite a lot of evidence calling for a broader green skills agenda which could address everyone from Civil Service procurement managers to finance professionals and management consultants, a whole range of people not just at the beginning of their formal training but in continuing professional development as well. Do you think that broad green skills agenda is something that would be valuable and you would be involved in supporting?

Mr Balcon: I think we are involved in supporting it. This is part of the rationale behind the cross-sector Renewable Group, exactly to do that. That is where we have the views of the seven Sector Skills Councils who bring their particular expertise to say in terms of managing buildings that would be AssetSkills, in terms of plumbers using microgeneration it would be SummitSkills. They have clear sector strategies, and have had for some time, but they have just been relicensed and gone through a National Audit Office approach to make sure they are fit-for-purpose. It is about bringing those together, which in a sense is the work we are doing now to bring that huge agenda and what it will look like.

Q310 Martin Horwood: To pick up on your last phrase, what exactly will it look like? You have got all the relevant people together perhaps from the different skills sectors and you are talking about it, the need for a strategy, but in practice what will this look like? How will this change the way somebody like a procurement manager is trained or will get professional development?

Mr Balcon: There are two parts to the process. I think we are all sceptical of the information that is coming out saying that it will create X thousands of jobs. When you go and speak to employers I am not sure where those numbers have come from. The first thing is to say what kinds of jobs we are talking about here because everybody I speak to is saying it is not necessarily new jobs but an extension of scope. It will create new jobs because of the volume but it is not new jobs doing new things in renewable energy, it is somebody who is using their existing skills building up to that.

Q311 Martin Horwood: I was not so much talking about creating new jobs as changing the existing ones. How will it actually deliver?

Mr Balcon: That is the point. The first thing is to understand what that looks like and the second thing is to determine what the training provision would

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look like to be able to respond to that. In a sense, that is a piece of work that we have got funded by DECC to do exactly that.

Q312 Martin Horwood: If I was an employer looking out for some incentive to develop the skills of the people in my employment, what kinds of incentives do you imagine might be coming down the track in a few years' time as a result of the work that the Skills Group is doing?

Mr Balcon: What I would like them to be able to see is a clear line of who it is that is going to give them the best advice, which I would say is naturally the Sector Skills Councils because they engage with employers from a national and local perspective as well. Then it is the ability to tap into a local training provision that gives them the kinds of skills that they are asking for. I do not think it is complicated, I just think it is hard to do.

Q313 Martin Horwood: I have got a big engineering company in my constituency called Design Installation Systems who do the infrastructure for buildings. Clearly the low carbon economy is going to change the way they work. This is a company that invests quite a lot in apprenticeships and things like this and they are kind of tearing their hair out at the way in which apprenticeships work at the moment. If I just go back to them and say, "Don't worry, the Skills Group is going to tell you where to get better advice", they are going to say, "Martin, what are you talking about?" There has got to be something more concrete for a company like that to see how things are going to change.

Mr Balcon: Taking your point about apprenticeships, I think it is about the current system that says, "an apprenticeship must look like this" and, therefore, we try to squeeze employer need within that. I am saying with this agenda it has to be more flexible. The starting point is to say let us develop the qualifications in small units that would respond to what you would want your employees to be able to do. That is not difficult, that is something we can do and we have got the expertise to do that, but once we have done that it is about saying maybe there is funding available to be able to support that and then the local training provision will train people against that rather than training people against the skills policy which clearly is not aligned to what you are asking for here.

Q314 Martin Horwood: Okay, so the local FE college will be providing these new skills and qualifications perhaps, but what incentive could the employer have to send people on that? He has taken quite a risk investing in apprenticeships to start with because people poach his qualified apprentices shortly after they finish training without having made the investment. It is already quite a risky thing. Why should he spend more time sending his people off to

get these other qualifications? We understand the broader need, but as a business what incentive will he have?

Mr Balcon: There is a dual responsibility here. You cannot take away the risks of investing in training from an employer, and that will always be their risk to manage as and when. I do not think necessarily I would support that the Government should just pay for training because it is a risk. I do think this is where this intelligent partnership comes in. If you are saying you have some training needs, I would encourage you to talk to other local employers in that area and to say, "What we can grow here is the local economy but the quid pro quo is you will train people against the skills requirements that you will need and we will part support that in the collaborative effort necessary to engage with FE colleges to do the kinds of qualifications you are after" or, if it is universities, to get them engaged as well. That is where Government can help just to take some of the risk away from the decision that you want to make anyway.

Q315 Mark Lazarowicz: I apologise for popping out earlier but I had an urgent constituency matter to deal with. This goes back to a point that I think Martin mentioned at the beginning of his question. Is there not a tendency or danger that the green skilling will take place in particular professions and skills but you will not necessarily see a greening of the entire corporate approach of a business? How do you ensure that the greening is not left just to particular professions or skills but there is a central direction? Is that not important otherwise you are going to find the greening is always going to be a bit of an add-on for particular activities rather than integral to what is being done.

Mr Balcon: I think the opposite of the question is would you want to create something that is not necessarily there. The green agenda is often talked about as a new thing, as a new sector, an emerging sector, and it is going to create these jobs in this area, but it is not. My understanding, which I think is shared by all the Sector Skills Councils I have spoken to, is that it is just a natural progression of the economy. If employers are going to take advantage of that they would have to develop the green skills to be able to take those advantages because it is going to give them market advantage and that is where the incentive comes from. I would not subscribe to the sort of labelling of this as a "green" thing because it gives all sorts of incorrect connotations; it is a very clear business decision that says, "Are you going to take advantage of the market? If you do, it requires you to understand what skills are necessary to promote a low carbon economy".

Chairman: We have got some other witnesses we have to see now. Thank you very much for coming in and for your answers. We will certainly reflect on what you have said when we come to write our report. Thank you.

Memorandum submitted by the Federation of Master Builders

1. The Federation of Master Builders (FMB) is the largest employers' body for small and medium sized firms in the construction industry, and with 12,000 members is the recognised voice of small and medium sized builders. The FMB is committed to promoting excellent standards in craftsmanship, and assisting builders to improve levels of building performance and customer service.

2. Key Recommendations to the Government to Stimulate Green Jobs in the Building Sector:

- Create a new market in retrofitting existing homes by developing and implementing a clear delivery plan so that manufacturers and suppliers can invest early and with confidence in the development of the necessary supply chains.
- Provide detailed advice and information to householders about the entire process from start to finish about making homes greener and more energy efficient to help create the demand for “green builders”.
- Introduce a range of fiscal incentives such as stamp duty or council tax rebates, a cut in VAT to 5 per cent for on property refurbishment, and introduce low interest rate loans and grants to stimulate significant additional spending on domestic energy efficiency in the UK's housing stock.
- Develop a strategy for the integration of skills in a “whole home” target driven refurbishment process.
- Consider the need for “buildability” when proposing innovation and change in established practices among SME construction firms.

3. INTRODUCTION

3.1 Few now doubt that climate change and its impact on the world is one, if not, the most important challenge of our time. How we respond to this challenge is key to ensuring we leave the world in a better and more sustainable condition for future generations. The Government's commitment to reduce carbon emissions by 34 per cent by 2020 and by 80 per cent by 2080 set the benchmarks for the UK to develop a low carbon economy. The challenge to meet these ambitious targets requires a fundamental shift in thinking and practice not least in how we tackle the need to deliver a low carbon built environment. Given that buildings contribute nearly 40 per cent of the UK's total carbon emissions and the fact that 85 per cent of the UK housing stock will still be standing in 2050, builders have a key role to play in rising to the challenge.

4. CREATING A MARKET FOR GREEN JOBS AND SKILLS IN THE CONSTRUCTION SECTOR

4.1 The FMB is committed to working with government on developing policies to achieve its environmental aims but such policies need to be rooted in practicability because, otherwise, they are doomed to fail. Key to their success will be measures that promote, develop, and create new markets in which builders can respond to meet the new demands for greener and more energy efficient buildings. Recent research carried out for the FMB by the Environmental Change Institute at the University of Oxford reveals that building firms, product manufacturers and suppliers could stand to tap into a new market worth between £3.5 and £6.5 billion per year if the UK developed policies, skills programmes, and financial incentives to upgrade our existing housing stock to make it greener and more energy efficient. However, to create this new market to upgrade Britain's housing stock a stronger policy signal than that outlined in the Government's recent Heat and Energy Saving Strategy consultation paper is needed to start a process of innovation, skills development, and capacity building in the construction industry. The stakeholders involved in refurbishment are quite different from those involved in new house-building, with the smaller businesses in the construction industry being typically involved in repair, maintenance and improvement. Over £23 billion per year is spent on repair, maintenance and improvement works to existing housing, and much of this is a missed opportunity in terms of low-carbon refurbishment.

4.2 Additional incentives, and support for new financing arrangements for retrofitting measures, are essential if the Government is serious about developing a green economy and meeting its carbon reduction targets for 2020 and 2050. Without such measures, neither target will be readily achieved. In addition it needs to be augmented by a large-scale training programme in energy efficient building skills as current capacity within the industry is not sufficient to cope with the challenge ahead. At a time when unemployment figures are at their highest for well over a decade, this would provide much needed stimulus for the labour market. To achieve its aims the Government needs to set out a range of practical financial incentives and without these it is difficult to see how much progress can be made in the short term. Fiscal measures we would like the Government to consider as part of a wider “policy package” include tax incentives such as stamp duty or council tax rebates; a cut in VAT to 5% on property refurbishment; and low interest rate loans and grants to stimulate significant additional spending on domestic energy efficiency in the UK's housing stock.

5. TRAINING AND SKILLS

5.1 Skills provision for the UK economy is divided between 25 industry-led Sector Skills Councils (SSCs), working within a skills policy framework that is the preserve of the Learning and Skills Council (LSC) in England (and other bodies in Scotland, Wales and Northern Ireland). The relevant SSC for construction is ConstructionSkills (which is itself a partnership between the three separate organisations: CITB-ConstructionSkills, Construction Industry Council (CIC), and CITB Northern Ireland). The SSCs are largely directed by employers' needs so innovation in the national skills curriculum typically comes about when employers perceive a need.

5.2 The structure for training and apprenticeships comprises the National Occupational Standards (NOS), which are written by SSCs and define the development of individual qualifications—the Scottish Vocational Qualifications and National Vocational Qualifications (S/NVQs)—by Awarding Bodies (such as City & Guilds, Edexcel). It is these S/NVQ courses which are taught at further education colleges and, for apprentices, through working work based training. The skill sets of traditionally defined tradespeople needs to be expanded so that they understand enough of the low carbon refurbishment agenda to play their part effectively. This is likely to include a better understanding of how the interaction of different trades on-site can lead to loss of overall building performance (for example, airtightness can be compromised if wet plaster is stopped at the height of the skirting boards instead of reaching floor level; the performance of vapour barriers and insulation materials can be compromised by inaccurate installation and subsequent drilling of holes for pipes, ducts, wires and recessed light fittings). In relation to the installation of LZCs, the relevant SSC is Summit Skills, which has identified these new technologies as key to the future of mechanical and electrical building services, and begun a process of setting NOS for training on the installation of LZCs starting with a review of the short courses and other forms of training that have emerged during the early period of market development. This work confirms a widely held observation that innovation in skills and training does not start with S/NVQs but with short courses. Developing short courses into S/NVQs is an important part of mainstreaming the capacity to deliver new services.

5.3 The traditional focus of training has been on traditionally defined trades (plumbing, plastering etc) but the challenge of the new LZC technologies is to move towards training requiring elements of several traditional trades, as well as new competencies—the so called multi-skilling agenda. For a whole-home refurbishment that incorporates building works (for example, wall insulation, replastering) as well as energy systems design, the multi-skilling challenge is greater and includes a respect of project management (for example, optimal ordering of works on-site) as well as integrating demand reduction measures with energy supply technologies (for example, working out how much heating a well insulated property will require and sourcing heating system technology to match) This represents an additional shift of emphasis away from trades and specific technologies to an integrated “whole home” refurbishment focus, including some technical understanding of energy systems and building physics.

6. BUILDING CAPACITY IN THE BUILDING SECTOR TO DELIVER LOW CARBON REFURBISHMENT

6.1 For SME building tradespeople to develop green skills the sector's capacity to do this kind of work needs to be developed, almost from scratch. Experience of our members reveals that work to build capacity in the sector needs to take account of established custom and practice otherwise the endeavour will result in rejection by most practitioners. This insight is captured in the idea of “buildability”—a term intended to capture the reality of how builders operate and the fact that, whenever refurbishment is carried out, the contractors have to be confident of their ability to do the work and achieve satisfactory results, both for themselves and for their clients. If a low-carbon refurbishment strategy can be devised in such a way that it takes account of the need for “buildability”, then the strategy has the greatest chance of acceptance by the SME construction sector. Without it, it is likely to be ignored or subverted on the ground.

6.2 Key elements of the “buildability” idea are that building work needs to be made up of products and methods that have all of the following characteristics:

- Practical—solutions need to be relatively simple and quick to implement.
- Replicable—a refurbishment package needs to be something that can be installed many times over by the general population of installers, rather than being the preserve of some kind of elite.
- Affordable—unit costs may well come down over time and can be influenced by policy, but there is no point in promoting items at any given time which are out of reach of a viable market.
- Reliable—products and systems need to work well and be robust.
- Sellable—the costs and benefits to both customer and installer need to be readily understood.
- Available—specialist products that take weeks to order will not find favour among the mainstream: developing product supply chains is key.
- Guarantee-able—installers make their reputation on delivering things that work and, conversely, will abandon products or methods which lead to repeated call-backs and complaints.
- Profitable—firms need to be able to make a living from it.

6.3 Where new products are needed to help meet the low-carbon refurbishment agenda, the key stakeholders in addition to builders are the manufacturers and suppliers. Where new supply chains need to be developed, the key to success is a strong long-term policy signal from government. This will stimulate investment and strategic business developments, both among existing players in the market and among potential new market entrants.

May 2009

Witnesses: **Mr Brian Berry**, FRSA, Director of External Affairs, and **Mr Richard Diment**, Director-General, Federation of Master Builders, gave evidence.

Q316 Chairman: Good morning. Welcome to the Committee. Perhaps I could start with a general question. Do you think the construction industry is able to deliver a street by street retrofitting programme to provide existing buildings with the energy efficiency measures that are needed?

Mr Diment: That will be a challenge in the short term because of the availability of the skills and knowledge. We are certainly concerned that at the moment there is not clear enough direction about the timescales and about the volume of work for many parts of the construction industry, particularly the SMEs that we represent—which are of course the vast majority of the companies that will take on this work—to move forward on that. I will not get into the political difficulties of how you deal with, if you do a street by street approach, those who do not wish to co-operate with that process either because they will not pay or they cannot pay.

Mr Berry: Yes. Building on that, the Government has announced the Heat and Energy Saving Strategy which is a forward step in achieving the retrofitting of our existing housing stock, but the challenge is immense. We have 26 million homes and 85 per cent of those will still be in use in 2050 (when the Government has set the target to cut emissions by 80 per cent). The next step is not the aspiration but the delivery: how the incentives will be put in place, what measures will be put in place to retrofit the existing housing stock, and then we have to think about capacity in the construction sector. At the moment there would not be sufficient capacity, even if there was a green light to say: “Yes, go ahead. Do it now.” We would have to think about the matters of upskilling and training for builders to do the work. It is a huge challenge. If we started now, it would work out at about 24,000 homes per week to meet the Government’s target by 2030. We should not underestimate the task in hand. At the same time, though, particularly as we are in a recession, this is a brilliant opportunity for the construction sector to tap into this market and bring about upskilling and new job opportunities for particularly the small domestic builders that we represent.

Q317 Chairman: Are you saying that you need more people to be recruited into the industry, or is it that you have to retrain the existing labour force so that it can carry out this work?

Mr Berry: It is both.

Mr Diment: It is a mixture of both. The addition to the skills are probably not that extensive once we are clear

about exactly what needs to be done. Some of the problems are around deciding exactly how you will do it. The Government has a short-term strategy of making sure that decent loft insulation and cavity walls are filled in all the properties where it is practical to do so by 2015, and that is relatively easy, but that will only start to tackle the problem. In many older properties, for instance, you cannot put in cavity wall insulation; you have to put something either on the inside of the walls or the outside of the walls. Those are new skills not a million miles away from the skills that the existing building workforce has but it will involve some additional skilling. It will involve probably more, if I can split the difference, on the knowledge base, so that the builders who are doing the work know what to recommend on individual properties. Work that we have had done suggests that you can probably cover the vast majority of properties in a dozen or maybe 15 different categories, so you can have almost like an off-the-shelf approach for individual householders. You will not cover them all. In addition to that, we do have a problem at the moment in that a very large number of skilled people in the construction industry are on the verge of retirement/leaving the industry. We do not see, despite the recession, bringing in enough new people to the industry to replace those by the time the construction industry is hopefully working again at a reasonable level of capacity—which we envisage being still about three/four years away. There are some enormous challenges, as my colleague said, if we are going to move to the situation of dealing with something like 25,000 properties every week for the next 20 years.

Q318 Chairman: Assuming people are drawn back to work in the industry, are there adequate training facilities for them to acquire the skills that they will need?

Mr Berry: We have a very good working relationship with ConstructionSkills. We work with ConstructionSkills to put on workshops to train our members in the saleability and moving towards the low carbon economy. The problem at the moment is the lack of demand. Our small builders tend to be more sceptical because there is a lack of demand in the marketplace. But if the strategy is underpinned by some milestones along the way to retrofit our housing stock, we will see that willingness to do the work, because obviously of the future job opportunities there. Yes, there is capacity there to do it, but we need the certainty to allow our members to tap into this potential market.

Q319 Colin Challen: Looking at the retrofitting market, is there any evidence to show that it would create jobs?

Mr Diment: I do not think that there is any doubt at all that those jobs could be created. Research we had done for us last year by the University of Oxford suggested that you are looking at an additional market of something in the order of £3.5 to £6.5 billion a year. That is a massive market, both in jobs onsite but also in work that will be required in the material supply industry, the production of the right sort of materials. People are still really struggling with what are the right things to do on these individual properties and in getting those signals. A lot of R&D still needs to be done to work out particularly how you tackle older properties, how you improve the insulation of solid walls without having major detrimental effects on the space within those homes. That could be a major issue. If you tell people, “You are going to lose two or three inches, and maybe even more, around each external wall in your property” that is difficult to persuade people it is worth doing. Our members are finding—and there are a number of them now who have very good knowledge and information about what can be done—is at the moment public opinion from many people is still, “You’re a builder, you’re just trying to make me spend more money on getting this work done than I really want to spend.” There is a question of knowledge and upskilling, ensuring that the customer is being intelligent and that they have the information, as well as training the builders and the people who do the practical work.

Mr Berry: Also, we are in uncharted territory. The technologies are being developed and some of them are more effective than others, but that is part of the process as we move towards a low carbon built environment. We should expect that. Mistakes will be made, but we will learn from those mistakes and improve the technology and bring the costs down as well as the speed in terms of retrofitting.

Q320 Colin Challen: Our political leaders have said over and over again that tackling climate change is one of the ways of also tackling the recession. That is the ‘opportunity speak’. Other people say that doing this is a big burden. You have mentioned that householders balk at the price of some of the things that may be implemented. What is your opinion? Would those billions that you have spoken of improve our economic position or simply make matters worse?

Mr Diment: In the short term it would certainly help our industry. We have to find ways of making it attractive, and incentivising particularly in the early part of the programme, to get property owners to do that work. I know there is some work going on—though we would argue not enough and not fast enough—about ways you could put packages together which would make it attractive for people to make that commitment and on which there will be a relatively medium-term payback, but I do not think we have the expertise to say that if you are looking at this in an economy-wide setting it would

be economically cost effective. The problem we have is whether we can afford from the environmental point of view not to be doing it.

Mr Berry: That is the point. We now have a legal target to cut carbon emissions, and bearing in mind that buildings contribute 40 per cent of the UK’s total carbon emissions, it becomes imperative to tackle the existing building stock. There is that environmental imperative to do that and, therefore, we need to look at how we upgrade our existing buildings in the same way that the Government is tackling new build. It has been quite ambitious in terms of new houses being zero carbon by 2016, but we have not seen this same urgency in terms of our existing buildings. That is where the requirement is and that is where the future jobs and the new skills will be if the Government is going to comply with the legal requirement.

Q321 Colin Challen: Hopefully this will lead to a new green construction boom, but the last construction boom which we experienced drew in an enormous number of, say, Polish construction workers. Given what we have already heard this morning, are British people, particularly in poorer areas, going to be given the opportunity of getting involved in this? What steps can we take to ensure that local people are going to benefit from the boom that may take place this time around?

Mr Diment: We have to plan for it properly. We know that over the last few years, and not just because of the impact of the recession over the last 12 months or so, we were starting to see, for the first time in a generation a dramatic increase in the number of young people who wanted to come into the construction industry, for instance. The frustration, turning the clock back 12 months or so—or maybe a bit longer than that, before the recession really started to bite—was how many well-qualified young people were not able to get on places in FEs or not able to get on apprenticeships because the funding was not there. There is no shortage of people who want to come into this industry and who want to work in the industry. We have to work very quickly over the next few years to make sure that they are given the skills, so that, using our home-based workforce, we can rise to this challenge—which, as Brian said, is going to be a massive one over the next 20 years or so. This is not going to be a short-term boost; this is going to take at least 20 years to complete if we are going to get around 24 or 25 million existing homes, most of which from an energy efficiency point of view are pretty poor.

Mr Berry: Yes. There is no shortage of people wanting to come into the construction industry. That is the advantage of small building companies, because they are taking on local people, and that is good for job creation right across the country. The problem is that in a recession employers find it increasingly hard to fork out the costs of taking on an apprentice, and we are in danger of repeating the mistakes of the last recession, when we lost hundreds of thousands of people and we then had a skills gap when there was an upturn later on. We need to be aware of that. People are talking about the possible

skills gap that could emerge when we come out of this recession. It is vital that we do all we can to support employers to take on the apprentices, so that when we do come out of it there will be less of a skills gap than there might be.

Q322 Joan Walley: You have just mentioned so many challenges. If we are looking at the Low Carbon Transition Plan, with the sheer number of homes that need to be retrofitted—7 million homes altogether and 1.5 million homes to benefit from the impetus to get solar energy into all this—how is that going to be done in a fair way? How is it going to be done efficiently? You have yourself said there are real issues in how this retrofitting is going to be done. Have you been to the Centre for Alternative Technology at Machynlleth? Have you seen the training and new methods of construction that they are looking at? Is there any scope for some kind of partnership between yourselves and them, to look at how the modules of teaching these new construction methods could be incorporated into the way your members build in the future?

Mr Diment: It is very helpful for you to remind me about that facility at Machynlleth. It is many years since I have been there and I have not really thought of that. We are talking to people like the big research establishments and some of the university academic departments who are doing work on this, networking through ConstructionSkills. The short answer to your question is no, but you have made a very good suggestion that we ought to be paying a visit up to Machynlleth and talking to them there.

Q323 Joan Walley: Mr Challen was asking whether the public are going to be prepared to take onboard the costs of doing all this. How can you present the benefits of this being done in terms of energy efficiency and also in terms of cost savings? How can you link the work your members will be doing with the benefits to individual householders? Do you have any say in terms of the regional development agencies, as to how their programmes could link in with this as well? There has to be a mechanism, which does not apply at the moment to tick all of these boxes, does there not?

Mr Diment: I take the point you are making. We are fully engaged in using all our resources in trying to help and put across the points that our members need to know. We do try to talk to external bodies as best we can, but part of the problem is that this is something which is so important, so big, government has to take more of a lead on it. There are some wonderful aspirations being expressed with the strategies that have been published by government over the last year or so, we are still unclear on the detailed road map for moving forward.

Q324 Joan Walley: Government is taking the lead, is it not, because it is about to announce the new CERT programme? Presumably you are in some kind of talks with DECC as to the shape of that CERT programme and how that would result in jobs for your members in the retrofitting of properties.

Mr Berry: We have not had direct contact with DECC on CERT. Most of our members are working for private domestic clients and their main concern is the payback period on energy efficient improvements. That is where there is a lack of demand. That is where there is a reluctance for small builders to upskill because of the absence of demand.

Q325 Joan Walley: That absence of demand is going to change, is it not, when the CERT programme comes in?—at least in certain areas.

Mr Berry: In certain areas, yes, and we need to see more of that to kick-start that demand, so that the building industry can respond to that demand and improve the skill set that they have.

Q326 Martin Horwood: We have just heard from the Energy and Utility Skills Council—and I do not know if you were in on that part of the evidence session—that the demand-led, industry-led approach to providing the skills necessary for what is going to be a revolution in these trades was going to be sufficient, but we have seen government research that casts some doubt on this. I quoted an example of my own plumber who had not even heard of combined heat and power, I could have quoted examples of builders and architects who had no idea about the new building materials that Ms Walley was talking about, who did not really understand how solar technology could be incorporated. How confident are you that the current demand-led approach to filling the skills gap is going to succeed?

Mr Berry: We have this strategy in place; we have the aspiration for all homes to be retrofitted by 2030. That is a huge start, but we need this more detailed map of how you are going to implement that. A range of incentives to kick-start the market would help, and then you will find trade associations such as ourselves can help by providing training for our members. They will want to tap into that market. They will see the opportunities there to carry out the retrofitting work.

Q327 Martin Horwood: Are you sure you are not going to hit a huge log-jam, where suddenly the incentives are there and the demand starts to develop and you are sitting waiting to develop the training programmes.

Mr Berry: Some householders do want to green their homes as a statement, and there are firms who do specialise. So it has started already, but we have a huge way to go in making that widespread and improving the knowledge. We have a role to play at the moment in alerting our members to the opportunities that will become available and providing the training with ConstructionSkills and the Energy Savings Trust to alert our members about what skills will be required. They are more aware than they were a couple of years ago. We launched our Building a Greener Britain campaign two years ago. We carried out research with Oxford University. We are having that debate within the SME sector,

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but we do need those signals from government that, “Yes, we have the aspiration. This is what we are going to do in the next five years to retrofit and tap into that market”—which, as was mentioned, is worth about £4 billion a year.

Q328 Martin Horwood: I have as much fun as any other Opposition politician in knocking the Government, but to be fair to them there are pretty strong signals coming out of government now, are there not? Even if there were not, there is a clear enough agenda around the skills necessary to transform the building industry.

Mr Berry: The signals are out there amongst opinion formers and politicians, but if you go on to the street and talk to householders, they do not know about it to the same degree. That is where the problem is. They are not asking for these energy efficient improvements, and when they do, they are worried about the extra costs and the payback periods—which still have not been addressed because the technology is not available yet to overcome some of those obstacles.

Q329 Martin Horwood: Are you saying that the Government is giving some leadership but householders just have not caught up with it yet?

Mr Berry: I think that is part of it.

Mr Diment: There are always problems, as we all know, with public information campaigns and getting those messages across. We have seen so many, in health, education, or whatever else. But our members are certainly saying to us, “We are not finding the demand, as we talk to customers.”

Q330 Martin Horwood: Are they going to have the skills ready when the demand comes?

Mr Berry: It is the chicken and the egg.

Mr Diment: Yes, it is the chicken and the egg very much. Our members are SMEs generally at the small end of that sector. We are talking about maybe family firms turning over sub-£1 million a year. That is what the bulk of the construction industry is: about 120,000 individual small firms out there doing most of the work in the domestic sector. They do not have at the moment the confidence that this is something that is really going to happen and go out and make the investment that is needed in training. We are trying to tell them that, but some stronger noises are needed from government to make it absolutely clear.

Q331 Martin Horwood: You say stronger noises. The noises are pretty deafening.

Mr Diment: Well, specific action.

Q332 Martin Horwood: We talked before about any specific incentives that would encourage people to go and get the training for those skills into their small companies.

Mr Berry: We have to create that demand.

Q333 Martin Horwood: We had a vague answer from the skills council. Would you recommend any incentives that would recommend people to get training before the demand comes in?

Mr Diment: I know there is a danger, as you say, of demand exceeding supply in the short term, but just as important are some incentives in the short term to get customers asking and wanting this done on their properties. That is what we are not seeing at the moment. It has to be done from both ends: incentives for the builders to make sure they and their staff have the training and the knowledge they need but, equally, some incentives in the short term to start customers wanting to do this. At the moment, the evidence we are getting back from our members is that that demand is very, very light and patchy.

Q334 Martin Horwood: We have Warm Front. We have the Low Carbon Buildings Programme—problematic as that has been. We have CERT coming in. You would ramp all that up by a large margin, would you?

Mr Berry: In the private sector one of the campaigns we have had for a long time is reducing VAT to 5 per cent for energy efficient repair maintenance. That would really help kick-start the retrofitting market. We need that sort of incentive at the beginning of this process to bring back the sea change that is required to meet those government targets to cut carbon emissions and retrofit our housing stock. Once you have that, then you can start thinking about bringing in a form of regulation at a later period. You need to kick-start the market first by either reducing VAT or a council tax rebate, so that everyone will buy into the process. The problem at the moment is that people are sceptical, with the recession, and they do not want to pay any additional costs, and the builders are reluctant to add on costs to clients at a time when they are trying to win work.

Q335 Martin Horwood: Coming from a flood-prone constituency, can I ask you about adaptation. There seem to be some challenges on that front as well, apart from the low carbon side. The adaptive technology for climate change also seems a bit mixed. When my constituents have tried to look into flood proofing ground floors and the changes that they might need, it all seems rather ad hoc and experimental. Do you think the skills are going to be there for adaptation?

Mr Berry: I am sure, as our climate changes, that will be a market that our builders will need to tap into, but the technology is being developed and the skills are being developed, so we are at the beginning of the process.

Q336 Martin Horwood: Have you as an industry done any work on adaptive technology that you can tell us about?

Mr Berry: Not as a trade association. We have not done any research on adaptive technology, no.

Q337 Dr Turner: It seems to me that there is a need for a certain education process, both for customers and the bulk of your members, the thousands of small jobbing builders who at the moment provide traditional skills at best, and not always those to any satisfactory degree. Are your members in a position themselves to know what they want from the training market in order to demand training? Even assuming that the market gets the drivers that it needs to get it moving, are the skills going to be there either in the clients or in the building firms and their employees? What role do you propose to play in order to fill that linking gap?

Mr Diment: There is certainly a lot of education that still needs to be done. We are obviously concentrating on our members. We do not really have access to the clients, as such. We are trying to put out material to them. We are running training courses. We are putting articles in our magazines. We are putting material on our website that our members can use. It is trying to persuade them—and I would preface that with the comment that my experience of dealing with them is that they are pretty entrepreneurial. These are people who run small businesses, many of which have run for several generations quite successfully, so if they can see an opportunity they will run with it. At the moment they are still very sceptical that this is a market that is really going to take off in their relatively short-time horizons. As you will know from the small businesses you deal with in your constituencies, I am sure, these are the sort of people for whom this week's income pays next week's bills. Their long-term planning horizons are few and far between. It is about: "Am I going to keep the business ticking over for the next three to six months?" We have some work to do. We readily accept we have to make them look at the longer-term time horizons, but in the current circumstances that is difficult unless they can be absolutely confident that that work is going to be coming through in sufficient quantities to have a real impact on the success of their business. They are not prepared to make that commitment at the moment. They still keep on telling us they are not totally convinced of that.

Q338 Dr Turner: How do you think the Government can help with this communication problem?

Mr Diment: Government has to find a way of really kick-starting this programme and getting it into the sort of markets that most of our members are dealing with. They do some work in social housing, some work for private landlords, but the bulk of their clients are individual owner-occupiers who probably in the vast majority of cases would not be eligible for many of the schemes that are currently on offer. That is certainly one of the concerns. Of course, when this programme really gets moving the vast majority of the property occupiers who are affected are going to be owner-occupiers, and that is where the programme does not seem to have moved forward at the moment.

Mr Berry: That is where, repeating what we were saying earlier, there is a need for incentives for householders to invest in their homes which would create the work for small builders and result in the upskilling.

Q339 Martin Horwood: There is a gap.

Mr Diment: Yes.

Q340 Martin Horwood: I want to come back on Mr Challen's earlier questions about whether or not we need planning for these skills. You seem to be saying that, given the right market signals, the sector will respond in the right way and we will almost create the training in the wake of those market signals. Do we need the Energy & Utility Skills Council to keep working on its renewable energy strategy at all? Is that all going to flow naturally from the market signals if we get those right?

Mr Berry: I am sure there is a need there, but builders are entrepreneurial, they will respond to market signals. There is a role there for the FMB in providing the training and link-up with ConstructionSkills and the Energy Savings Trust, and there is also a role for the media. The media has a role in terms of alerting the public about what they can do to improve their homes. An emphasis there in getting the messages in to every household would help. But it is a collective effort. It is not one or the other; it is the need to bring about a cultural change in how we see our homes and what can be done to improve them.

Q341 Martin Horwood: I suppose it is the timing we are worried about here. Without that forward planning, I cannot see quite how that market response to is going to come anywhere near fast enough to set up the training and to promote the courses that are going to be necessary to get those skills in.

Mr Berry: The timing is an issue. That is why we need to map out the timescale over the next 20 years about how you are going to tackle the problem of retrofitting and what that means. More work needs to be done so that we have greater clarity about where we can put the training into progress.

Q342 Chairman: Does the Government need to do more to encourage managers in the building industry to think about how they should re-skill the workforce?

Mr Diment: It probably does. Through ConstructionSkills there is quite an extensive programme for managerial training. I am not sure that covers as much detail as it could do about how you spot the training need and how you identify the new skills that are coming through. The problem the industry is facing, certainly in the short term, is a dearth of resources for training, even in its current reduced state. ConstructionSkills, the sector skills council for the construction industry, has virtually over the last two years had to eliminate its reserves to manage the amount of training that is required.

20 October 2009 Mr Brian Berry and Mr Richard Diment

There are some real challenges there in the short term about where the resources for that training will come from.

Q343 Chairman: You mentioned in your earlier answer about the understandable tendency, particularly for SMEs, to focus on the paying of immediate bills. Do you think more could be done to get management in this industry to think about sustainability? Are there some more general green skills which management needs, to think about running their businesses in a more sustainable way?

Mr Diment: I am sure there are. Our members are particularly at the very small end of the SME market, in which the manager is everything in the business as well as probably being hands on for 40 or 50 hours a week onsite, so it is a real challenge for these people to get their minds around or even to manage their time in such a way that they can get all these skills across. They are anxious to learn but have great demands in trying to balance and keep the business afloat. At the moment the absolute priority

is, "How do I make sure I have some work next week, so that I can pay the guys and keep a roof over my own head?"

Q344 Chairman: I am sure what you have described is familiar to all of us. There are plenty of people doing high quality work in exactly that scenario, not quite hand-to-mouth but in a somewhat day-to-day fashion. Given that is the sort of characteristic, is there any way of providing more management skills? It is difficult to see how firms operating in the way you have just analysed will ever have the capacity or the resource or the time to think about management skills, quite apart from workforce skills, in a sustainability context.

Mr Berry: In terms of their training, you have to be very practical, to see where the market opportunities are. It cannot be blue sky thinking about saving the planet; it has to be, "Yes, green means business. It means increasing my profits." That is when it will start to take shape.

Chairman: I think we are probably through. Thank you very much for coming in.

Tuesday 3 November 2009

Members present:

Colin Challen

Mr David Chaytor
Mark Lazarowicz

Jo Swinson
Joan Walley

In the absence of the Chairman, Joan Walley was called to the Chair

**Memorandum submitted by the Department for Business, Enterprise and Regulatory Reform (BERR),
Department of Energy and Climate Change (DECC), Department for Innovation, Universities and Skills
(DIUS), and the Department for Environment, Food and Rural Affairs (Defra)**

1. INTRODUCTION

1.1 The Government welcomes the new inquiry on “Green jobs and skills” and the opportunity to set out its strategy to ensure the UK economy is well positioned to take full advantage of the future opportunities arising from the global shift towards low carbon.

1.2 In the sections below we aim to set out:

- information on the Low Carbon and Environmental Goods and Services (LCEGS) market and potential opportunities for the UK;
- the Government’s policy framework for a low carbon and resource efficient economy;
- how Government action will seek to enable investment and employment in sectors that offer future growth opportunities;
- the wider contribution of our policies to sustainable development and environmental protection; and
- how we are taking action to support the skills base for the UK environmental industries.

SUMMARY

- The global shift to a low carbon economy represents significant global opportunities for the UK, and holds out the prospect of a “low carbon resource efficient recovery” and a more sustainable longer term future.
- Our shift to low carbon will change every aspect of our lives, our work, our society and our living environment in line with the principles and shared priorities of the UK’s Sustainable Development Strategy “Securing the Future”. Our policy also acknowledges the fact that the resource efficiency agenda is much wider than just low carbon and energy efficiency.
- We have provided a strong long-term policy framework that provides clear signals to the market on our long-term priorities and have created greater investor confidence about the future prospects for UK business sectors.
- Budget 2009 indicated how we aim to fund this strategic vision, providing a package of supply-side and demand-side measures to ensure Britain’s future competitiveness in the future low carbon economy.
- Much has already been achieved in developing our Low Carbon Industrial Strategy. In summer 2009, we will set out in more detail how we will enable the UK to seize the economic opportunities arising from the global shift to low carbon.
- We are working in partnership with leading edge employers to inform our policy and action, drawing on their experience of low carbon skills. The UK Commission for Employment and Skills, HEFCE and the new Skills Funding Agency (from 2010) will have key roles to play in articulating demand, building capacity and incentivising the skills system.

¹ The environmental sector includes more traditional environmental activities such as pollution control, waste and water treatment and recycling, renewable energies, nuclear, and emerging low-carbon areas, such as building technologies, carbon finance, alternative fuels and CCS.

- As new and established businesses grow to meet the opportunities in the new economy, these changes will ensure they are able to get the skilled workers they need in the right place and at the right time

2. BACKGROUND

2.1 The global Low Carbon and Environmental Goods and Services (LCEGS)² market is estimated to be over £3 trillion.³ The UK accounted for 3.5% of the global market amounting to about £107 billion. This makes it the world's sixth largest low carbon and environmental economy. If the global low carbon and environmental market grows in line with expected UK LCEGS market growth, it could increase by 45% in value by 2015, creating significant opportunities for UK businesses. It is estimated that the value of the UK LCEGS market could grow by another £45 billion by the middle of the next decade. A rough estimate of growth in employment in the LCEGS market over the same period indicates that there could be a potential increase in the number of employees across the LCEGS sectors by around 400,000 to a total of 1.2 million.⁴

2.2 As with most developed economies, in the UK, the impact of the economic downturn has manifested itself in the form of collapsing business confidence, shrinking venture capital flows, a severe reduction in consumer demand and a market decline in international trade flows. For the low-carbon and environmental sector, the recession has had a significant impact on the forecast growth rates. However, although they have decreased, forecast growth rates for the sector are still positive and increasing over the years to 2014–15.⁵

2.3 In terms of global investment flows into the clean-tech sector, new investment rose to \$155 billion in 2008 in spite of the economic crisis, following three years of very strong growth⁶ but fell again in the first quarter of 2009, declining to around \$13.3 billion—the lowest quarterly value since the first quarter of 2006.

2.4 The downwards adjustment of growth forecasts in recent months, however, are much less severe in the low carbon sectors compared to other sectors, such as construction and retail. The projected growth rates for Renewable Energy and Low Carbon activities is forecast to exceed growth in the more established Environmental sector, where many technologies are already mature. It is anticipated that as economic uncertainty is reduced and investment funds start to flow again these growth forecasts will start to rise. If these forecasts are correct a significant proportion of this growth will be generated by renewable energy activities. We are well positioned to gain comparative advantage in key areas of the environmental supply chain through exporting to developing nations looking to upgrade their current infrastructure.

3. THE POLICY FRAMEWORK FOR A LOW CARBON RESOURCE EFFICIENT ECONOMY

The Long-term Policy Framework

3.1 In order to meet our 2050 goals and create a prosperous low carbon resource efficient economy, we need to create the conditions for businesses to innovate and to compete for the opportunities created by the global shift towards low carbon products and services. The Government has provided a strong long-term policy framework. This sends clear signals to the market and helps provide investor confidence about the future prospects for low carbon resource efficient economic activity. Elements include:

- World's first Climate Change Act, which sets binding targets for reducing green house gas emissions by 80% by 2050 and commits us to carbon budgets;
- EU Emissions Trading Scheme, which covers almost half of all emissions;
- the mandatory emissions trading scheme covering large business and public sector organisations in the UK; and
- Climate Change Levy and the renewables obligation.

Developing a Low Carbon Industrial Strategy (LCIS)

3.2 The legal requirement to reduce carbon emissions by 80% by 2050 will affect the activity of businesses in all sectors. Therefore, the Government's Low Carbon Industrial Strategy is not about creating a wholly separate part of the economy, but about the transformation of the whole economy. The low carbon economy will change our industrial landscape, our supply chain, and the way in which we all work and consume. It will also require a strengthening of core skills in the labour market as well as the development of new skills to enable people to adjust to new low carbon products and services.

3.3 The Low Carbon Industrial Strategy (LCIS) aims to ensure the UK maximises the economic benefits from this shift to low carbon by providing a clear framework for Government policy and investment.

² The environmental sector includes more traditional environmental activities such as pollution control, waste and water treatment and recycling, renewable energies, nuclear, and emerging low-carbon areas, such as building technologies, carbon finance, alternative fuels and CCS.

³ Low Carbon and Environmental Goods and Services: an industry analysis, INNOVAS, March 2009.

⁴ This rough estimate of growth in employment levels is done by linking potential growth in employment levels to forecast growth in market values for the sector on a pro rata basis.

⁵ Forecast annual growth rates for the LCEGS sector for the period up to 2014–15 done in August 2008 ranged from 6–16%. Forecasts carried out in December 2008 for the same period ranged from 5–6%, whereas forecasts from March 2009 ranged from 4–6%.

⁶ From 2004 to 2007 average growth in new investment was approximately 65% per annum.

3.4 Much has already been achieved in developing the LCIS:

- In March 2009, Government launched *The Low Carbon Industrial Strategy, A vision* at the Low Carbon Summit. This illustrated our vision for our low carbon industrial strategy⁷ setting out the key policy drivers:
 - promoting energy efficiency to save businesses, consumers and the public sector money;
 - putting in place the energy infrastructure for the UK's low carbon future;
 - making the UK a world leader in the development and production of low carbon vehicles and
 - making the UK the best place to locate and develop a low carbon business.
- On 16 April 2009, we published *Ultra-Low Carbon Vehicles in the UK*. This set out how the Government will work with industry to enable the UK to become a global leader in the development and production of ultra-low carbon vehicles (see paragraph 4.4 below for details).

3.5 Budget 2009 indicated how we aim to fund this strategic vision, providing a package of supply-side and demand-side measures to ensure Britain's future competitiveness in the future low carbon resource efficient economy.

3.6 The key low carbon budget measures included:

- £405 million to help establish the UK as a market leader in renewables technology and advanced green manufacturing in the next two years. This will provide supply side support for the development and deployment of low carbon technologies such as wind and marine energy and will help attract and protect investment in the UK's low carbon supply chain.
- £50 million extra for the Technology Strategy Board to significantly expand its work with business, fostering innovation and new technologies, such as low-carbon technologies and advanced manufacturing.
- £375 million to help households and businesses with energy and resource efficiency including:
 - £100 million of new funding for Carbon Trust existing loans scheme to business. This should enable the scheme to reach around 3,500 SMEs, helping them make savings on energy bills of £23 million per year whilst increasing demand for low carbon solutions.
 - £65 million of loans for energy efficiency measures in public buildings, delivered through the Carbon Trust Salix scheme in England. This will support 3,000 projects in schools, hospitals and other public sector buildings. This will save the public sector £13 million a year in bills and increase demand in the construction sector.
- An uplift in Renewable Obligation banding for offshore wind for projects closing over the next two years, worth £3.5 billion over lifetime of projects, to protect £9 billion of investment, and power up to 2.8 million homes while easing the access to finance and supporting continued investment.
- £4 billion of new capital made available through the European Investment Bank (EIB) to provide supply side support to renewable energy projects with a view to bring forward £1 billion of consented small and medium-sized UK renewables projects to deployment.
- £90 million more to fund engineering and design studies for Carbon Capture and Storage (CCS) in way of helping to maximise UK's potential to be a world leader in this market.
- Support for increased use of Combined Heat and Power (CHP) providing further demand stimulus for the UKs low carbon businesses and workers.
- Further tailoring of the transport regulatory framework such as the lowering the carbon threshold for company car tax (5g CO₂ per km less for the 15% band) to encourage the demand for low carbon vehicles.

3.7 Following the Budget, Government published *Investing in a Low Carbon Britain*. This set out, in broad terms, how Government intends to target the investment announced at the budget to provide real help now for businesses and households while creating and sustaining the jobs that will contribute to the UK's prosperity in a new low carbon world. It illustrated key sectors where the UK has the potential to take a leading global role, because of our natural resources, strong tradition, skills base or other advantages. These include:

- Offshore wind generation.
- Marine energy.
- Nuclear energy.
- Low carbon vehicles.
- Carbon capture and storage.

⁷ Low Carbon Industrial Strategy, A vision, March 2009.

4. PROMOTING LOW CARBON INVESTMENT AND EMPLOYMENT IN KEY SECTORS

4.1 In line with “*Building Britain’s Future—New Industry, New Jobs*”, published on 20 April, the Government’s Low Carbon Industrial Strategy will seek to make targeted investment where there are key future economic opportunities for Britain, and where government action can make an impact. As part of the strategy, we are examining barriers and opportunities across the economy. Below are a few of the key sectors.

4.2 *Offshore wind generation and Marine energy*

4.2.1 Renewable energy will be an essential part of the world’s future energy mix. Britain is in the position to acquire a comparative advantage in certain areas, particularly in offshore wind and marine energy. Building on our natural advantages, “*Investing in a Low Carbon Britain*” set out the Government’s commitment to support delivery of projects to make the UK a centre of excellence in close-to-market innovation in technologies such as offshore wind, wave and tidal energy. In doing so, we want industry to have the facilities to develop and demonstrate its technologies, helping to establish its manufacturing and supply chains in the UK.

4.2.2 The UK possesses a unique level of marine energy resources. The UK has an estimated practical wave resource of around 50TWh/y of electricity a year and a practical tidal stream resource is around 18TWh/y. This represents around 50% of Europe’s tidal energy resource (10–15% of the global resource) and 35% of Europe’s wave energy resource. The sector is still at a very early stage of development but the Carbon Trust has estimated that marine energy has the potential supply up to 20% of the current UK electricity demand. We anticipate that around 1–2 GW could be deployed by 2020 and 30–50GW deployed by 2050. The UK is also seen as a focus for wave and tidal technologies, and the world’s first commercial scale tidal turbine (SeaGen) and the world’s first commercial-scale wave energy array (Pelamis), both British technologies, were deployed in 2008.

4.2.3 Similarly the UK is currently No 1 in the world for operating offshore wind farms with 598MW and it is vital we maintain competitive advantage in this area. We are very much on track to remain in the lead, with another 444MW due to finish construction this year, almost doubling our capacity. This will take us over the 1GW mark—and we have existing plans for up to 8GW to be operating by 2014.

4.3 *Nuclear energy*

4.3.1 In the Nuclear White Paper in January 2008 the Government made a clear commitment to Nuclear power as part of the future energy mix for the UK. This domestic UK nuclear revival will provide significant business opportunities for those in the nuclear industry and for those involved in the supply of goods and services required for the construction, maintenance and decommissioning of nuclear power stations.

4.3.2 To date, energy companies have announced plans to construct 12.4GW of new nuclear capacity in the UK alone, so the potential opportunity for UK businesses is sizeable. We estimate that each new nuclear power station will create up to 9,000 jobs during construction and operation, many of them highly skilled. The construction work on the first new nuclear power station is expected to begin around 2013.

4.3.3 The global renaissance in nuclear power⁸ will open up significant global⁹ opportunities to UK businesses. Government is working to ensure that UK businesses can compete effectively in the supply chain for new nuclear power stations both here and globally. This includes helping domestic firms to understand more about the potential opportunities available to them and to understand the quality standards they need to comply with in order to compete in the nuclear supply chain.

4.4 *Low carbon vehicles*

4.4.1 The Automotive sector is a mature industry that must be transformed to play its role in a low carbon economy. The Government’s ambition is to make the UK a world leading location to develop, demonstrate, manufacture and use Ultra Low Carbon Vehicles. This will create new opportunities for vehicle manufacturers and the supply chain, the energy sector and infrastructure developers.

4.4.2 Ultra-Low Carbon Vehicles¹⁰ in the UK brought together a comprehensive range of policies developed by Government with the potential to deliver its vision up to the end of 2014. Policies on Ultra-Low Carbon Vehicles include:

- *£140 million Technology Strategy Board’s Low Carbon Vehicle Innovation Platform*—funding from the TSB, DFT, Advantage West Midlands, One North East and the EPSRC to accelerate industry investment in low carbon vehicle commercialisation, to build partnerships to address technical challenges, to increase UK-sourced products offered to the market through research, development and demonstration.

⁸ It has been estimated that as many as 12 new nuclear power stations could be build worldwide by 2030. Estimates by the Nuclear Energy Agency suggest that between 23–54 nuclear reactors are expected to be built worldwide between 2030–50 and Deutsche Bank consider that there are around 232 reactors currently planned worldwide.

⁹ We estimate that a twin reactor with a capacity of 1.6GW costs about £2.8 billion to build and that about 70% of the supply chain could be provided by UK companies.

¹⁰ Ultra-Low Carbon Vehicles in the UK, April 2009.

- *TSB ULCV demonstration competition*—placing more than 200 ultra-low carbon vehicles on UK roads within the next 18 months—putting internationally leading numbers of ultra-low carbon vehicles on UK roads with real consumers driving real vehicles.
- *£230 million consumer incentives*—stimulating demand. From 2011, as vehicles become available to the mass market, DfT plans to provide funds to reduce the price by £2,000–£,000 for electric and plug in hybrid electric vehicles.
- *£20 million DfT Infrastructure challenge competition*—to support the development of lead cities and regions to start the processes of building infrastructure.
- *£20 million low carbon van procurement programme*—showing public sector leadership through our procurement decisions.

4.5 Carbon capture and storage

4.5.1 The Government has set out a clear policy framework to support the development of CCS. In the Budget, support for CCS was extended to include financial support, via a levy mechanism, for up to four CCS demonstration plants including the current competition. Further proposals include the need for every new coal power station to test CCS on a defined portion of capacity (not less than 300MW), and install CCS within five years once it has been independently judged to be technically and economically viable. A consultation document setting out these proposals in more detail will be published in summer 2009 alongside an Environmental Report.

4.5.2 CCS could offer significant job opportunities in the UK. The move from demonstration to deployment includes opportunities for design consultancies, manufacturers, system integrators, programme managers and professional services firms. The UK will benefit from being at the forefront of a technology that could create a multi-billion global market. Research suggests that carbon abatement technologies, including CCS, could sustain 50,000 jobs by 2030.

5. THE LOW CARBON INDUSTRIAL STRATEGY—NEXT STEPS

5.1 In summer 2009, we will set out in more detail how the Government will enable the UK to seize the economic opportunities arising from the global shift to low carbon. It will build on the priorities identified in *Investing in Low Carbon Britain* in April.

5.2 The strategy will set out our view of where future business opportunities lie. It will set out how we aim to address key challenges and barriers from R&D to pre-commercial development. It will also set out our plans to help mature industry that needs support in maximising opportunities due to market failures and regulatory barriers.

5.3 We will also set out the opportunities and challenges that lie across the wider economy, including energy efficiency, putting in place the energy infrastructure for the UK's low carbon future, support for a "smart" grid, and the potential impacts on wider infrastructure including transport and ICT and the impact on wider resource efficiency.

5.4 In summary, the Low Carbon Industrial Strategy, building on what we have announced so far, will explain how we intend to use Government policy and funding levers to address market failures and ensure businesses in the UK are equipped to maximise their competitive advantage to secure benefits from the global shift to low carbon.

6. NON-CARBON RESOURCE EFFICIENCY: WIDER CONTRIBUTION TO SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PROTECTION

6.1 The low carbon drive aims to create an economic recovery and a future that is more resource efficient and more sustainable for the longer term. This shift will change every aspect of our lives, our work, our society and our living environment and bring these more in tune with the principles and shared priorities of the UK's Sustainable Development Strategy "Securing the Future". Low carbon living goes hand in hand with protecting and enhancing our wider natural resources, such as clean water, air, and biodiversity and the natural ecosystem goods and services and move us towards "one planet living" while securing benefits to people's health, wellbeing and quality of life.

6.2 The shift to low carbon and resource efficiency as supported through significant provision in Budget announcements will be vital to meeting the long term challenge of climate change and help prevent the most severe impacts of climate change. However, past greenhouse gas emissions necessitates that we also prepare for climate change impacts that are now inevitable. We, are, therefore, working to increase the resilience of the UK's economy, infrastructure and communities to the impacts of climate change and to secure much needed skills across the construction and engineering sectors. Government's zero carbon homes initiative, for instance, will transform the way that new homes and other buildings are constructed over the next decade.

6.3 The resource efficiency agenda is much wider than just low carbon and energy efficiency. The wider resources of the natural environment are often undervalued for the services they provide—for example the benefit for the UK obtained from the regulation of marine ecosystems for gas and climate regulation is up

to £8.5 billion per annum. That is why the government is undertaking work to better value ecosystems and biodiversity. With the increasing pressures on natural resources there is an opportunity for businesses across the economy to use resources such as water and raw materials more efficiently, and in doing so to reduce costs and increase competitiveness. Reducing waste and seeing waste as a resource, is a key component of this wider resource agenda. In the Budget 2009 we have allocated an additional £10 million funding for 2009–10 for the development of anaerobic digestion and in vessel composting facilities for food waste across the UK providing supply side assistance for UK businesses.

7. THE SKILLS BASE FOR THE UK ENVIRONMENTAL INDUSTRIES

7.1 In 2007 CEMEP¹¹ concluded that reliable forecasts of future job prospects in low carbon markets were not available. In 2009 the Defra *Review of Evidence* concluded that there was latent demand for low carbon skills, but that demand was not being articulated by employers and, as a result, the skills system was ill-equipped to respond.

7.2 In *Building a Better Britain: New Industry, New Jobs* we set out a commitment to a new activism from Government, working strategically to complement the market and position the UK to take full advantage of its competitive strengths. This active approach to developing our skills base will be particularly important where skills capabilities determine the UK's ability to secure jobs at the top end of global value chains—and where UK business and their employees need the skills to compete for government procurement or the demand created by other significant government action.

7.3 Government is committed to routinely considering and addressing skills issues through public procurement—both in letting new contracts, and working with existing contractors on a voluntary basis. Within that overarching commitment, we have been working with public sector clients and suppliers in individual sectors to shape more specific commitments that will help address the particular skills issues in those sectors.

7.4 DIUS and OGC recently published *Promoting Skills through Public Procurement*, a new guide to provide procurers across the public sector with practical advice on how skills and training can be embedded in public procurement in a way that is consistent with EU rules and the value for money framework. We will shortly be bringing forward further sector specific commitments in those areas where we believe public procurement can act as a real and significant lever for action to address skills gaps and shortages.

7.5 We will do more to forecast and identify these skills needs in areas such as low carbon by developing with employers, Sector Skills councils and the UK Commission for Employment and Skills (UKCES) the capability to collect, process and deploy intelligence on skills needs in key sectors and markets quickly and effectively. From 2010 our new Skills Funding Agency (SFA) will then ensure that the skills system has the capacity and funding available rapidly to support development in areas of strategic importance to the economy, such as low carbon—and we will also ensure our universities have clear incentives to respond quickly to support these areas of potential growth, including by evolving our current funding models.

7.6 We have recruited a Strategic Advisory Group of leading edge employers to help Government set the benchmark for the skills system. Key recommendations include recognising that businesses cannot deal effectively with skills issues until they have understood the business benefits arising from resource efficient ways of working, and there is significant potential for collaboration among employers based on existing supply chains, supported by Sector Skills Councils.

7.7 We are currently looking at how we can develop our current demand-led funding system so that it is more responsive to emerging demand for skills, including low carbon, through increasing the flexibility of funding in-year to respond to these demands. The development of our demand-led system will create a stock of training providers with the responsive capacity to best adapt to future markets.

7.8 In addition we are also developing further reforms in order to support the concept of skills activism, and to strengthen the link between developments in emerging markets, like low carbon, and skills development. We need a new funding system that will give the Skills Funding Agency the ability to make funds available in order to move the system in the required strategic direction determined by Government—such as towards sectors like low carbon—whilst also ensuring there are sufficient funds available to meet emerging “here and now” demand in-year. We are exploring different options for how this could be achieved.

7.9 Later this year we will publish a Higher Education Framework setting out how the higher education sector will be incentivised to support this agenda, including by evolving our current funding models; and an Active Skills paper detailing how the wider skills system will support these developing policies. We will work with the UK CES to develop the capability to collect, process and deploy information on low carbon skills needs quickly and effectively; and we will establish a new Skills Funding Agency to deliver the low carbon skills solutions we need.

¹¹ Commission for Environmental Markets and Economic Performance.

7.10 As new and established businesses grow to meet the opportunities in the new economy, these changes will ensure they are able to get the skilled workers they need in the right place and at the right time.

June 2009

**Additional memorandum submitted by the Department for Business, Innovation and Skills (BIS),
Department of Energy and Climate Change (DECC) and Department for Environment,
Food and Rural Affairs (Defra)**

1. This note provides an update to the joint Government memorandum submitted to the Environmental Audit Committee in May 2009. It summarises significant further steps taken by Government relevant to the Committee's "green jobs and skills" inquiry since the submission of our original memorandum to the Committee.

2. The *UK Low Carbon Transition Plan*,¹² the *UK Low Carbon Industrial Strategy*¹³ (LCIS), the *UK Renewable Energy Strategy*¹⁴ and *Low Carbon Transport: a greener future*¹⁵ were published on 15 July 2009. Together these set out the policies which will help drive the transition to decarbonising our economy, and reflect how departments across Government are working together to deliver the transition to a low carbon future.

THE UK LOW CARBON TRANSITION PLAN

3. The *UK Low Carbon Transition Plan* (the Transition Plan) sets out a comprehensive strategy to move the UK onto a permanent low carbon footing. The Transition Plan plots how the UK will deliver emission cuts of 18% on 2008 levels by 2020 (and over a one third reduction on 1990 levels). It sets out how the UK will achieve these reductions while maintaining energy security, maximising economic opportunities and protecting the most vulnerable.

4. As part of this overall framework, the Transition Plan also sets out the policy framework to incentivise businesses to reduce their energy use and seize the opportunities of the move to a low carbon economy. The key measures set out include:

- *Capping emissions from larger and energy intensive businesses* underpinned by the EU Emissions Trading System, Climate Change Levy/Climate Change Agreements, and the Carbon Reduction Commitment.
- *Providing information and advice* through the Carbon Trust and Business Links.
- *Providing financial support* to address capital barriers, particularly for SMEs, through the Enhanced Capital Allowance scheme and through interest free loans.
- *Stimulating innovation* by investing £405 million of funding announced in Budget 2009 over two years to support the development of low carbon technologies and removing barriers for innovators, for example through the launch of an "Energy Generation and Supply" Knowledge Transfer Network to enhance collaboration between innovators and support developers navigating the funding landscape.

THE UK LOW CARBON INDUSTRIAL STRATEGY

5. Building on the Government's active industrial strategy for Britain—*Building Britain's Future: New Industry, New Jobs*¹⁶—the core objective of the LCIS is to ensure that British businesses and workers are equipped to maximise the economic opportunities and minimise the costs of the transition to a low carbon economy. British firms will benefit from the low carbon transition both by catering to growing British and global markets for low carbon goods and services, and also by using energy and other resources more efficiently to reduce costs.

6. At the heart of the Strategy are three basic principles for a positive environment for low carbon business:

- First, a long term strategic approach from government—like the overall framework we have set through carbon budgets, and the clear commitment we have made to nuclear and renewable energy—which will enable businesses to invest with greater confidence.
- Second, a pragmatic recognition that intervention from government may be required in some areas to accelerate and enable the transition to low carbon—in the case of the LCIS this means support for the research and development that will produce new low carbon technologies.

¹² http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

¹³ <http://www.berr.gov.uk/files/file52002.pdf>

¹⁴ http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/res/res.aspx

¹⁵ <http://www.dft.gov.uk/pgr/sustainable/carbonreduction/low-carbon.pdf>

¹⁶ <http://www.berr.gov.uk/files/file51023.pdf>

- Finally, recognition that government has a responsibility to ensure that British-based companies and people are equipped to compete for the new demand created by government climate change policies. This has implications for our skills policy, and the way we support the development of supply chains in this country. Both these issues are addressed in the Strategy.

7. The LCIS identifies a number of low carbon sectors in which the Government believes that the UK has the potential to take a leading global role and where proportionate Government intervention can unlock long-term competitive potential for British based firms. Where market failures or barriers are preventing businesses from unlocking these opportunities and undertaking the transition in the most cost-effective way possible, it sets out the Government's strategy for addressing them. This includes the first investments from the £405 million for low carbon industries and advanced green manufacturing announced at Budget 2009. Key funding announcements in the LCIS include:

- *Up to £120 million to support the development of a British based offshore wind industry*, including funding for new offshore wind energy manufacturing facilities in the UK; investment in the development of next-generation and near-market offshore wind technologies through large scale demonstration; and improving the UK's capability in integrated offshore wind testing.
- *Up to £60 million to capitalise on Britain's wave and tidal sector strengths*, including investment in Wave Hub—the development of a significant demonstration and testing facility off the Cornish coast—and other funding to make the South West Britain's first Low Carbon Economic Area.
- *Up to £15 million capital investment in order to establish a Nuclear Advanced Manufacturing Research Centre* consisting of a consortium of manufacturers from the UK nuclear supply chain and universities.
- *Up to £10 million for the accelerated deployment of electric vehicle charging infrastructure.*
- *Up to £4 million for expanding the Manufacturing Advisory Service*, to provide more specialist advice to manufacturers on competing for low carbon opportunities, including support for suppliers for the civil nuclear industry.
- *Up to £6 million to construct low carbon affordable homes built with innovative, highly insulating renewable materials.*

8. The Strategy recognises that we need to build on local and regional strengths in order to make the most of the future economic benefits for Britain. For this reason, it introduces the concept of Low Carbon Economic Areas (LCEAs), and announces the development of the first of these, located in the South West of England, focusing on the development of marine energy demonstration, servicing and manufacture. A second LCEA in the North East of England focussing on ultra-low carbon vehicles has also been launched, supporting Nissan's investment of more than £200 million over the next five years in a new battery plant in Sunderland. The Government is working with local and regional partners to develop further LCEAs in strategically important low carbon sectors over the coming months.

9. The LCIS also recognises that this transition raises significant challenges for our industrial workforce and their families. As with previous structural changes to the economy, the move to a low carbon economy will affect each business, worker and family differently. The Government is committed to doing all it can to ensure this is a just transition. For this reason, a new Forum for a Just Transition, including representatives from Central Government, national, local and regional bodies, Trade Unions, business organisations, and third sector bodies, will be established to consider these issues and advise government.

10. In September, the Government published *Jobs of the Future*,¹⁷ setting out the areas—including the low carbon economy—where, as a result of expected growth and emerging global trends, new jobs will be created in the UK economy of the future. It identifies how the UK's labour market is set to change, the potential employment opportunities that key sectors of our economy could generate and Government action to equip our workforce to win their fair share of these jobs.

11. Looking further ahead, the Government will develop an innovation roadmap to 2050, with industry and others, showing innovation milestones for existing and new technologies. The roadmap will help identify the innovation barriers and decision points for technologies and support Government and industry to prioritise resources and energy technology families which show potential benefit for the UK.

SKILLS FOR A LOW CARBON ECONOMY

12. In the LCIS we set out a new commitment from Government to work proactively with industry to ensure that skills gaps are filled before they become a barrier to job creation or business growth. Since July, good progress has been made, particularly in the first LCEAs, where Skills Demonstration Projects are already being developed to support the demonstration and commercialisation of new technologies.

13. Under the leadership of SW Regional Development Agency, the *LCEA in Marine Energy* is creating the conditions for a dialogue between employers and skills providers to ensure that skills solutions are developed as they are needed. Skills funding streams are being aligned to support the delivery of an industry-led skills plan, and “quick win” solutions for the most pressing higher level skills needs. With support from

¹⁷ http://www.hmg.gov.uk/media/41730/jobs_of_the_future.pdf

DWP, the *Low Carbon Future Leaders* graduate placement scheme is being rolled out in the South West, before being implemented in each LCEA as more are announced. STEM graduates will act as a regional field force to stimulate SME engagement and demand for low carbon skills.

14. In the North East, under the leadership of One North East, skills partners and major manufacturers are supporting the *LCEA in Ultra-Low Carbon Vehicles*. They are looking at the feasibility of developing an Ultra-Low Carbon Vehicle research centre to be used by colleges, universities and business, and a sustainability centre to disseminate leading edge expertise in Low Carbon Vehicle training. Gateshead College and Sunderland University are working with Nissan and Smith Electric Vehicles to develop a new apprenticeship programme and foundation degree.

15. Energy and Utility Sector Skills Council (SSC) is leading cross sector collaboration to develop a UK wide Renewable Energy Skills Strategy, as part of their wider remit for Low Carbon skills across the SSC network. With support from DECC, BIS and the Devolved Administrations, they are leading a project group with a number of SSCs to coordinate labour market intelligence, and develop a skills action plan for the demand and supply sides.

16. Public procurement is a crucial lever in stimulating new demand for skills. To help drive progress we have committed to using public procurement to promote investment in skills both when letting new contracts, and when working with existing contractors on a voluntary basis. BIS Ministers recently announced that we will aim for 20,000 apprenticeships over the next three years through Government procurement as part of our wider aim to increase apprenticeship numbers.

17. As well as these specific actions, we intend shortly to publish a *National Skills Strategy and a Higher Education Framework*. Our aim through these documents will be to ensure the skills system fully supports economic recovery and delivery of skills for jobs of the future. This will include looking at how the skills system can align more closely to regional and sub regional economic development priorities through embedding skills within the single integrated regional strategies being developed by RDAs with Local Authority Leader Boards. Our intention is that from 2010 our new Skills Funding Agency will ensure that the skills system has the capacity and funding to support areas of strategic importance to the economy. And we will look to the UK Commission for Employment Skills to improve the intelligence we have about strategic skills needs, with research into the needs of priority sectors. In HE our focus will be on STEM and on boosting employability and specific technical skills at undergraduate level, and also on challenging employers to work with Government on a co-investment basis on course design, careers advice and student placements.

23 October 2009

Witnesses: **Kevin Brennan MP**, Minister for Further Education, Skills, Apprenticeships and Consumer Affairs, Department for Business, Innovation and Skills and Department for Children, Schools and Families, and **Mr David Kidney MP**, Parliamentary Under-Secretary of State, Department of Energy and Climate Change, examined.

Q345 Joan Walley: I would like to thank both Ministers for coming along to what we hope will be a team performance on the really important subject on the vision of the green jobs, and to say how appreciative we are of you both coming along side by side because we attach great importance in this Select Committee to the joined-up integrated approach. We have quite a lot of business to get through, so we will do our best. I do not know how you are going to arrange answering questions between each of you, but the UK carbon budgets require ambitious emissions reductions and we have the Low Carbon Industrial Strategy, which is setting out the Government's vision of a low carbon economy. My first question really is: is the workforce equipped to make this transition, to make that change?

Kevin Brennan: Thank you very much, Chairman, for inviting us along and I think we will try and deal with it as seamlessly as possible and try to do a double act rather than carve things up too much between us. As you have mentioned, the Government have made a lot of progress in this area over the last year and developed the Low Carbon Industrial Strategy; and we are also about to

announce—I am sorry about the timing of this Chairman—our National Skills Strategy, which I think will say something further on this. We do need to equip our workforce for the change that you have mentioned. The estimate from the research that has been undertaken is that in the low carbon and environmental goods and services sector there are currently 800,000-900,000 jobs. We think that that is going to expand over the next few years, by the middle of the next decade, to over a million, and that raises a lot of challenges around skills both in a specific sense with the skills that will be required in those areas of the economy which are due to grow, but also in the generic sense for the fact that all jobs in one sense are going to have to become green jobs in years to come because every business enterprise and Government Department is going to have to play its part in hitting our targets. So in answer to your question, I think what we are about is planning on how we can help to equip the workforce in the future with these skills.

Q346 Joan Walley: Is it going to be a dramatic shift?

Kevin Brennan: I think that we are undoubtedly looking at a pretty dramatic shift in the way that the skills system can respond to the challenge of the

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green economy. We have set up low carbon economic areas in those areas where we want to get the skills sector bodies—the universities, the employers, government local, regional, sub-regional—working together much more effectively to identify the skills needs for the future and to make sure that we have the qualification frameworks in place in order to equip us with the skills that are needed. I do not know if David wants to add to that.

Mr Kidney: Clearly the urgency expressed by your questions is absolutely right because what is different this time is that we have the Transition Plan; we have the first three carbon budgets and they have shown just over a decade from now that the landscape will be so different from today. So we know that there are going to be massive changes in the skills needs and so we cannot wait traditionally for employers to start to say, “We are coming up against skills shortages; we need to do more training in this area.” We know that there is going to be a massive shift in a short space of time and that is why the policy that Kevin’s Department is going to lead on about more activism in terms of skills is so important. We have to guide, push, cajole, encourage, incentivise people to get training, to get the right skills now because the jobs will be there then; but there is a leap of faith for individual employers and individual workers to get going, and part of our job is to reassure, to inform and to make sure that choices are there for people.

Q347 Joan Walley: So the Department of Climate Change is basically saying that there has to be this dramatic shift and the Department of Skills is saying that that is deliverable?

Kevin Brennan: Yes, and as David said, we signalled this earlier this year in the New Industry, New Jobs White Paper, which is all about a new industrial activism.

Q348 Joan Walley: We will come on to that in a moment. Can I just ask as well though, you are saying that the green jobs challenge is something that needs to be addressed; what research have you done to guide Government policy in terms of the green jobs challenge?

Mr Kidney: I think that the best starting point was the CEMEP Report, the commission between Government, trade unions, employers and academia, which led to the commissioner’s report, which the Government then responded to, and I think one of the better documents that the Government have produced, although this was in the days of DIUS—DIUS took the lead anyway.¹ That was the base about what the future landscape is going to look like because at that time the Climate Change Bill that became the Act was going through Parliament. So that became the starting point. Then Defra commissioned a report on a review of the skills base at the present time, which led to the conclusion that there is latent demand out there but employers have not got to the point yet of advocating for the skills training to meet the latent demand; so that is

where we realised that there is more for Government to do. So the crucial report for us was the Innovas report in March of this year, which is the one from which we quote all the figures in the two memoranda that we have submitted to your Committee about the size already of the low carbon and environmental goods and service market and its scope for expansion in the future, and from that building outwards from that one sector to across the whole of our industry so that every job in the future will have a green element to it.

Q349 Joan Walley: We have the CEMEP Report and we have the follow-on report from Defra and so on, but how is that being interpreted amongst the regions of the country? Is it not just reports that we have? How is that being put into practice? And where it is being put into practice, which of the sectors are the most deficient in terms of their understanding of the green jobs agenda?

Kevin Brennan: In relation to the regions there are two elements to that. First of all there is the development of the low carbon economic areas where, as the Committee will be aware, we have already started developing two of them: one in the southwest, trying to take the comparative advantage in wave and marine energy in that area and bringing together partnerships to meet the identified skills gaps in those areas for developing green jobs in the future; and in the northeast around ultra low carbon vehicles, boosted by the investment recently of Nissan.

Q350 Joan Walley: What about in the West Midlands?

Kevin Brennan: In the West Midlands there is an excellent example that David would like to talk about.

Q351 Colin Challen: And Yorkshire!

Mr Kidney: First of all, the question was have we some examples of where this is already happening on the ground, and I think that the two low carbon economic areas are really good examples because in the southwest with the marine focus we already have everybody on the same side in terms of the employers, the trade unions and academia in terms of focusing on what their skills needs are going to be in the future, and then developing a skills action plan for marine in their region already. I would not like you to think that because it is in a region it does not benefit the rest of the UK—it certainly does: for example, for the Wave Hub contracts the cabling came from JDR cable systems in Hartlepool; so the rest of the country benefits when we do well in one area.

Also, in terms of future direct investment for this country, places like the southwest are going to be attractive for people who have either development proposals or supply chain offers in terms of marine in the future. So a lot has come of that. If you turn to the northeast I am sure it is no coincidence that Nissan decided to invest £200 million in putting their electric battery plant in the northeast because of our thinking on what we want to do for that area. On the

¹ *Note from witness:* The government response to the CEMEP report was published in May 2008. This was a joint document produced by Defra, BERR and DIUS.

back of what they have announced, we, as a Government, are looking at a research and development centre that will bring together all the five universities in that area. Also, because of that low carbon focus on ultra low emission vehicles that area is going to get quite a lot of that spending that we have announced for the electric car plug-in infrastructure—750 charging points throughout their region. Because they are focusing on low carbon they have big plans for bio-energy and offshore wind in the northeast as well. So that is in those areas. You say, “What about the West Midlands?” We are positively demanding of each area that they come forward with their plans for taking us to a low carbon future and what we are saying to them is, “What is your competitive edge? What is it you want to offer that we would get behind and support you in?” And the West Midlands ought to come forward with theirs. I was particularly impressed by next door, the East Midlands, where, without any help from Government, we have seen that their employers and their further education and higher education institutions all came together under a banner of skills for energy, and they now produce course materials in their colleges that they share with their employers. The employers share their intelligence with the colleges and they have the common knowledge platform between them, and their regional development agency positively promotes this outwards as being the strength of their region—that they are strong on renewable energy, on emerging technologies and, crucially, on sustainable buildings for the future as well. They have made those an identity for their region and that is what I say we should be doing in every region of the country—we should be looking at what our identity is for this new low carbon future that we all have.

Q352 Joan Walley: Which leads me on to ask whether or not you have identified sectors which are deficient in terms of the green skills agenda?

Mr Kidney: Sort of, is the answer. Every sector of the economy is going to change as we go forward, but there are some where we know we want to make a difference. You saw the money from Budget 2009 for offshore wind, for example, for marine energy, for nuclear low carbon aerospace for the future, the low carbon vehicles of the future, and we know that construction is going to be crucial to everything that we do. So there are some kinds of areas that we know we need to give special attention to; but we do not want to back winners or exclude anybody, we want every sector in the country to play its part in bringing our country to this low carbon future.

Q353 Joan Walley: Is there a figure that you have of the number of low carbon jobs that would need to be created before we had a green low carbon economy?

Kevin Brennan: I do not think there is.

Q354 Joan Walley: How can we measure it then?

Kevin Brennan: I do not think there is for this reason: obviously you can look at what the Government’s policies are around low carbon and around

renewables and so on, and you can make an estimate of the numbers of jobs that could emerge as a result of that. On the other hand, the strategy is not to create a certain number of jobs and have a command economy approach, a five-year plan that will result in X number of jobs because actually Government are not very good at doing that—the ‘predict and provide’ idea of jobs is really not what we are about here. What we are about is having a much more industrial activist approach to low carbon, about having good intelligence and evidence of what is on the horizon and using the evidence out there and using bodies like the United Kingdom Commission on Employment and Skills to give us high quality intelligence, and then incentivising the system in order to be able to provide the skills support needed to develop jobs in the areas where we think that there will be growth. So we do not have targets for jobs in particular areas, although we have an idea about the sorts of jobs and the numbers of the sorts of jobs we think will be created on the horizon. I am afraid that economic forecasting and skills prediction is not an exact science. Policy and past experience show that governments are not very good at that; but what we can be good at is incentivising the system and trying to be smart about what is on the horizon.

Q355 Joan Walley: Finally from me now, is it a question of greening existing jobs or is it a question of creating new jobs?

Kevin Brennan: I think the answer is both.

Mr Kidney: Absolutely both.

Q356 Colin Challen: I am not entirely clear what our approach actually is. Is it a demand side approach or is it a supply side approach? Do we anticipate that our market signals will encourage the private sector to develop these jobs, or do we anticipate that something is going to change and help provide them ourselves? Because it is a bit of a chicken and egg situation where we are hoping that the signals will be sufficient to create the demand for the jobs; but just to contrast that with our energy policy, when the Government have repeatedly said that they will not predict the mix of our energy supply it does mean that private companies find it very difficult to plan—they need something a bit more certain than that. So you do not know whether you are going to have nuclear jobs or renewable energy jobs and that kind of confusion has caused problems. So are we just waiting for the market signals to work their way through and then just hope that private sector employers will start training people to meet the demand, and is that going to have a timeline as well?

Kevin Brennan: David will kick off.

Mr Kidney: First of all this business about is it demand or supply side? If you go back to the CEMEP Report, it is clear that there is going to be some of each—there has to be the pull and there has to be the push. I think the word that you have missed and what we have already said is that for Government the approach is activism. We have to alert everybody about the huge shift in our economy that is going to happen in the next decade and how we have to be ready for it. We then have to give the

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signals and the incentives for people to get training early, which means right from the courses that are available, the curriculum, the qualifications, right through to what the jobs will look like. But we cannot today say that it will be X-thousand jobs in this sector and Y-thousand jobs in that sector, and that actually brings me to your point about the energy of the future. The Renewable Energy Strategy and the Transition Plan show that we are going to need lots of renewable energy, lots of nuclear energy and lots of clean fossil fuel energy. We do not know precisely how the investment will pan out, how the speed of development of each will pan out, and that is why we will not say the mix is 30-30-30 or whatever because we do not precisely know how it will turn out to be yet. But we do know that we have to press our foot to the floor on the accelerator for all of them because they are all going to be needed. It is just the same—every sector is going to need these kinds of skills and we need to be encouraging people and providing the signals and the incentives for people to be able to make the shift.

Kevin Brennan: In answer to the broader and to the philosophical point you were making in your question, Colin. Ultimately, our view is that it is successful businesses that are good at job creation rather than command and control from central Government; but on the other hand, particularly in this sort of area, there are elements of market failure that mean if you leave it simply, entirely, to the market it is not always going to produce the optimum outcome. So what we have signalled in the last year, as David said, is a greater activism around this in trying to give (a) clear steers of direction from the Government about what shape we think there is to come in the economy and what the future is for a low carbon economy; and (b) to incentivise the system and invest in helping to kick-start that process that we hope will produce the businesses of the future that are going to create the jobs that we are talking about. Ultimately, though, governments are not particularly good at accurately and entirely predicting what is going to happen in the future—we would probably all be millionaires if we knew what was going to happen in five years' time—but what we can do is to try to read the evidence as clearly as possible and set out a strategy and a framework to help businesses towards creating those jobs that we think will be created with that support.

Q357 Colin Challen: I am just wondering how bumpy a ride this is going to be. We have these targets for 2020, and it is only ten years away, and a great deal of work to be done. We have had one or two high profile cases recently, like the Vestas' Isle of Wight example where I know that DECC was very active in trying to save those jobs. Do we have some sort of crisis management? It is a great shame to lose those talents and skills when it is just left entirely to the private sector to decide. You have talked about industrial activism but does it extend to state intervention to protect jobs and build on those skills?

Kevin Brennan: I think there has been some state intervention or some state support around that area, but David might want to talk about the detail on the Vestas' case of what happened and what the Government's involvement was.

Mr Kidney: I think the starting point is that the normal rules of business have not been suspended because we are going into a low carbon future—businesses will still succeed or fail on their marketing, their research, the quality of their services and that they do have a market for what they are offering. In the case of Vestas this was a Danish company building blades for onshore turbines in the Isle of Wight for the United States market and on a review of their business they decided to move their manufacturing facility nearer to their market. So, there is quite an interesting message there for us for the future: for example, as we get bigger and bigger on offshore wind and marine technology, we will suck in manufacturers and supply chains to this country because they will want to be where the market is. It is interesting that when Vestas said, "Could we use our facility in the Isle of Wight to do blades for onshore wind turbines in the UK?" they decided against it, not because of any obstacle from the British Government. I heard their Chief Executive on the radio one morning giving an interview on this and he said that the British Government could not have been more helpful in money, expertise and advice; but he said, "Our problem was we did not see that there was a sufficiently reliable market in the UK because of the planning system holding up so many of the onshore wind farm developments." That is something to which we have had to give attention in terms of the planning system and we are doing, but that is beyond our control. But there will be companies who fail along the way and it is not our job to tell you that we are going to jump in and bail more out because we think that low carbon is a good thing. We want successful businesses and those are the ones that we are going to be encouraging, supporting and giving advice to in the future.

Kevin Brennan: We have invested in the ongoing research facilities as well.

Mr Kidney: People like Colin will know that they have retained a research and development capacity on the Isle of Wight because they are looking at moving into providing the blades for offshore wind turbines, which is a very different beast as Colin well knows. And we have with SEEDA given a grant for them to maintain and establish their research and development facility, which has saved over 100 jobs; but I do not minimise the 424 redundancies that happened.

Kevin Brennan: There were significant redundancies back in Denmark as well in their home patch.

Q358 Colin Challen: These things obviously move around to different countries for different reasons, different market conditions. But we are faced with this big challenge. The Climate Change Committee published its first report to Parliament a couple of weeks ago and the title of that included the phrase a "step change". Is there anything at all in what you

are doing? Could you give me an example of how the two Departments are actually putting into terms this step change? I know that the ministerial response to the CCC report is not until early next year but can you give me one concrete example of the step change that has happened in each of your Departments?

Mr Kidney: I am not sure about a step change but I think that that report is very exciting because it does show the scale of the challenge in the future, to which the Transition Plan points. So that helps to stir us on and wake everybody else up to the scale of the challenge, that is for sure. But in terms of the renewable energy side, which obviously I have a close interest in, what has been encouraging to me is to see the individual Sector Skills Councils and sector bodies actually coming together in collaboration in order to say that across our sectors—not in one particular silo—we need a renewable energy skills strategy, and together these eight sector bodies are developing that themselves. So I think that is quite good. I am not sure how keen you are on nuclear, Colin, but in the nuclear sector there is a very, very good example of the Sector Skills Council, Cogent, and the National Skills Academy for Nuclear, plus our Office for Nuclear Development all working together in getting the research base right in terms of what the future needs for skills will be, and then the skills strategy to fit those needs. I think that is quite exciting and does show certainly a step change when we are talking about more nuclear capacity in the future than we have at the present time.

Kevin Brennan: David and I are working very closely together and the two Departments are working very closely together, for example on the development of a National Skills Academy for Power, on which we are waiting for the detailed business plan. We are absolutely working together on developing that, and those National Skills Academies, together with the investment in the budget in this area, do represent a significant step change by Government just in the last period.

Q359 Colin Challen: The Climate Change Committee and the Government accepted its recommended budgets. Obviously it is working to a lower level of expectation in terms of low carbon economy. Pending a satisfactory agreement in Copenhagen of course those budgets will be much tighter. Are you conducting any contingency planning for the higher budgets which, of course, are still based on the period 2020—still only ten years? So if we did adopt those higher budgets, what will people delivering skills and capacity have to do and how will they have to respond to that?

Mr Kidney: The answer to your question is of course that we are and let us get to Copenhagen; let us get the deal in the bag and then we will come and talk to you about what our thinking is and see if you agree with it.

Q360 Colin Challen: So you have two plans: one plan for the existing level of budgets, and you are working on a plan B at the same time for the higher level of budgets in terms of delivering skills and capacity?

Mr Kidney: That is putting words in my mouth that I did not say. You say: “Have we contingency plans for if the targets that we have already set out in the Transition Plan get moved up another notch because of a deal at Copenhagen?” The answer is “Yes, we have.” That is the answer to your question—“Yes, we have.” I get very nervous about a plan-B. There is no plan-B for Copenhagen. But we understand that if the scale of the challenge becomes even greater, there is even more that we will need to do and we are working on how we will achieve that even more.

Kevin Brennan: In terms of budgets, we know that we are in a tighter fiscal situation and we are going to have to prioritise according to what comes out of that really, but at the moment clearly we are working on a National Skills Strategy which will be published quite shortly and that will be followed by a skills investment strategy, which will indicate how we are going to use our resources to try to make sure that we have a system that is producing the right sorts of skills and qualifications at the right level.

Q361 Colin Challen: Finally from me, there is a lot of work involved here in preparing it and perhaps banging heads together. Within your Departments are you actually employing any more people yourselves to deliver this strategy, or are people being taken off other work? Or is it simply an extra file in the in-tray? To what extent is this whole thing being prioritised and supported?

Kevin Brennan: Of course we are a new Department and have brought skills and business and industrial policy together in the Department of Business, Innovations and Skills this year to try and bring all the leaders and expertise together in one place, including the delivery of new industry, new jobs and the low carbon ambitions within that. So, I think that has been a radical reorganisation within Government, part of which is aimed at achieving these goals.

Q362 Colin Challen: Is this work ring-fenced against future public spending cuts?

Kevin Brennan: I do not think anything is ring-fenced, to my knowledge.

Mr Kidney: The reassurance I want to give is that Kevin’s Department has the lead across the whole of economy in terms of skills, but there are lots of Departments that have an interest in this subject, so I am the Rottweiler on behalf of DECC for the low carbon economy that we are all moving towards; but then there is just as big an interest in transport in terms of low carbon strategy for transport in the future. There is big interest in schools in terms of the curriculum of the future and that emphasis on STEM skills, for example. DWP with its jobs advice and job search for people, at the moment they have the Future Jobs Fund as well. So every Department has an interest but in terms of a focus and a coherence to Government policy Kevin is your man.

Kevin Brennan: We did try to signal that coherence and working together in July when we published the Low Carbon Industrial Strategy, the Low Carbon Transport Plan, the Renewable Energies Plan, the

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Low Carbon Transition Plan all on the same day to signal that we were trying to join everything up within Government.

Q363 Mr Chaytor: Could I pick up a point that David mentioned earlier about skills and nuclear because you said that in the future nuclear will be making a bigger contribution to the electricity generation than it currently is? Is that absolutely Government policy and at what point in the future will that be the case?

Mr Kidney: That is the immediate position in terms of the nuclear White Paper and the work we have done in terms of giving reassurance to the industry that there is going to be future development in this country— so, the infrastructure planning commission, the work that we have done on decommissioning, the work that we have done on the long-term storage of the historic waste.² The investment plans that have come forward from the consortia who now say they are going to bid for licences to build new nuclear plants in this country,³ have put forward an investment programme that produces over 12 gigawatts of power from nuclear in that round,⁴ so that is the first round of new build in this country. That 12-plus gigawatts is more than the whole of the nuclear industry is providing today in this country.

Q364 Mr Chaytor: More than the 80% of the electricity generation?

Mr Kidney: I do not want to suggest it is some super shift—I think it is about ten gigawatts at the moment, ten point something, and the investment plan is for 12 point something.⁵

Q365 Mr Chaytor: But the 12 gigawatts, how many stations is that?

Mr Kidney: It is about eight stations.⁶

Q366 Mr Chaytor: So at what point in the future would there be eight stations, because all the documentation I have seen talks about perhaps one by the end of the next decade and perhaps two or three?

Mr Kidney: In this round that we are talking about they speak optimistically of 2017-2018 for the first completed new build, and then others coming on stream from 2018 onwards.

Q367 Mr Chaytor: The other seven, this is what I am trying to get at.

Mr Kidney: When the first one is built, yes.

Q368 Mr Chaytor: What is the projected timescale for the completion of the first eight, then?

Mr Kidney: By the middle of the 2020s we would have those.⁷

Q369 Mr Chaytor: So one a year. Sorry, this is a slight digression, Chairman, but it is quite important.

Mr Kidney: You are keen on this subject.

Q370 Mr Chaytor: It is quite important in terms of the economic realism of this, but also in terms of the skills strategy.

Mr Kidney: Exactly.

Q371 Mr Chaytor: Because, if the Government strategy is now eight nuclear power stations by 2025, in terms of the jobs required and the skills in construction and in physics and chemistry, this is quite important.

Mr Kidney: Yes, it is.

Q372 Mr Chaytor: I want to see on the record, this is the plan: eight new nuclear power stations by 2025. So my next question is to Kevin—

Mr Kidney: Can I just finish? The estimate is that with the construction and then the running of the new power station you are talking about 9,000 jobs a time, so it shows you the scale of ambition and of need. Westinghouse, one of the consortia leaders, has given its estimate of how many more new skilled nuclear engineers it will need—about 10,000 for its programme.⁸ Areva has said 10,000 to 15,000 for its. We are talking big numbers and that is why I am so impressed with the work of Cogent, the Academy and our own Office for Nuclear Development because they have got to grips with those numbers and they are planning the strategy to meet them.

Q373 Mr Chaytor: My next question is to Kevin in terms of these figures of 10,000 to 15,000 engineers, and whether that includes physicists and chemists we are not clear; but what are the implications of that for your Department's work in skills development and, particularly, in science in universities given the aging profile of new physicist as a profession?

Kevin Brennan: Indeed. I think we are absolutely clear that we need an expansion in the STEM areas and not just at graduate level but at technician level as well. Without being too coy about it, I think we will have something more to say about that in the forthcoming National Skills Strategy which will be out very shortly, but clearly the implications of that are that we need to step up.

Q374 Mr Chaytor: Will the Skills Strategy actually be using the figures of 10,000 to 15,000 engineers that David has quoted, and will it be setting out how are we going to train these people from technician level to PhD and nuclear physics level?

Kevin Brennan: Without saying exactly what is in it, the Skills Strategy will be a very high level document that talks very, very broadly about the direction of travel we are looking for and will talk about some numbers in or around how many people we need and in what area, and so on. Obviously it would be wrong of me to go too far at this point. It is more of a

² See note from witness, Ev 125

³ *Note from witness:* Industry will apply for both consents and licenses for new build.

⁴ *Note from witness:* This figure may go up to 16GW.

⁵ *Note from witness:* This figure is up to 16GW.

⁶ *Note from witness:* 8-10 stations.

⁷ *Note from witness:* It will be for industry to determine when proposals are brought forward and builds completed.

⁸ *Note from witness:* Westinghouse has estimated that 10,000 highly skilled jobs would be created if its reactor is built.

high level document but clearly that kind of horizon-scanning and understanding of what the needs are going to be around nuclear and other low carbon areas informs what we are going to say in the Skills Strategy, which will be a document at a high level which will have a strong economic focus.

Q375 Joan Walley: Before Mr Chaytor moves on, for the purposes of this inquiry, can I ask if it might be possible to have a detailed paper or submission to our inquiry just on the amount and the funding that is being put into the different aspects of skills in respect of the nuclear agenda and in respect of renewables as well? I do not know when your high level vision statement is coming out but it would be really helpful to know whether or not it would be coming out within the duration of this inquiry.

Kevin Brennan: When does your inquiry go on until, Chairman?

Q376 Joan Walley: The end of the year.

Kevin Brennan: I think I can safely say that our document will be able to inform your conclusions and then any other detail that you would like, we would obviously be happy to supply.

Q377 Joan Walley: Having a breakdown of the funding that is going towards the skills training for a breakdown of the different sectors in terms of energy would be helpful in terms of Mr Chaytor's questions.

Kevin Brennan: We would be happy to submit some more detail following the hearing, Chairman.

Mr Kidney: Can I just supplement Kevin's answer to David? These are not big numbers. If you go back to the Innovas study that I mentioned earlier—this is in our memorandum—we are talking in low carbon and environmental goods and services today of about 880,000 jobs in this country, and with the kind of trajectory we are talking about by the middle of the next decade another 400,000; so you put those nuclear ones into the context of overall 400,000. Then if you want to look further at the sector estimates, the Carbon Trust has done estimates for offshore wind, for marine. There is a construction sector estimate already for their additional need and this is sector by sector something that everybody is facing up to right now.

Q378 Mr Chaytor: My next question is, which Cabinet Minister has responsibility for green jobs?

Kevin Brennan: We see it in terms of green jobs as such as a shared responsibility across government because BIS has overall responsibility around the economy and around employment and industry and so on. However, there are always two approaches in Government that you can take to these things. You can put something into a silo, which can have its advantages in the sense that there appear to be clear lines of accountability and somebody is responsible to answer questions on a subject; but will that effectively drive the response that you need right across Government around low carbon and around the green economy? So we take responsibility around skills and around looking at what the

scanning is on the horizon for the future, getting the right intelligence and trying to develop the skills system that will produce the requirements. However, we think that this needs to be driven right across Government and David and I work together around the agenda we are talking about today, that each Department has a responsibility and a part to play in it. I do not know if David wants to add anything to that.

Mr Kidney: I think that is right. Peter Mandelson is the lead for skills; Ed Miliband is the lead for low carbon transition and the Prime Minister in charge of the Government.

Q379 Mr Chaytor: When we get to April next year the carbon budgets which are currently attached to your Departments for the public sector will be devolved to all Government departments. What are the implications of that in terms of drafting the low carbon transition programme across Government? Is each individual Secretary of State going to have personal responsibility? Do we still have the system of green Ministers, which we used to have and which appears to have disappeared?

Mr Kidney: No, it is still there. With my Department now we have charged every Government Department with producing a delivery plan for the budget for which they are responsible for next year and we make clear that part of that will be to consider the consequences in terms of jobs and skills needs and we expect to see those as part of their delivery plan.

Q380 Mr Chaytor: In terms of the specific industries that have been identified for green jobs growth, the Low Carbon Industrial Strategy identifies renewable energy, obviously, but it does not say quite as much about transport and construction and is that not running away from the real difficult choices? Renewable energy is an obvious sector but transport and, to a lesser extent, construction, perhaps, are where the big savings in emissions can be made.

Kevin Brennan: I think that is a fair point. Obviously in a document like the Low Carbon Industrial Strategy you are going to focus on particular areas, but there are huge steps forward to be made in construction and not just in new build but in retrofit and in existing build, and so on, around the need to move towards a low carbon economy. We have done a lot, as we have said already, through the low carbon economic areas to start looking at some of the issues around transport, in particular about ultra low carbon vehicles and providing incentives and support and bringing people together in order to progress around that, but the priorities that were identified out of the evidence that we had in front of us for what are the future areas where there could also be high productivity gains and comparative advantage for the UK in particular are areas that we want to support, without picking individual winners but as a general way of trying to take advantage of an existing comparative advantage in an area where high levels of growth for the future have been identified.

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Mr Kidney: I just want to challenge the use of words that you used there about us picking out areas of the economy for low carbon investment or retention, whichever you said. Every sector is going to change and all our public documents, including the Low Carbon Industrial Strategy, do mention our automotive industry, do mention our construction industry, do mention advanced manufacturing for the future, all of which must be close to the heart of members of this Committee and are all going to play a big part in shifting us to that low carbon future.

Q381 Mr Chaytor: On automotives, for example, last week our evidence session heard quite a bit about the plans for electric vehicles and the infrastructure. Do you think it is Government's responsibility to finance the infrastructure to kick-start a programme of electric vehicles?

Mr Kidney: I think I had better say that there is some Government responsibility since the budget allocated some money for this, and I have recently boasted about the 750 points we are going to pay for in the north-east.

Q382 Mr Chaytor: All pilot schemes. But in terms of the national infrastructure, whose responsibility is it to get that in place, because without that infrastructure, electric vehicles will never take off?

Mr Kidney: Exactly. The industry in the end is going to take this up, just as there are service stations all round the country. They are not there because the Government have put them there; they are there because the industry has determined that they can make some money out of them in the right places to get their customers to, so that is going to be the industry's responsibility eventually.

Q383 Mr Chaytor: So you do not think that there is a case for any more Government investment in infrastructure for electric vehicles?

Mr Kidney: We are doing the kick-starting; we have made a first assessment of what that means in terms of the £10 million Budget 2009. As we always do, we will listen to representations if people think that is not the right figure or the right amount of effort.

Kevin Brennan: I think the judgment always has to be made about when you have reached the critical mass where the market can then provide, so you can never entirely rule it out, and the difficult choice to make always in Government is to try and make sure that you are not investing simply in dead weight in providing something that could be provided through the markets. If you did that you would use your entire resources on things that could otherwise be provided, but it is getting to that critical mass and I think this very significant investment in the north-east will help to prove the concept.

Q384 Joan Walley: The Cabinet cost-cutting green Ministers' meetings that were set up, do they still meet and does the work of each of your Departments feed into that or are they no longer there?

Mr Kidney: I am new since June; I am our Department's green Minister and I have not been to a meeting of the green Ministers.

Q385 Joan Walley: So you have not?

Mr Kidney: I have not been to the green Ministers' meeting yet, but other aspects—I mentioned that we all have apprenticeship champions, too, now and Kevin recently chaired a meeting of that group, which is kind of similar, and I was able to make points like the ones we are making around this table today at that meeting. So, I think the network is still in place and is still working.

Kevin Brennan: Similarly, I have not attended any green Ministers' meetings since taking up this post in June, although I have chaired two apprenticeship meetings where we have talked about increasing the numbers of apprentices and how we can do that across Government in the context, as David rightly said, of the low carbon as well.

Q386 Jo Swinson: We heard evidence on the need for a street-by-street retro-fitting programme of building homes with energy measures. What would the impact on green jobs be on that kind of programme?

Mr Kidney: That is a cracking idea that you have heard representations for and I am pleased to say that it is one that we have adopted. We did announce last month—September—the Community Energy Saving Programme, CESP, which is exactly that: house-by-house, street-by-street renovation, starting in the most deprived areas in England, Wales and Scotland. Clearly, as we move beyond the straightforward loft insulation and cavity wall insulation to the hard-to-treat properties, for example, those with walls that do not have a cavity and so you need to do something to their solid walls to improve the energy efficiency of the home, it is going to be more expensive. I am not convinced that we have entirely the right technologies at our disposal yet, but eventually they are going to make a huge impact in terms of the energy efficiency of people's homes, so reduce bills—less fuel poverty and fewer carbon emissions from their homes. Clearly, as we ramp that up, so that is going on all around the country. It is lots of jobs and so I think people in the insulation and building construction sectors ought to be very excited about this and be thinking about possibly the changes in their skill sets that they need for this work.

Q387 Jo Swinson: Is there any chance of something more precise than “lots of jobs”?

Mr Kidney: In terms of the numbers? We gave an estimate in one of Kevin's Department's documents. I think it was the consultation before the Low Carbon Industrial Strategy,⁹ about 230,000 more construction jobs with these kinds of skills by 2010. I think it is fair to say that that was given before the economic recession hit home, so that is not on track at the present time. In terms of asking me what sort of numbers are we talking about for this kind of

⁹ *Note from witness:* This figure was included in the Sustainable Construction Strategy, with a target of a net increase of 230,000 qualified people recruited and trained in the industry by 2010 compared with 2006.

work, over 200,000 new jobs in construction with the kind of skills that we are talking about are needed now.

Q388 Jo Swinson: You say that this is what is being implemented but the evidence we heard last week from the Committee on Climate Change, obviously following on from their recent progress report, seemed to suggest that the current trajectory was actually not going to be enough. Do you think that the Government strategy on this does need to change to reflect the Committee on Climate Change's most recent progress report?

Mr Kidney: It is quite exciting that they show us there has to be a step change up and so we need to meet that challenge. I think that they give a little less credit than they ought to for six million homes with energy efficiency measures under CERT already, two million under Warm Front and one million under Decent Homes Standards. Our target for six million homes insulated between 2008 and 2011 and every loft and every cavity wall that is available to be filled, filled by 2015, these to me are all stretching targets and achievements already. But I accept that they say we have to go further, and as we learn the lessons of CESP, which were only commenced in September of 2009, there is a little way to go to learn the lessons of it. If we find that that is the best method for the future I would expect that to be racked up post-2012 to the kind of scale that the Climate Change Committee was talking about.

Q389 Jo Swinson: Another opportunity to create green jobs would come from behavioural change programmes such as the "smarter choices" transport programme. Why is more not being done to encourage those types of jobs?

Mr Kidney: In terms of green skills, we know there are gaps in terms of information, management and procurement-type decisions and demand managements, and those have been identified by us as requiring attention. I do not quite understand the question as to why have we not promoted it. I think transport is very important in reducing carbon emissions as part of our low carbon future and as a Government we positively promote that solution.

Q390 Jo Swinson: But in terms of the behavioural changes, so things like the smarter choices and encouraging people to make differences, there does not seem to have been a big push on encouraging those kinds of green jobs even though they are actually fairly low cost and can deliver a significant benefit.

Kevin Brennan: I think we have identified a need on the specific side in terms of green skills, in terms of being able more effectively to communicate information to try to bring about behavioural change and other more specific skills that are identified in the strategy, as well as recognising the generic ones, so I do not entirely accept the premise of your question that nothing has been done on that.

Q391 Jo Swinson: How many jobs have been created through these programmes, then?

Kevin Brennan: I think we are talking about identifying the particular gaps that there are, which we have been doing in the last year, and then the investment in the budget around trying to identify where we can invest further around green jobs. It is impossible to say at this stage what number of jobs have been created around it, but what we have done is identified that these are skills needs and that we are going to have to incentivise a system to provide more training qualifications and so on in conjunction with employers around better information to bring about behavioural change of the kind you are talking about.

Q392 Jo Swinson: But it is not just going to be up to business; it is not just about creating the skills so that these people can go into jobs created by business. Surely there is also a role for government programmes to encourage that behavioural change and that would create a number of jobs so that even if you do not have the numbers at the moment perhaps you might be able to get back in touch with us about the numbers that would have been created so far by the government's promotion of those types of programmes creating jobs.

Mr Kidney: This is the first time, I have to admit to you, after all those wonderful estimates I have produced sector after sector for you, that I do not have one for transport in terms of sustainable transport estimates and I will have to have another look at the Eddington Report and talk to my colleagues at the Department for Transport. My own Department's attempts at behavioural change are all focused through Act on CO₂. We sponsor the Energy Saving Trust which has advice centres in every region of the country to give advice to householders on their homes and their travel arrangements and we sponsor the Carbon Trust to advise businesses on reducing their overheads as well as becoming more efficient and cutting their carbon emissions, both in their business processes and in their travel arrangements. So I can see that there are quite a lot of jobs in the Energy Saving Trust and the Carbon Trust from my managers of Act on CO₂ that already exist. But you are asking me beyond that in terms of sustainable transport and that is one thing that I am afraid I do not have today.

Q393 Jo Swinson: We look forward to receiving that. Finally, there is obviously a requirement to match up these new jobs with people who are out of work or perhaps who do not have the skills to make sure they have the skills. What are you doing to try to make sure that that matching up happens to encourage the people who are out of work and make sure that they are therefore able to be employed in these low carbon industries?

Kevin Brennan: We are putting together a forum around Just Transition to a low carbon economy because clearly this kind of economic change when it goes on can often leave behind the kind of people you are talking about. I am working very closely with the Department for Work and Pensions to try and integrate more effectively our employment and skills services. They also have a White Paper coming

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out shortly, which we have been contributing to and working very closely with, to see how we can better integrate employment and skills to make sure that people who are out of work get the opportunity and the skills they will need to get these kinds of jobs. Clearly, through things like the Future Jobs Fund, which has a significant green element to it, the hope is that we can create 10,000 jobs with the Future Jobs Fund that are identified as green and low carbon jobs, so I think that Just Transition forum will be an important part. It will have representations from the trade unions, representations from the community groups, from business, from Government and from local government, and so on, to make sure that we are planning so that people do not get left behind in this economic transition that we are going through.

Mr Kidney: It is worth mentioning the Real Help Now work that has been done because of the problems of the global recession and the Future Leaders Programme. For example, in the south-west, where they have their low carbon economic area for marine energy, they are taking STEM graduates who do not have a job and placing them with the marine industry in the south-west, which I think is a really good example of here and now doing something that helps with the problem of unemployed graduates and helps with the problem of stimulating demand and skills in an area in which we know we are going to be big in in the future.

Q394 Joan Walley: Can I ask two follow-up questions? You mentioned just now about the replacement to the CERT programme and the street-by-street programmes for areas of high deprivation to upgrade homes. Could you just give the Committee details of when the closing date for applications is or what decisions have already been made as to which areas will benefit from that, and what you are doing to make sure that applications come in? I am sure that we all have an interest to declare in this in the Committee.

Mr Kidney: We are absolutely mad keen for local authorities and energy companies and electricity generators to come forward with their schemes for areas in those most deprived estates in the country for programmes under CESP. We expect about 90,000 households to benefit eventually. The scheme is not closed in the sense that we are still waiting for proposals from people.

Q395 Joan Walley: Is there a closing date?

Mr Kidney: No, not until we have filled our 90,000 household ambition, and we are not there yet.

Q396 Joan Walley: Has it already been rolled out in parts of the country?

Mr Kidney: Yes. Last week British Gas announced their first ten areas where they are in partnerships with local authorities and with voluntary organisations and community groups in the areas. On the day of the announcement, 21 October, I went to Peckham, which is one of the areas in which British Gas are working; yesterday I went to Harrogate, which is another one. However, do not let me persuade you that that means they are all in

London—there is one in Dundee, one in Glasgow, one in Swansea, one in Preston, one in Knowsley, one in Walsall, one in Birmingham. Those are all the British Gas ones. There are five more major energy companies—there is the Electricity and Generators, there are local authorities up and down the country. I am waiting for your call.

Q397 Joan Walley: I shall work on that. Perhaps I should declare an interest. Can I move on as well in terms of the Treasury? What I want to ask is about the recession. I have heard the Chancellor speak about all that has been done to get us through the recession and I have to admit that I have heard speeches whereby there has been no mention of the green jobs agenda, so I attach great importance to the role of the Treasury in terms of making sure that work to get us through the recession is linked to this green jobs agenda as well. I would like to know in your view, from where you sit in your respective Departments, how you are working with the Treasury to make sure that some of the most deprived areas are benefiting from the new green jobs technologies, but I would also like to ask an additional question, which is perhaps the perversely called Green Book of the Treasury. I would like your comments on what needs to be done to the Green Book, which sits there at the heart of the Treasury, to perhaps influence where spending should be and whether or not that needs to be revised and, if so, urgently.

Kevin Brennan: In relation to Treasury policy and dealing with the Department, obviously if you want to probe in detail around Treasury policy it might be a good idea to ask a Treasury Minister, but certainly from our point of view, in the last year I think there has been support from the Treasury around this agenda. There was significant investment in the budget.

Q398 Joan Walley: How much, where, and what sort of investment?

Kevin Brennan: £405 million in the Budget around the creation of a low carbon economy and green jobs—that was there in the Budget. As David mentioned, in a lot of the recession, with Real Help Now, particularly in relation to the Future Jobs Fund, there is quite a strong emphasis on green jobs and, in particular, on helping people who are out of work now get into jobs with a green element to them to signal that way forward for the future.

Q399 Joan Walley: Could you just give us an example of those jobs on the ground, please? Do they actually exist?

Kevin Brennan: I think Groundwork is a good example of a sector organisation in this case that is creating a large number of environmental jobs in the community. I do not know if David has any particular examples of them.

Mr Kidney: I cannot give examples of the individuals, but when you say: “Do they really exist?” in the figures for round two of the future jobs allocations over 580 of them were directly green jobs through the Groundwork programme—part of the

10,000 that we are going to produce under the Future Jobs Fund. Then, when you say: “How many in round one?”, they did not keep figures—they rushed the money out the door so quickly that they did not keep statistics on individual details—but they will in future rounds beyond that. So, there are definitely hundreds of jobs today that are green because of that particular programme.

Kevin Brennan: The target overall is for 10,000, I think. In relation to the Green Book and reform of that, it is not something that I have particularly cogitated upon or have any particular advice upon—it may be a question for a Treasury Minister.

Mr Kidney: I would like to put in a good word for the Chancellor. In Budget 2009, in the teeth of the worst global recession in living memory, he found lots of new money for our priorities. Kevin mentioned the specific fund, the £405 million, and that is the one where I keep mentioning to you the offshore wind and marine, the automotives. I ought to mention the manufacturing advice and the extra venture capital that was provided from that £405 million, but in addition to that there is also the Strategic Investment Fund of over £750 million and, although I do not want to be accused of double-counting, some of that is part of the £405 million.

Q400 Joan Walley: So who would benefit from the Strategic Investment Fund?

Mr Kidney: Lots of sectors would benefit from the Strategic Investment Fund. I have some examples here in terms of energy efficiency, renewables, technology support, waste, transmission of electricity, distribution infrastructure, public transport and low carbon and the electric vehicles. All of those areas would benefit from the Strategic Investment Fund. What I wanted to mention is the determination in finding all of that money for us in that budget, as well as the £405 million, as well as the Strategic Investment Fund. Remember that he found another £100 million for the Carbon Trust for making interest-free loans to small and medium-sized enterprises to improve their efficiency and go low carbon, and he found over £64 million of extra money for the public sector—again, interest-free loans to the public sector to make energy efficiency savings and go low carbon.¹⁰

Q401 Mark Lazarowicz: Given the discussion about the Community Energy Savings Programme—and I should at this stage mention that I am an unpaid board member of Edinburgh Community Energy Co-operative, and although I have no pecuniary interest and we have currently no applications to assist for future funding under a Government scheme, I should declare an interest in case at some stage in the future that does happen—I want to ask you something about the skills issue in a bit more detail. We have a new skills framework being established in England and Wales and also in

Scotland. How far will we be able to tackle and identify a shortage of green skills and how far is the need for green skills being integrated right at the centre of development policy on the green skills framework? Can you help us on that?

Mr Kidney: In terms of the intelligence-gathering and feeding into the planning, it would be the UK Commission on Employment on Skills, the Government’s adviser on this. Then in terms of the strategy, that would be the Sector Skills Councils in each sector, or collaboratively where it makes sense, like those eight sector bodies I mentioned. Then in each region I would expect the Regional Development Agencies to be pushing this home at the regional level so that eventually I hope that every region earns this low carbon economic area status or branding because of the work they are doing at the regional level.

Kevin Brennan: I think that is exactly right, the way that David has described it. On top of that I think we would also like—because it is a common complaint—to try to simplify the skills system at the same time in order to, perhaps, make it more responsive and more effective in identifying or using the intelligence that comes from the UK Commission on Employment and Skills, in order to make sure that that is happening down at the regional and sub-regional level.

Q402 Mark Lazarowicz: Can you give us more of an idea how that would be taken up by the sector specific skills of delivering the framework, for example? Can you give us examples of how this might apply in particular sectors?

Kevin Brennan: Do you mean with sectors working together?

Q403 Mark Lazarowicz: Yes.

Kevin Brennan: I think we have one very good example that David has mentioned already where we have eight different sector skills bodies working together around the renewable energies area on a sector basis; and the eight bodies are Asset Skills, Cogent Skills, Construction Skills, Cogent, Lantra, SEMTA, SummitSkills, and ECITB, which have worked together with the British Wind Energy Association in order to develop resources to help the industry identify the kinds of qualifications it needs and design the right sort of apprenticeship frameworks that are needed to take forward progress on renewable energy and also guidance around the development of STEM. Also, they have signed a Sector Skills Accord with the British Wind Energy Association towards the end of last month and they will be launching their first apprenticeship programmes in September 2010. So I think there is real progress being made sectorally around these approaches and making sure that we are designing qualifications and apprenticeship frameworks that are ones that are going to be in demand in these particular areas, and that is an example from renewable energy.

That kind of working together of sector bodies, perhaps sometimes on a task and finish basis but also on a long term basis, looking to simplify a thing and

¹⁰ Note from: Budget 2009 announced £100m for low cost energy efficiency loans for small businesses. Of this, £83.9m goes to the Carbon Trust for delivery in England, with the remainder going to the Devolved Administrations on the Barnett formula.

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the sector skills landscape within an employer-led way—because they are employer-led bodies—is going to be very important.

Mr Kidney: If you ask for one sector skills example I would say Cogent and nuclear. Cogent did drive all that work that has been done with the Academy, with the Office for Nuclear Development and the skills research that they did to get their basis and now the strategy that they are working on, that is a good example of one sector.

The example I gave you about the East Midlands is a good example of all the sectors in a region being brought together by the Regional Development Agency and working with employers and with academia to get one agreed approach for skills for energy. My statistic is 100 industry participants in three sectors, seven FE colleges signed up and 14 more colleges wanting to join, all led by the universities of Loughborough and Nottingham, so there is a good example there of the whole lot.

Then, just going back to the low carbon economic area in the north-east, Gateshead College and Sunderland University are doing work on the curriculum changes that they need in terms of getting the right numbers of apprenticeships, of foundation degrees and degree graduates in order to fill the needs of their area for those low carbon economic activities that they intend to undertake. I think those are all really good examples of people who are on the ground already making things happen.

Q404 Mark Lazarowicz: We had evidence in a previous session from the representative from the Renewable Energy Skills Group who said that his group had not been involved in developing any part of the new skills strategy for green skills. I take it that other organisations have been involved and consulted in relation to the strategy as well as in particular sectoral issues. Is that so?

Mr Kidney: I must admit that I do not immediately recognise the name of the group. Can you tell me any members of the group?

Q405 Mark Lazarowicz: The gentleman was Tim Balcon from Energy and Utility Skills.

Mr Kidney: We work very closely with Energy and Utility Skills. This whole thing that Kevin mentioned about the National Skills Academy for Power—the EU Sector Skills Council has been a great advocate for the Academy, and even when we faced difficulties when their business plan cost miles more than their expression of interest, we worked really hard with them to make it work. That is an unfair comment that you had in that evidence and I would like to challenge that and say that we do involve them.

Q406 Joan Walley: We did have them before us the week before last.

Mr Kidney: I wish I had been here to ask them questions then!

Q407 Joan Walley: Perhaps it might be helpful if we could get some liaison between yourselves and them and get something on the record.

Kevin Brennan: I think it is fair to say—and I do not think this is a state secret—there is a large number of bodies in the skills landscape and different alliances coming together, so it is important sometimes to try and get some clarity and simplification and that will be a theme of the Skills Strategy, to try and hide some of this wiring, which does complicate matters.

Q408 Joan Walley: If we can just move on, and it follows on from that set of questions, it is not exactly clear as to who should be taking the lead when it comes to industry and the green skills that are needed, and the research bodies that there are and the universities. How does the government deal with, if you like, prescribing where the training is actually needed? Perhaps just to give you an example—and perhaps declaring an interest—I chair the All-Party Lighting Group and I met recently with a Government Minister and there was a lot of concern that there should be energy efficiency in terms of lighting. Our meeting was concerned to learn that, for example, energy efficient lighting is not in the new programme—the new upgrading of homes, and so on. I wonder where the lead for what should be done is actually taken. Where is the leadership role in all of this?

Kevin Brennan: I think the first part of the question is within the Department for Business, Innovation and Skills.

Q409 Joan Walley: Is that within you?

Kevin Brennan: Yes. I am sorry?

Q410 Joan Walley: Is that within your part of that?

Kevin Brennan: Obviously the Department for Business, Innovation and Skills includes the university sector, which is not part of my ministerial responsibility—that would be David Lammy—I do FE and skills and apprenticeships. However, yes, the first part of your questions is undoubtedly our responsibility as a Department. When it comes down to the details of the requirements around the energy efficiency of homes, that would not come under our remit, but, more broadly speaking—and I cannot remember exactly the word you used about requiring or directing the skills that are to be delivered—the skills system, I think, has to be a little bit more subtle than that for the very reason I said at the outset: that the whole idea of predict-and-provide is not a very good way to run a skills system. What we are trying to do is to incentivise the system so that it can remain demand-led, both from the point of view of people who are embarking upon skills-training as individuals, but also from the point of view of employers being able to feed into the system to signal the kind of skills that are required, together with a Government role. We will set that out in the Skills Strategy, with this new industrial activism of being a bit clearer and a bit more directional about the areas of the economy where there are going to be new industries and new jobs developing. Low carbon is, obviously, a particularly strong part of that. So it is

our job to do that and that is what we are going to be doing in the National Skills Strategy to be produced shortly. The detail around the regulation with regard to lighting, perhaps David can shed some light on.

Mr Kidney: Very amusing! Just listening to Kevin, it reminds me of a Government Department that I missed out with a key interest in all this: that is Communities and Local Government, that sets the building standards, the building regulations and the enforcement of them. So there is another key Department that we should not lose sight of.

Q411 Joan Walley: I am not clear how we are really helping industry to articulate their skills needs more effectively. How does what you have just said about the Business Department feed down at the regional level? For example, through the regional development agencies, so many small companies are probably fighting to keep their heads above water that this is perhaps just not on their radar at the moment because they have so many other things to deal with? What support are we giving to industry?

Kevin Brennan: I think we have to do it at two levels: at the sector level, through the sector skills councils, which are employer-led bodies supported by Government, to give us the information and the intelligence, the qualifications and the sorts of skills that are needed across sectors in the economy; but you may be aware, Chairman, that we also, over the summer, have looked at a regional level at this issue of how we should be developing our skills strategies and—in the pursuit of simplification—try to provide a bit more clarity around that so that the new Skills Funding Agency will not be in charge of developing regional skill strategies but, in conjunction with some of the lead local authorities, through devolution, the RDAs will take the lead on regional skill strategies, working with local authorities, with employers and with educational institutions, in order to provide that sort of support at regional level.

Then there is a whole variety of other business support available to people, including through Business Link, and so on, and advice to small and medium enterprises, particularly around the green agenda. So the idea in the system is that, yes, there is a sectoral element to it through the sector skills councils, which are employer-led, but in terms of the regional skill strategies, the RDAs have an important role to play, and we have tried to take out one level of complexity there. The Learning and Skills Council used to have a role in that, but the new Skills Funding Agency will not, it will have a more national strategic role around funding skills.

Mr Kidney: When I said that the UK Commission for Employment Skills will provide the Government with intelligence, obviously a key part of that intelligence is that employers are saying that there is a shortage here or there, and that is the kind of intelligence we will want to pick up.

Q412 Joan Walley: So you are satisfied that there are sufficient plans in place to be able to forecast future skills needs across this green agenda.

Kevin Brennan: That is the role that we have charged the UK Commission on Employment and Skills with carrying out. In doing that, it is its job—and it does have employers as part of the Commission—to work closely with employers to get the sort of information about that and to use the research and evidence available to make those sorts of predictions. I think it is also its job to get employers to step up to the plate a bit more themselves on skills. We do sometimes, I think, over-focus on the Government's role in this, important as it is, but obviously it is in the interests of employers themselves that they should be investing in the skills of their workforce, and part of our Skills Strategy, encouraged by the UK Commission on Employment and Skills that recently issued a report, is to make sure that we get employers to make their contribution as well.

Mr Kidney: When Kevin says “employers”, we mean the world of employment, and so trade unions are also very important partners.

Q413 Joan Walley: Yes, we have had evidence from the trade unions as well. What about the lead times? These new skills do not just come about overnight. You have to synchronise putting in place the qualifications, the capital bill programme to provide the training to link it to industry and the new business that they will be doing. Are you satisfied that you have got the lead times synchronised with the employment needs of people whose work will be in these new green jobs?

Kevin Brennan: We are working very hard to try and reduce those lean times as well, Chairman. I think it is generally accepted it has taken too long in the past to develop new apprenticeship frameworks and new qualifications. We are putting together a new qualifications framework that will bring greater coherence and greater unitisation of qualifications to make them more useful to employers. As I said earlier, for example, in the renewable energy area there will be a new apprenticeship framework in place by September of next year, which is a much quicker lead in time perhaps than we have seen in the past.

Q414 Joan Walley: What about where there will be jobs created, perhaps as a result of Government funding, where it is for a set period of time? There is a huge increase in the number of people who will need to be taken on to do a certain job, say, to retrofit homes but, once that is finished, that work will not be there, and, therefore, those people who have been employed will not be in work in that way. What has been done to look at the long-term skill set of people to be able to adjust, if you like, to times of great change in terms of adaptation to different work needs?

Kevin Brennan: Clearly, from time to time there are going to be Government programmes, some of which will be around the need to make a structural change. I think back to when I was growing up, the Natural Gas change-over programme happened, which would be a programme of this kind, but also programmes that are designed—which is the

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Government's first priority—to get us back into economic growth and to get the economy moving again. Clearly the purpose of some of the programmes the Government are running is to make sure we are stimulating the economy and providing employment now as a bridge to the future, for when we get greater economic growth and prosperity, when there should be more jobs in construction anyway because the economy is picking up. In the meantime, we are helping people become employed and providing the skills that will be useful to them in the future when the economy picks up.

Mr Kidney: I think it is a really good question, because it challenges what we say about our government activism. I suppose, one day, hopefully, we will retro-fit all 24 million houses in this country. Although, obviously, we will be building new ones zero carbon by then, too, and commercial buildings zero carbon by then. Equally, we are going to fit smart meters into every home and business over a decade. So they will come to an end, and the importance of our activism is that we will be seeing this coming. We will be able to survey the market to see where those skills will be needed next and what changes to the skill sets will be needed to be able to move from one programme to another and to put in place the new training to link those changes in needs in good time. Those kinds of programmes will be a good test that the activism that we are talking about now works.

Joan Walley: I hope that message gets out.

Q415 Mr Chaytor: I have two questions, one to David. Which business sectors and industries do you think are most recalcitrant in their attitudes to the low carbon transition?

Mr Kidney: I do not think recalcitrant is a good word. I think where there is a preponderance of small and medium-sized businesses, where they are busy with their day job, it is actually sometimes quite difficult to engage with them and that is quite a challenge for us. The new Skills Strategy, hopefully, is going to be the start of a better relationship with them. I think it started to unlock with Train to Gain, which has proved to be so flexible and successful with employers and we want to continue that so that we can get to these long tails. For example, Jo asked about retro-fit. We have got quite a lot of small businesses in the insulation sector. They are small businesses and they are very busy at their work and maybe skills has not had the priority in their businesses that I would like, and so we would like to engage more closely with them. However, I recognise that it is difficult for them to give us the time to engage with them and for us to identify them and get to meet them, but we want to.

Q416 Mr Chaytor: But there are some sectors that are absolutely locked into a fossil fuel economy.

Mr Kidney: I see.

Q417 Mr Chaytor: Almost by definition they are going to be the least co-operative about making this change. I am just curious as to how the Department for Energy and Climate Change is dealing with these

sectors and trying to enthuse them and encourage them to believe that there is something for them in this as well.

Mr Kidney: If we move over to, say, oil and gas as an example of what you are talking about, clearly oil is going to be with us for a little while yet, but the expertise that we have developed in this country off-shore getting in the oil and gas is great for carbon capture and storage in the future. So, again, with some help, there should be transferable skills there with a long-term future for their skills and their jobs in a slightly different sector. Again, I would not call it recalcitrant. They do have a day job, a venture, in that the lights are on today and tomorrow in this country and, therefore, we still need that oil and we still need that gas, but I think they are up for the discussion that we are having with them. In fact, there was a debate in Westminster Hall last week when I was pressed by several MPs about getting on with carbon capture and storage under the North Sea. So I think the industry is up for those kinds of discussions.

Q418 Mr Chaytor: Finally, a question to Kevin on apprenticeships. In terms of the development of skills at a technical level, apprenticeships are key to this. The Government has had some significant success in influencing the number of apprenticeships and increasing the completion of apprenticeships, but is there more to be done and are you looking at ways of making apprenticeships more flexible and more transferable in order really to develop them as a vehicle for low carbon skills?

Kevin Brennan: Yes. I think a lot has been done. As you quite rightly point out, the number of apprenticeships has increased threefold, I think, since 1997—more than threefold. The concept of the apprenticeship was almost, I think, withering on the vine at that time and was in danger of dying out altogether. I think we have rescued it and brought it back in. I was at Number 10 Downing Street last night at a TUC-organised event with apprenticeships, and it is very inspiring to see the kind of transformational effect it can have on people having that kind of job-based quality training that leads to a real skill. We know from the evidence how much better the employment and earning prospects are and the quality of skills that we get through delivering apprenticeships. So we want to carry on developing that. We want to make sure that we can get many more apprenticeships through procurement, using Government procurement to get another 20,000 apprentices over the next few years. The Prime Minister earlier this year announced additional funding for 35,000 extra apprentices across the economy with 21,000 of those to be created in the public sector; that is a significant challenge but we have to meet up to it. As David mentioned earlier, we both sit, I Chair, and David is on the Apprentices Champions Group that is working across Government and with Government suppliers, and so on, to make sure that we drive through that delivery of more apprentices. But I think we also need to look at the more technical and stem-based subjects and Level III apprentices as well

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and see if we cannot, in our National Skills Strategy, do something about taking it on to the next stage in terms of that level of apprentices and also developing a pathway through into higher education, where that is appropriate, as well.

Q419 Mr Chaytor: On this particular point, will this be a theme in the strategy that you are about to publish before Christmas?

Kevin Brennan: I cannot tell you that. I think you can assume that apprentices are very central to government policy around skills and, yes, we need to increase numbers, we need to raise quality and we need to make sure that they are flexible enough to meet the needs of individuals in the economy.

Q420 Joan Walley: I think we have come to the end of the session. We started out by talking about the step-change that was needed. Given what you have just said about new apprenticeships, et cetera, do you think, in the light of the 10:10 Campaign and Copenhagen in a couple of weeks time, that the message about the step-change and all that is being done is actually getting out there?

Kevin Brennan: Yes, I do. I think that Government have actually quite a strong story to tell about what they have done in the last 12 months or so around this area. There has been a step-change in the Government's approach to this, both in terms of awareness across Government, in terms of it becoming an integral part of our industrial and skills

strategy and also in terms of practical investment—resource investment—in this area at a time when we know that fiscal constraints are very tight. Copenhagen, I think, serves as an additional impetus for us to take it on to the next stage.

Q421 Joan Walley: Last word, Mr Kidney.

Mr Kidney: My experiences say, yes, the country is aware of the need and is up for it. I went to talk to learning reps of trade unions in the south-west and they were absolutely up for it. I went to talk to a conference of the CBI last week and they are up for it. I mentioned that visit to Haringey which was all about going house-to-house, street by street, retrofitting properties—

Kevin Brennan: Did you do that yourself?

Mr Kidney:—to make them more energy efficient, and the local community there, as well as the local council were absolutely up for it. So I think the message has got home. We have got a brilliant transition plan to lead the way; we have got the carbon budgets to make us go in the right direction. David reminded us about the responsibility of individual Government Departments with those responsibilities for budgets starting from next year, and I think everybody understands the scale of the challenge and I think most people are up for the challenge.

Q422 Joan Walley: Okay. Before I end this session can I thank you both very much?

Mr Kidney: Thank you.

Supplementary memorandum from Department for Business, Innovation and Skills and the Department of Energy and Climate Change

Further to the appearance of Kevin Brennan (BIS) and David Kidney (DECC) before the Environmental Audit Committee on 3 November 2009, this memorandum provides supplementary information in response to follow-up questions from the Committee together with additional information as agreed by the ministers.

RESPONSE TO THE FOLLOW-UP QUESTIONS FOR MINISTERS

1. *Reducing emissions is not seen as a strategic priority for many organisations, and many businesses and public sector organisations do not yet understand how they need to change. What skills are needed at a board level to help ensure a smooth transition to a low carbon economy? What can Government do to develop these skills and greener thinking at board level?*

Embedding low carbon and resource efficiency as a strategic priority for businesses and other organisations is one of the key challenges in delivering a low carbon economy.

Most organisations acknowledge that climate change will have some impact on their activities. However, the extent and scope of this is often not fully understood or quantified.

The actions that organisations need to take to reduce their emissions include:

- First, reducing resource/energy costs and environmental impacts of the organisation and working with supply chains to reduce overall emissions through improved resource efficiency—for example by auditing waste, energy use and other sources of emissions to establish a baseline, and implementing an action plan to improve efficiency and reduce costs.
- Second, embedding low carbon as a strategic priority across the organisation—for example by working with supply chains to reduce overall emissions, and reviewing business activity and long-term strategy to embed the development of low carbon products and services in long-term business models.

The government is taking a number of steps to stimulate development of appropriate skills, and prioritisation of low carbon as a strategic issue for organisations. The UK Low Carbon Transition Plan sets out the UK's long-term policy framework to enable the transition to a low carbon economy. This provides

the clarity organisations need to embed carbon reduction in their business strategy. The Transition Plan was supported by the Low Carbon Industrial Strategy, which sets out in detail how the UK will make the transition to a low carbon future, and how the barriers to UK businesses taking action on climate change will be addressed.

The Transition Plan sets out a number of policies specifically designed to help businesses embed low carbon as a strategic issue, and to incentivise energy and resource efficiency. In particular, the CRC Energy Efficiency scheme, which enters into force in 2010, will stimulate improved energy efficiency in large business and public sector organisations which are responsible for around 10% of UK emissions. Improved energy efficiency will contribute to our carbon objectives, and ensure our security of supply and also help our economy.

The Government funds the Carbon Trust to provide a range of support to help businesses understand the opportunities and risks of climate change, and to embed low carbon as a strategic priority.

The Carbon Trust's activities are a key element of the range of existing resources to help businesses address their resource efficiency, including:

- support available through the government's Solutions for Business portfolio of publicly-funded business support, including that provided by the Carbon Trust and WRAP; and
- support and tools provided by external organisations such as the Prince's Mayday Network, convened by Business in the Community and the Carbon Disclosure Project (CDP) Supply Chain which works with 45 global corporations to help them engage with their suppliers on climate change issues.

Furthermore, as part of implementing the Low Carbon Industrial Strategy, the Government, working alongside Tomorrow's Company and other businesses, has set out action that company boards need to take. "Can You Afford Not To?" (Tomorrow's Company, in partnership with HMG, 4 November 2009) is the business case for action on low carbon and wider resource efficiency. It reflects on evidence from consultations with leading edge employers that resource efficiency language can be more resonant at Board level, and can be an important step on a longer and more difficult low carbon journey.

To reinforce this message, Lord Mandelson, Hilary Benn and Ed Miliband have also written to the CEOs of several leading companies asking them to work with their supply chains to reduce emissions.

Recent OECD work on sustainable manufacturing and eco-innovation emphasises the importance of generic skills in the promotion of sustainable development at senior business levels, as well as the technical skills required for "end of pipe" technological solutions. We are currently reviewing the initial sustainable manufacturing toolkit with technical experts and will be looking to use the toolkit to support businesses in measuring their environmental impact and identifying areas where they can reduce this in the most efficient and cost-effective way.

2. Finding money to pay for new training is difficult. When investing in training and apprentices employers are taking on a certain level of risk. What are you doing to reduce this risk?

The Government recognises that some businesses are facing difficult times. Through Train to Gain, in England employers can get advice about how to best use training to increase the productivity of their business. In many cases the Government carries the full financial cost of training for Skills for Life and Level 2 training, and contributes towards other training such as courses at level 3 or on leadership and management. Government meets the full cost of training for apprentices aged 16–18 and we make a significant contribution to the cost of adult Apprenticeships. We expect Apprenticeships funding in England to reach £1 billion this year up by almost a quarter since 2007–08.

Investment in training is particularly a risk for SMEs which is why on 21 October we announced funds of £7 million to support new Group Training models of Apprenticeship delivery which will focus investment that has the potential to deliver up to 15,000 new places within the next three years. SMEs will benefit from these new models of employing and training apprentices by pooling the cost and providing employers with more flexible ways of using apprentices within their workforce.

Part of the mitigation of this risk is to ensure that training offered is high quality, up-to-date and is designed to meet a specific employer's needs. This is the rationale for employer-led National Skills Academies (NSAs), which work with networks of specialist training providers to meet the skills needs in their sector. NSAs assure the best training providers in their sectors, using quality criteria such as the Training Quality Standard. To achieve the standard, a training provider must demonstrate the responsiveness of their skills solutions, as well as their impact on the business bottom line.

3. *What funding has been provided or allocated by Government to develop skills in the nuclear energy industry over the past year and in forthcoming years?*

In 2009–10 LSC has provided NSA for Nuclear with £504,431 revenue funding, with a balance funding of £834,442 to be paid over 2009–10 and 2010–11.

In 2009–10, LSC has also provided NSA for Nuclear with £855,137 for capital funding for the Enerigus Centre in Cumbria, with a balance of £285,930 to be paid over 2009–10 and 2010–11.

In addition, the NSA has submitted further applications to LSC for capital funding for the South West Energy Skills Centre (£2.25 million) and Springfields Training, in Preston, (£110,000), which were approved on 2 November. These are now at contracting stage.

The Department for Business, Innovation and Skills and the Department for Energy and Climate Change both contributed £5,000 in 2009–10 to Cogent, the Sector Skills Council for the nuclear sector, as a contribution towards the “Renaissance Nuclear Skills” research project on skills for the nuclear new build, due for publication shortly.

Detailed LSC expenditure on Train to Gain for the Nuclear Sector is not available, although LSC funding for Train to Gain provision within the “footprint” of Cogent, the Sector Skills Council for Chemicals, Nuclear and Oil and Gas industries was £4.14 million in 2007–08, the latest full year for which data is available. This is a significant increase on the year before.

Sector compacts have been agreed between BIS, the LSC and the Sector Skills Councils, drawing down Train to Gain funding. The compact with Cogent, which includes the Nuclear sector, was agreed in October 2008 for a total value of £50m over three years. However, we will be reviewing the content and delivery of existing compacts to ensure synergy with the National Skills Strategy, Skills for Growth.

The Nuclear Decommissioning Authority also has a budget of 43.5 million between 2006–2011 to fund its skills and capability plan.

In addition, some of the Regional Development Agencies are providing funding to support programmes to develop skills in the nuclear energy industry in their respective region.

3. *What funding has been provided by the Government to develop skills in the renewable energy industry over the same period?*

Exact levels of funding for renewable energy skills are difficult to quantify. While there are courses in further and higher education aimed at renewable energy, there is a lack of robust information to tell us how many trainees subsequently go into renewable energy jobs, nor how many who study more general subjects, such as mechanical engineering, also enter the renewables sector. Moreover, most energy companies do not differentiate their training, using common programmes for renewable and conventional energy. Training funded directly by the Devolved Administrations is difficult to quantify for similar reasons.

We are taking action to address this issue. Over the next 12 months, DECC will provide £150k in funding to enable the Sector Skills Council, Energy and Utility Skills to lead a groups of SSCs in a UK-wide review of skills and training provision for renewable energy, including occupational standards, qualifications and accredited training. This will form the foundation on which a skills strategy can be developed and implemented much more quickly than if left to market forces. It will also provide a baseline on which we can develop metrics for funding, trainee numbers and destinations.

The British Wind Energy Association has an employer-led skills strategy group, which has already made important steps in developing apprentice frameworks. The first trainees are expected to start in September 2010.

We expect to launch the National Skills Academy for Power in the new year. Subject to approval of its business plan, this will receive in the region of £4.8 to £5.8 million of public funding over its first three years (match funded by employers). Many of the people trained under the Academy will be working to support the deployment of renewable energy.

In England, Train to Gain funding can be used to support apprentice training and conversion training for those with transferrable skills up to Level 3. However, we believe that expenditure to date on renewable energy has been relatively modest, reflecting a low demand from employers.

4. *What discussions has the Cabinet Sub-Committee on Environment and Energy (ED EE) had on the “green jobs” issue?*

Information relating to the proceedings of Cabinet Committees, including when and how often they meet, is generally not disclosed as to do so could harm the frankness and candour of internal discussion.

5. *Which organisations have been consulted with in developing the “green skills” aspects of the new UK Skills Strategy?*

Over the last 18 months BIS has consulted widely with stakeholders in this sector in order to develop the Department’s work on low carbon. The outcomes from these events have contributed to the Low Carbon Industrial Strategy and to Skills for Growth.

CONSULTATION EVENTS ON SKILLS:

- LSC Stakeholder Reference Group consultations 2008 and 2009;
- Windsor consultations 2008 and 2009;
- SoS Summit—Strategic Advisory Group 2009; and
- SoS Low Carbon Economy launch 2009.

ATTENDING ORGANISATIONS (CONSULTATION EVENTS)

- 32 Businesses;
- 12 Universities, FE Colleges and other educational bodies;
- six Trade Unions;
- 10 Sector Skills Councils (SSCs) and Industrial training Boards (ITBs);
- five Government Departments; and
- nine Voluntary, Trade, Expert and other bodies.

A full list of organisations and attendees is available if required.

6. *How have the Renewable Energy Skills group contributed to the new skills strategy?*

Officials have been keeping in touch with the work of this group with interest, attending meetings and providing strategic advice about linking its work to wider low carbon skills developments, including the Low Carbon Economic Areas and Energy Efficiency work being taken forward by other stakeholders. BIS is strongly supportive of this work which brings eight sector bodies together on a voluntary basis, under the leadership of Energy and Utility Skills, to coordinate a number of related work strands. DECC is funding a review of occupational standards, qualifications and accredited training to identify the gaps in provision and set the foundation for developing training pathways for individuals and employers. The National Skills Strategy: Skills for Growth; refers to the work of the Renewable Energy Skills Group as a case study example of good practice. Going forward it is hoped that this sector body ‘cluster’ will become the focal point for monitoring all related renewable energy skills projects, including those being taken forward at a regional level.

ADDITIONAL INFORMATION AS AGREED AT THE EVIDENCE SESSION ON 3 NOVEMBER:

A. *Does the Green Ministers network still exist?*

Key departments across Whitehall have a Minister with responsibility for Sustainable Development and/or Climate Change.

B. *What is the closing date for applications to CESP?*

CESP is a three year programme from 1 September 2009 to December 2012. There is no formal application process and projects can be developed and delivered across the whole period. Energy companies and local authorities (LAs) will deliver CESP by developing partnerships to benefit local communities in designated areas across GB. Early signs are that some LAs are approaching energy companies with proposals for CESP projects in their respective areas, while some energy companies are drawing on existing relationships they already have with LA partners.

24 November 2009

Supplementary memorandum submitted by the Department of Environment, Food and Rural Affairs

The following note was submitted by the Parliamentary Under-Secretary of State at the Department of Energy and Climate Change, Mr David Kidney MP, in clarification of his evidence to the Committee on 3 November 2009. It relates to Q 363 from Mr David Chaytor MP.

“As set out in the Nuclear White Paper, the Government believes it is in the public interest that new nuclear power stations should have a role to play in the UK’s future energy mix, alongside other low carbon sources; and that the Government should take active steps to facilitate investment in new nuclear power stations. We have been clear that it will be for energy companies to fund, develop and build new nuclear power stations in the UK.

The Government is taking active steps to establish and cement the right policy framework and create the right conditions in the UK for investment in new nuclear power stations. The Office for Nuclear Development is acting to enable investment in the UK from the earliest possible date.

The Government has set neither a target nor a cap on the amount of nuclear power that could come forward. Instead, the approach has been to remove the barriers to investment in new nuclear power, and allow energy companies to come forward with projects if they consider it in their interests to do so. The action taken by Government so far has resulted in real interest in new nuclear in the UK, with energy companies announcing plans to build up to 16 GW of new nuclear capacity.

The programme of facilitative actions set out in the White Paper should, subject to regulatory approvals, enable companies to begin operation of new nuclear power stations between 2017 and 2020.”

17 November 2009

Written evidence

Memorandum submitted by The British Association for Shooting and Conservation (BASC)

1. EXECUTIVE SUMMARY

1.1 The UK Government is committed to halting or reversing the declines in biodiversity by 2010. This target is unlikely to be met.

1.2 It is now recognised that the biological effects of climate change are real, and that if wildlife is to adapt to a changing climate it requires landscape scale conservation projects, to provide the necessary habitat connectivity.

1.3 BASC has demonstrated through its Green Shoots programme that people who shoot manage their land in a way that is beneficial for wildlife, and that shooting takes place over large areas of the countryside.

1.4 People who shoot are willing to invest time and resources into the management of their land, but they require guidance on how to manage for species and habitats of conservation concern.

1.5 Government support for Green Shoots is needed to increase biodiversity and facilitate landscape scale conservation.

2. This report is written by BASC Director of Conservation, Tim Russell who has 30 years of experience in environmental and land management issues.

3. BASC is the largest representative organisation for shooting in the UK with 130,000 members. Our prime interests are to safeguard shooting sports and to maximise shooting's value for nature conservation. Managing land for game, waterfowl, deer and wildlife, means that those who practice shooting sports in the UK are one of the largest forces for protecting habitat and the wildlife it supports.

3.1 With over two thirds of the rural land area shot over, and shooters spending over £250 million on conservation each year, those who practise shooting sports are key partners for biodiversity conservation. In July 2000 BASC launched *Green Shoots—The Contribution of Shooting to Biodiversity in the UK* in the Palace of Westminster to show how BASC responded to the challenge of the CBD and the UK BAP. It aimed “to recognise, build upon and co-ordinate the shooting community’s considerable contribution to wildlife and biodiversity conservation.”

4. THE GREEN SHOOTS PROGRAMME AND HOW IT WORKS

4.1 BASC supports many Local Biodiversity Action Plans (LBAPs) through consultation and partnerships. BASC are now recognised as a stakeholder group that can make a significant contribution to biodiversity.

4.2 LBAPs can gain access to nature reserves, public places and school grounds easily; however, access to privately held land, where the bulk of biodiversity is found, is a greater challenge. The shooting community can provide that access. Shooters will also carry out extensive conservation work to improve their land.

4.3 BASC agrees a list of biodiversity habitats and species with LBAP groups, and then asks members to complete a postal survey, identifying where they shoot, and which of the key habitats and species are found on their land.

4.4 BASC seeks funding to employ a dedicated Project Officer to work with our members and LBAPs to increase habitats and species identified in the survey.

4.5 All increases in biodiversity are recorded on the Biodiversity Action Recording System (BARS), the Government approved method of recording biodiversity gain.

5. ACHIEVEMENTS

5.1 The Cheshire Biodiversity Project was the first local initiative to integrate shooting's conservation value with a Local BAP. The project is based on a strong partnership with the Cheshire region Biodiversity Partnership which is responsible for Cheshire's highly successful Local BAP, called the Countdown Programme.

5.1.1 Key results:

- Over 690 sq km of land was surveyed by our members for priority biodiversity species (15) and habitats (23). This is equivalent to 28% of Cheshire.
- We created a database of our members who have this access to privately held land.
- We generated more than 7,700 new biological records which the majority of BASC members (79%) allowed us to share with our partners, making more than 6,600 available through record (the Cheshire Biological Record Centre).

5.2 The importance of the records cannot be overstated; it allowed us to significantly increase the data held by record on key biodiversity species and habitats such as reedbeds, heathland, dormice, brown hare, skylark and great crested newts. In many cases the data provided through BASC more than doubled or even tripled the number of sites known to have certain key species and habitats. This is typical of the data collected in subsequent Green Shoots local projects.

6. The Somerset Levels Project is the second local biodiversity project resulting from the Green Shoots initiative. The then English Nature Team covering the Somerset Levels read Green Shoots and approached BASC to see if a joint project was possible on the Levels. In 2002 a full-time project officer was appointed working for BASC, directed by a steering group consisting of BASC and English Nature, with the Environment Agency joining in 2005. English Nature was succeeded by Natural England in 2006.

7. Following the success of Green Shoots in Cheshire and Somerset, FWAG Cymru approached BASC to see if a similar local project could be run across North Wales. Discussions soon included the Countryside Council for Wales who were very supportive, then the Local BAPs across North Wales and, latterly, the Environment Agency. Green Shoots in North Wales was launched in September 2004 by Carwyn Jones, Environment Minister for the Welsh Assembly Government.

7.1 BASC has also completed biodiversity surveys in Dorset and Northern Ireland.

7.2 Full details of all these projects are available in the accompanying booklet *Green Shoots 2009* included with this submission.¹

8. RECOMMENDATIONS FOR ACTION

8.1 Halting biodiversity loss is high on the list of priorities for society and government.

8.2 The BASC Green Shoots programme has demonstrated how, with the right guidance, people who shoot can be directed to make lasting benefits for wildlife and society as a whole.

8.3 Shooting takes place at the landscape scale and therefore provides wildlife with the flexibility it needs to adapt to a changing climate

8.4 Landscape scale conservation projects support ecosystem services such as carbon sequestration, reducing flood risk and providing food, clean air, water and raw materials.

8.5 Government should provide direct support to the Green Shoots programme because of the clear benefits it provides.

8.6 Government should provide direct support for training to provide conservationists with the skills needed to manage diverse and complex habitats. This includes training gamekeepers, shoot managers and deer managers.

8.7 Government should provide direct support to produce educational materials for schools, which can be delivered through the National Curriculum, to highlight the conservation benefit game management brings to the rural landscape and economy.

May 2009

Memorandum submitted by Rockwool Ltd

SUMMARY

- Rockwool Ltd is the UK's leading manufacturer of stonewool insulation for thermal, fire and acoustic protection.
- Maximising energy efficiency in new and existing homes must be a design and construction priority in order for the Government to meet its long-term emissions reduction targets.
- The Government must ensure that the regulatory framework is in place to encourage energy efficient design and construction, and that government schemes and building regulations are appropriately resourced and enforced.
- Investment in training for the fitting and maintenance of energy efficiency measures such as insulation could improve the efficacy of such measures and create green jobs.
- The construction and demolition industry creates more waste than any other sector. Future challenges, such as the disposal of the legacy of building foams that contain ozone-depleting substances, have yet to be addressed.
- Green jobs can be created, and the environmental impact reduced through investment in research, facilities and training in the demolition and waste sector.

¹ Not printed. See www.basc.org.uk

1. INTRODUCTION TO ROCKWOOL

1.1 Rockwool welcomes the opportunity to respond to the Environmental Audit Committee inquiry into “green jobs”, to look into how the UK can maximise the environmentally positive opportunities arising from changes in public spending intended to help tackle the recession. Our response centres on the construction and construction products industry of which we are a part.

1.2 Rockwool Ltd is the UK’s leading manufacturer of stonewool insulation for thermal, fire and acoustic protection. The parent company, Rockwool International A/S, has its headquarters near Copenhagen in Denmark and 35 operating companies throughout Europe and North America.

1.3 Rockwool insulation products are made primarily from volcanic rock and are used in a diverse range of industrial, commercial and residential settings.

1.4 Rockwool makes every effort to ensure that they manufacture their products in a way that is sustainable and environmentally friendly. For example:

- 1.4.1 The Rockwool production process uses large quantities of by-products from the steel-making industry that would otherwise be landfill. Currently, between 20% and 30% of the total furnace charge is made up of steel slag.
- 1.4.2 Off-cuts from cutting and shaping Rockwool products during production are recycled directly back into the manufacturing process. Currently, this accounts for approximately 10% by weight of the finished product.
- 1.4.3 Rockwool Ltd & industry partners are increasingly involved in WRAP approved schemes to recycle waste Rockwool material that may be generated during installation, conversion or end-of-life disposal.

2. ENERGY EFFICIENCY

2.1 Rockwool believes that energy efficiency is essential as part of a green economy in order to reduce the use of fossil fuels and to reduce carbon emissions. Buildings hold the largest potential for energy savings as most of the energy in buildings is used for heating and cooling. Effective use of insulation has huge potential to improve the energy efficiency of the UK building stock.

3. NEW BUILDINGS

3.1 It is currently possible to build new houses that consume 70% less energy for heating than Europe’s strictest building regulations require. It is important that the Government continues to support and challenge architects, designers and construction professionals to ensure energy efficient design of new buildings.

3.2 Encouraging energy efficiency can be partly achieved through existing and upcoming initiatives including the planned revision of Part L of the Building Regulations, the Heat and Energy Saving Strategy and the Zero Carbon Homes policy. It should be carefully considered what jobs and skills are required to implement these—for example what training is required for building control bodies to ensure that building regulations are enforced. The Government could also work with professional accreditation bodies to ensure increased emphasis on energy efficiency in the education of professionals. Arguably, one of the least effective aspects of Building Regulations relates to compliance, feedback and the consequences of non-compliance. Changes are therefore needed to Building Regulations to introduce clear processes for monitoring and reporting; supported by sufficient independent inspection resources. The consequences of non-compliance and their associated enforcement also need to be formulated. These procedures are needed equally for new-build activities and those undertaken to upgrade the energy efficiency of existing buildings. It is particularly important for upgrading schemes that the delivery of energy savings against agreed milestones must be monitored, recorded, reported and acted upon to target measures effectively. Clear processes for monitoring, reporting and remedial/corrective action are therefore needed.

4. RETROFITTING EXISTING BUILDING STOCK

4.1 The scale of the task of retrofitting the existing building stock to achieve its energy efficient potential is vast, as indicated by a recent joint report from the Economic and Social Research Council and Technology Strategy Board. The report estimates that “virtually all the 24 million existing buildings in the UK would need some attention to reduce their emissions by 40%. To complete the task in 40 years we would need to refurbish an entire city the size of Cambridge every month. If we assume that each intervention set would take a team of trained workers two weeks, we would need 23,000 teams of people to work at this rate non-stop for the next 500 months.”²

4.2 These figures show that a large number of green jobs would be created if the Government committed to realising the potential energy efficiency savings of all existing buildings through retrofitting of insulation and other measures.

² Economic and Social Research Council/Technology Strategy Board Seminar Series Mapping the Public Policy Landscape “How people use and misuse buildings” (April 2009).

4.3 In order that insulation performs as it is designed to do and provides the maximum possible thermal properties, it is important that those fitting insulation are properly trained. Rockwool is chairing a trade association (Eurisol) initiative to assess the need for improved industry guidance for the use and installation of insulation. This is an area in which green jobs can be created and environmental benefits of insulation improved through better training.

4.4 It is also imperative that the fitting and maintenance of insulation is monitored, which involves education of the building industry and the public and further training of individuals working within the Local Authority Building Control system.

4.5 Rockwool supports the Government's recent initiatives to improve the energy efficiency of the UK's existing housing stock; such as raising the targets for CERT and the creation of a new Community Energy Saving Programme (CESP). However we are strongly opposed to the proposed scoring/incentive systems for these schemes, which we believe to be overly complicated and open to "gaming". The nature of the proposed scoring significantly reduces the potential for these schemes to deliver the intended levels of energy/carbon savings and, as a consequence, may adversely affect the businesses that supply key energy efficiency products. Rockwool urges Government to ensure that the operation of schemes such as CERT, CESP and HESS are simple and understandable in order to reduce the opportunity for "gaming" and to focus targets and funding on specific measures; such as the upgrading of hard-to-treat buildings. Separate, ring-fenced funding should be provided for "hard" and "soft" measures to ensure that unproven, "soft" behavioural measures are not undertaken at the expense of robust "hard" measures, resulting in a relative reduction in savings from the schemes (eg building fabric improvements should receive separate funding from energy advice). Rockwool advocates the earliest possible move within all schemes to genuine "whole-house" measures for existing buildings. It is extremely important that energy-saving measures that are financially and practically viable when undertaken as part of a combined project (but may not be viable as separate, disruptive activities) are captured. For example, hard-to-treat measures such as solid wall insulation should be installed at the first (eg) "CERT" visit when the loft is insulated/topped-up or other energy-saving measures are installed, not second or third time around. Synergies with other energy-saving measures such as the installation of low carbon heating technologies are also applicable.

4.6 During previous EEC/CERT transitions, there has been considerable uncertainty which has led to reduced EEC/CERT activity, workers being laid off and the UK's skills base & manufacturing capacity being reduced. Such a situation between CERT and post-2012 schemes must be avoided by the implementation of early, clear commitments to post 2012 schemes and the implementation of smooth transitional arrangements between these schemes. Government needs to provide a binding commitment to undertake an ambitious energy-efficiency programme of works with clear milestones at least up to 2020 and perhaps up to 2050; driven by several £billions per year of funding. For example, "whole-house" packages of improvements for 1.8 million households a year—represents spending of £18 to 72 billion per annum (assuming between £10,000 and 40,000 per upgrade). Development of innovative funding schemes is therefore needed—for example energy suppliers could be encouraged to provide funding for energy improvements in the form of "energy mortgages" linked to the properties upgraded, not the building owners.

5. CONSTRUCTION WASTE

5.1 The Department for Environment, Food and Rural Affairs (DEFRA) recognises that the construction, demolition & excavation (CD&E) sector generates more waste in England than any other sector, and is the largest generator of hazardous waste—with around 1.7 million tonnes of hazardous waste generated each year.³

5.2 Rockwool Ltd has made a conscious choice to invest significantly in recycling facilities in order to reduce the burden on landfill sites and to help minimise the depletion of resources. Three quarters of the Group's stonewool waste is currently recycled, and Rockwool Ltd & industry partners are increasingly involved in WRAP approved schemes to recycle waste Rockwool product material that may be generated during installation, conversion or end-of-life disposal.

5.3 There is great potential for green jobs to be created by developing skills and expertise on the recycling or appropriate disposal of construction and demolition waste.

5.4 The European Waste Catalogue lists a number of products frequently found in construction waste that should be considered to be hazardous waste and disposed of as such. Hazardous waste from construction and building demolition includes waste such as foam propellants (as used in pre-2004 foam insulation), solvents, tar, and asbestos.⁴

5.5 The use of ozone-depleting substances in building insulation foams has been banned in the EU since the beginning of 2004. However, the significance of plastic foam insulation entering the waste stream is expected to increase significantly in the medium to longer term as more buildings containing these panels are redeveloped. The Government has made a rough approximation that one million tonnes of buildings foam exists in buildings in the UK, and suggests that around 100,000 tonnes of ozone-depleting substances

³ Defra Recycling and Waste: Construction Waste (Feb 2009) Figures from Waste Strategy for England (2007)

<http://www.defra.gov.uk/environment/waste/topics/construction/index.htm>

<http://www.defra.gov.uk/ENVIRONMENT/waste/strategy/strategy07/pdf/waste07-strategy.pdf>

⁴ European Waste Catalogue, http://www.environment-agency.gov.uk/static/documents/EWC_31-03-09_CH.pdf

might be contained within these.⁵ Furthermore, this bank of HCFCs contain global warming potential which equates to 240 million tonnes of carbon dioxide. This is equal to almost two-thirds of all the carbon dioxide emissions from the whole of the UK in 2007.

5.6 It is clear that the potential environmental impact of building insulation foams entering the waste stream is substantial, if they are not disposed of properly. Developing skills and expertise in the demolition and waste disposal industry to dispose of building foams and other hazardous waste appropriately should be seen as an opportunity for the creation of green jobs. There is also the opportunity to establish a skills and knowledge base which can be exported to other countries who face this foam-legacy issue.

6. TAX INCENTIVES

6.1 Rockwool would encourage the Government to consider tax incentives, which include the following:

- 6.1.1 Lower council tax bands for buildings that achieve specified levels of improvement against the existing Energy Performance Certificate (EPC) rating.
- 6.1.2 Lower council tax bands for buildings achieve one of the top EPC ratings.
- 6.1.3 Rates of Stamp Duty, which vary depending upon the EPC rating.
- 6.1.4 Income tax relief on qualifying energy improvement works (again such incentives could be linked to improvements in existing EPC ratings).

7. GOVERNMENT TO ACT IN AN EXEMPLAR ROLE

7.1 It is Rockwool's view that the Government must do much more to lead by example. Public buildings owned and rented by the government account for a very significant proportion of the UK's total buildings. A determined and visible programme to ensure that all public sector buildings (rented and owned) are quickly brought up to the highest energy efficiency standards is required.

May 2009

Memorandum submitted by Groundwork UK

SUMMARY

The green fiscal stimulus package is a much-needed investment in helping the UK to navigate its way through a deep recession. Whilst it creates some opportunities to develop the green economy more could be done to restructure the economic base to nurture genuinely sustainable local economic development. This approach aims to achieve a sustainable economy by creating rewarding work for those who need it most, contributing to well-being and social justice.

The UK government has committed itself to radical carbon reduction targets. It is also on a path that says work and economic development are the keys to helping the poorest areas of our country break out of a cycle of social and environmental decline. We have a window of opportunity to connect these two drivers by embarking on an ambitious programme of enterprise development and job creation along genuinely sustainable lines.

Much of the debate around green skills so far has centred on jobs in the "high tech" green industries. We believe that there is significant demand for low to medium skill green jobs which would both benefit the environment and tackle unemployment and worklessness—particularly in deprived communities. Groundwork currently operates programmes which train and prepare participants for these kind of green jobs—contributing to tackling climate change and workless targets in local areas.

We need a significant programme of vocational education, skills training and enterprise development focused on disadvantaged communities and the industry sectors that will be needed if the UK is to develop a low carbon economy: household recycling, community composting, loft insulation, land management, local food production, local energy generation. The recently announced Future Jobs Fund may go some way to achieving this. It is nonetheless important that all aspects of public investment seek to maximise the development of a truly green economy.

1. Introduction

Groundwork is one of the country's leading providers of environmentally-focused employment schemes. We tackle worklessness in deprived areas by helping people develop their confidence, skills and experience in order to find work and to contribute to the regeneration of their own neighbourhoods. Our programmes are focused on those people who find it hardest to get work such as those with low levels of skills, people claiming incapacity benefit or ex-offenders. Many Groundwork Trusts run programmes that pay local unemployed people a wage while they work on a wide range of activities—from renovating run-down houses

⁵ *Hansard* 25 Jun 2008 : Column 304W.

to running recycling schemes—which also deliver environmental benefits and contribute to genuinely sustainable development. Increasingly these services are being developed into enterprises with the potential to support local economic development.

Over the past year, we have:

provided 59,000 weeks worth of training and helped people gain 8,000 formal qualifications;

created 2,900 jobs; and

helped 2,300 people progress back into education, training or employment or into formal voluntary work.

2. Whether the changes in public spending intended to help tackle the recession will maximise employment opportunities in environmental industries.

Groundwork welcomes the public spending commitments to boost Britain's low carbon sectors and lay foundations for green growth, supporting investment in energy and resource efficiency and low carbon energy generation by business, public sector and households over the next two years. For the employment opportunities to be maximized it will be vital that this spending is aligned with the Department for Work and Pension's proposals for employment provision and the future skills strategies produced by the Department for Innovation, Universities and Skills.

3. The economic and social benefits of planned green investments and the extent to which the changes in spending will contribute to sustainable development and environmental protection.

3.1 Recent research has shown that, overall, energy efficiency measures (for domestic and non-domestic markets) consistently delivered the best returns for investment, being capable of delivering timely boosts to the economy, generating opportunities in sectors with more slack, as well as lowering carbon emissions. In addition, they also enhance energy security and help tackle fuel poverty.⁶ It is important that support is provided to help people understand how to derive maximum benefits from the energy efficiency measures installed in their homes, and in Groundwork's experience this is most effectively delivered on a face-to-face basis.

Green Doctor

Groundwork Leicester & Leicestershire developed the Green Doctor project as an innovative way of tackling fuel poverty in deprived wards by offering free visits to low income households aimed at helping people improve energy and resource efficiency and save money.

Over three years, the Green Doctors conducted energy use audits of the properties they visited using the National Energy Rating assessment, and provided tailored advice to householders about their home energy use and environmental measures in the home.

3.2 The Community Energy Saving Programme (CESP) has the potential to significantly stimulate market demand for energy efficiency products and services among consumers. This is likely to generate a commensurate capacity requirement in the industry. The Future Jobs Fund could present an opportunity to simultaneously meet some of this demand, whilst also providing much needed skills training and employment opportunities for young people who are furthest removed from the labour market.

3.3 CESP also includes proposals for the creation of home energy advisors and community energy advisors. For these people, and these roles, to be effective—in terms of achieving the required behaviour change to maximise the energy efficiency and carbon saving benefits—community development skills are as important as the technical knowledge. This proposal highlights the importance of ensuring that all relevant public spending seeks to maximise the development of the green economy.

The Greenhouse Initiative

Groundwork Creswell have created "the Greenhouse Initiative" which restores vacant property ensuring that the houses use a wide range of energy saving devices and renewable energy measures. The improvements, which include insulation, solar hot water and a rain harvesting system, far exceed current building regulations. They also tackle fuel poverty by lowering heating bills. The initiative not only ensures more sustainable homes, it also provides work for local people: the work to re-design and rebuild properties provides long term unemployed people with the skills and experience needed to re-enter the workplace.

⁶ A Bowen, et al "An Outline of the Case for a Green Stimulus": <http://www.lse.ac.uk/collections/granthamInstitute/publications/An%20outline%20of%20the%20case%20for%20a%20green%20stimulus.pdf> (viewed 7/5/09).

3.4 As the Stern Review on the Economics of Climate Change states: “Adaptation to climate change—that is, taking steps to build resilience and minimise costs—is essential. It is no longer possible to prevent the climate change that will take place over the next two to three decades, but it is still possible to protect our societies and economies from its impacts to some extent”.⁷

3.5 Urban areas are especially vulnerable to the impacts of climate change, not least because this is where people and property are located. They are more likely to experience hotter temperatures due to the “urban heat island effect”. Roads and buildings store more heat than vegetation, which provides evaporative cooling. Urban temperatures can therefore be several degrees warmer than rural areas. The hottest zones are those with the tallest buildings and the highest density of buildings without green spaces. Such microclimates may intensify the effect of climate change.

3.6 Impermeable built surfaces also convert rainfall to run off at a much faster rate, and in greater volumes than porous vegetated surfaces. This could be exacerbated by extreme rainfall events with climate change, leading to problems with flooding from overwhelmed drains. Creating new green infrastructure in urban areas not only creates a natural cooling effect, it also provides improved water management/flood alleviation and improved air qualities. Adaptation strategies not only offer multiple benefits, they also create new opportunities: in adapting to climate change we can also make our towns and cities more attractive with consequent economic benefits, create a better quality of life and promote biodiversity.

3.7 This need to adapt to the impacts of climate change, particularly through the creation of green infrastructure also creates opportunities for the creation of new green jobs and the development of green skills in areas such as land management and horticulture.

Green Team

Groundwork Hertfordshire’s “Green Team” is a 16-week voluntary training scheme for unemployed young people (aged 16-25). The teams receive training in outdoor environmental work such as landscaping, planting, tree maintenance, coppicing, path building and pond clearance and the course will give young people the skills they need to get a first job in the environmental, landscaping or construction industries. The training is designed to suit the needs of young people leaving school with no qualifications. Trainees are also supported to complete a national qualification—a City & Guilds in Land Based Studies.

Michael, one of the first volunteers on the Green Team explains the difference it made to him: “I volunteered with Groundwork as part of their Green Team and realised that landscaping was what I wanted to do. . . I felt included as part of a team and there was a real family atmosphere. The time I spent volunteering has definitely been a worthwhile experience and I’ve been offered a job since taking part. I’ve been taught everything I need to know about landscaping and have been given the chance to hone my skills.”

4. *The nature of the jobs that might be created in green industries as a result of the green fiscal stimulus.*

4.1 As has already been recognised (in, for example, the Houghton Review and the Future Jobs Fund) in the current economic climate it is vital that those who are already furthest removed from the labour market are not ignored and excluded from taking up new job opportunities—and thus being left to fall even further behind—because of a lack of skills and experience.

4.2 There is a risk that the green fiscal stimulus will focus job creation at the high-skills end of the labour market. Whilst this is to be welcomed, it is vital that it is not at the expense of the creation of much-needed jobs requiring a lower level of skills. This is not a case of job creation for its own sake; the need to create a truly low carbon economy and to adapt to the impacts of climate change (many of which are already “locked in”) will necessitate the creation of a wide range of jobs with a lower skills entry requirement, on a significant scale. It is therefore important that the green fiscal stimulus recognises and supports this need. The Heat and Energy Saving Strategy, for example, includes the ambition of ensuring seven million homes have had the opportunity of taking up a whole house package of measure to improve home energy efficiency by 2020.

4.3 Green industries cover a wide spectrum of employment, from renewable energy generation, to new low-carbon technologies, to the creation and maintenance of green infrastructure, and recycling. The Local Government Association has estimated that there is the potential to create around 20,000 new jobs in home energy efficiency, in addition to the jobs required to manage the risks associated with climate change.⁸

4.4 Groundwork already runs programmes which train people in “green skills”. We have identified the following areas as having significant potential for the creation of low skill green jobs:

- Energy Efficiency Advice for home owners and SMEs

Groundwork currently employs a small network of “Green Doctors”—local people trained to provide a full in-home MOT aimed at reducing domestic energy consumption, reducing fuel poverty and promoting positive environmental behaviour.

⁷ Stern Review: The Economics of Climate Change, summary of conclusions page 2: http://www.hm-treasury.gov.uk/d/Summary_of_Conclusions.pdf (viewed 14/5/09).

⁸ LGA “Creating green jobs: Developing local low-carbon economies” <http://www.lga.gov.uk/lga/aio/1509491> (viewed 7/5/09).

Green Doctors not only diagnose and advise but also deliver on-the-spot treatment, fitting a range of measures from top-up loft insulation to PowerDown devices, provided free to low-income households.

— Retrofitting our homes and public buildings

The UK faces enormous challenges if it is to deliver legally binding carbon reduction targets. One of the most significant is the need to retrofit millions of existing buildings, homes and urban landscapes to maximise their energy efficiency and other climate change mitigation and adaptation benefits.

Temporary jobs—or intermediate labour markets—have huge potential to help meet this challenge over the next few years.

Groundwork is currently running employment programmes that deliver a range of retrofitting activity such as:

- refurbishing void social housing properties to eco-home standard;
- installing smart meters in homes;
- installing sustainable urban drainage systems; and
- managing and improving green spaces to maximise climate change benefits.

— Greening our cities—mitigating and adapting our urban areas against the impact of climate change

There will be an increasing need and demand for us to find ways to protect urban areas against the impact of climate change—the need to “green” our cities. Much of this work will need landscaping and land-based jobs and therefore skills and job creation programmes will be needed that can meet this demand.

Land Apprentice Scheme—Groundwork Black Country

Groundwork has developed a Land Apprentice programme to enable local unemployed people to gain skills and experience within the environmental sector. Land Apprentice teams help deliver many projects under the guidance of experienced contracts manager and site supervisors.

The programme employs local people giving an employment track record on real projects and job-related training—as well as improving the image and environment of the Black Country.

May 2009

Memorandum from British Waterways

1. EXECUTIVE SUMMARY

- Waterways are local, adaptable and accessible.
- Waterways are becoming increasingly relevant as one of the means for tackling climate change.
- They form part of the nation’s green infrastructure that can be used for sustainable transport, particularly for walking and cycling but also to carry niche freight cargoes, and to help mitigate the impacts of climate change.
- Extending the walking and cycling network supports the construction industry creating local jobs and training opportunities, encourages modal shift from car to foot and cycle reducing CO₂ emissions and congestion, improves health and well being of local people and visitors and helps to transform neighbourhoods.
- Businesses can and do use their local waterway to heat and cool their premises and to move and supply grey water reducing CO₂ emissions.
- British Waterways is exploiting the potential of the waterways to generate clean electricity through small hydro and wind power.
- The majority of the benefits described will only be delivered through partnership with the public, private and third sectors.
- Potential private and public sector partners need encouragement to realise the benefits described, with investment required to improve the quality of the resource and help realise the Government’s vision for improving the quality of place—“World Class Places”.

2. ABOUT BRITISH WATERWAYS

2.1 British Waterways is a not-for-dividend public corporation which cares for a nationwide network of canals, rivers, docks and reservoirs. It is accountable to the Department of the Environment, Food & Rural Affairs in England and Wales and to the Scottish Government in Scotland and works with a broad range of public, private and voluntary sector partners to protect and find new uses for the nation's historic waterways.

2.2 Our priorities in England and Wales, agreed with Government in their Strategic Steer, are:

- maintaining the network in satisfactory order;
- achieving shared Government/company longer term vision of moving towards greater self sufficiency through the growth of commercial business and other funding sources; and
- delivering a range of additional public benefits that are not indivisible from maintaining the network.

2.3 The Government broadly favours the first as a priority, especially as this has a strong linkage with the delivery of many public policy priorities such as regeneration, sustainable landscapes and communities and public health, but recognises that a balance has to be struck with the other two, as all are clearly important.

2.4 The last decade has seen a widely acknowledged waterway “renaissance” with canals being reinvented as agents of rural and inner city regeneration whilst offering some of the greenest recreational facilities available in the U.K. Indeed as the world faces up to the challenge of climate change we are now starting to see the increasing potential of our waterways to alleviate flooding, provide refuge for threatened wildlife, provide alternative transport and, thanks to the latest technology, even generate clean electricity.

2.5 British Waterways continues to refine its management approach, and continues to look at ways of securing requisite levels of ongoing infrastructure investment: Not least because work commissioned by British Waterways from the accounting firm KPMG (British Waterways Status options review—June 2008) confirmed that an extra £30 million is needed every year to allow the network to reach a “steady state” of maintenance in which repairs are routine and the long-term decline of the network is prevented.

2.6 We believe the short-term improvement in the waterways' condition achieved to date is insufficient. The waterways still have great unfulfilled potential for delivering the diverse range of public benefits they are capable of generating. To unlock that potential requires a step change in both their resourcing and the extent to which that potential is, alongside their intrinsic worth, better recognised and valued by society at large.

2.7 During 2009 British Waterways will be holding a national debate with the public, stakeholders, staff and customers about the future of the country's waterways and their role in modern Britain.

2.8 The wider role of waterways will be emphasised in the forthcoming refresh of Government policy on inland waterways—Waterways for Tomorrow—which is due to be published in December 2009.

3. WATERWAYS AND ENVIRONMENTAL OPPORTUNITIES

3.1 British Waterways owns and manages 3,200km of waterways and towpaths and 92 reservoirs across the UK providing local and adaptable open space. 96% of our users are on the land not the water not least because our paths are flat, level, traffic free and close to where people live. Indeed half the population live within a short cycle ride, eight kilometres, of a waterway and a million people live within 100m of a waterway. The waterways' history means that they are also close to some of the harder to reach groups, 68% of the 10% most deprived areas in England include a waterway as do two thirds of the 50% most deprived districts.

3.2 Already each year the waterways welcome 11 million visitors making almost 300 million visits and spending nearly £1 billion with local businesses. The number of visits to waterways continues to grow year on year bucking the trend for decline elsewhere.

3.3 Opportunities for making the most of these key linear features of the landscape include, using them as a means of connecting communities with each other, connecting communities to the countryside, connecting communities to their cultural heritage, as transport and tourist routes in their own right or linking existing highways and byways, as ecological corridors facilitating the movement of flora and fauna or as a means of delivering safe and easy access to the outdoors locally, and using them to reduce energy consumption or generate renewable energy.

3.4 All of these rely heavily upon recognition of the potential by and delivery through partnerships.

3.5 Waterways can contribute to green jobs through conservation led construction retaining and developing skills, in encouraging various forms of sustainable transport and in the field of energy conservation and renewables. These areas are explored in more detail below.

3.6 The contribution waterways can make to citizenship, active participation and healthy lifestyles should not be underestimated. Volunteering is an area that has traditionally been important to this sector but it can also be used to develop practical and social skills helping people get back into work or to maintain contacts and health as they get older.

3.7 Investment in this green infrastructure also delivers long term benefits in terms of the quality of and sense of place it creates.

4. SUSTAINABLE TRANSPORT—TOWPATHS

4.1 The expansion of the UK's canal network in the eighteenth and early nineteenth centuries played a key role in the industrial revolution, providing much-needed connectivity between sites of industrial activity, urban areas and ports. While the waterways still accommodate 22 million tonne kilometres of freight every year, by offering attractive and safe routes away from motorised traffic they also contribute to carbon reduction by connecting schools and employment areas to homes, encouraging people to travel by foot or cycle rather than by car.

4.2 BW estimates that around 70–75 million visits are made by people each year to waterway towpaths for transport, as opposed to recreational, reasons.

4.3 We know from our pedestrian counters that towpath improvements significantly increase their use. As not all towpath users will be making trips to the canal for recreation, towpath improvements have a direct impact on local modes of transport.⁹ We also know that many car trips are short and around a third of car users would walk or cycle given safer alternatives.¹⁰

4.4 With over 1,000 km of the British Waterways' network classified as urban the potential is huge. We estimate that improving just 1km of urban path could reduce CO₂ emissions by around 100 tonnes a year. Improving the towpath, and access to it, would also have knock on benefits for health, well being and help to create the green infrastructure advocated in the government's World class Places Strategy.

4.5 In London recent rises in fuel prices and people's awareness of their carbon footprint have encouraged many commuters to get on their bikes and travel to work along the towpaths. Whilst the credit-crunch has forced budget conscious Londoner's to ditch their gym membership in favour of free to participate keep-fit activities, such as running and power walking. These factors have contributed to an increase in the number of people using their local waterway in the past five years, with over 34 million visits made to London's 100 miles of canals and rivers in 2007. We have been so successful that, in partnership with Transport for London, we are now employing London's first towpath ranger to help the many visitors to the capital's canals enjoy the waterways safely, and encourage users to think of each other as they travel.

4.6 Towpath reconstruction works are ideally suited to contribute to community participation, training and skills development. The works are also more labour intensive than many other construction projects which can be particularly important during times of recession as the construction industry feels the pinch. Such works help to retain skills, offer opportunities for training and provide the physical enhancement required to encourage investment when the recession ends.

4.7 An investment of £50 million would create at least 458 jobs, with not less than 88 suitable for trainees, save 41,000 tonnes of CO₂ per annum, generate £7 million in annual public benefits and sustain 457 local leisure and tourism jobs.

4.8 By encouraging people to become more active, health benefits of up to £6 million per annum would be realised. In addition the environmental improvements to the green infrastructure would make a contribution to local place making and shaping.

4.9 British Waterways already works with a range of partners such as Local Authorities, Sustrans and Transport for London, to improve access to and the quality of the towpaths in urban, semi urban and rural areas.

4.10 However further encouragement is required, not least as is happening through emerging policy guidance, to ensure that both the private and public sectors fully appreciate and take advantage of the opportunities described above.

5. SUSTAINABLE TRANSPORT—FREIGHT

5.1 BW waterways currently carry 1.7 million tonnes of freight each year. CO₂ savings are modest but reductions in congestion and the cost of developing alternative infrastructure are equally important and may be more important in conurbations.

5.2 This is the case for the Olympics traffic described below and anecdotally is the case for the large indivisible loads taken up the River Trent to the new power station at Staythorpe.

⁹ BW Briefing note 5

¹⁰ 27% of all car trips are commuter journeys DfTp 2009 Delivering a Sustainable Transport System: City and Regional Network Data book Annex 20 and DfTp 2007 Walking Personal Travel Factsheet

5.3 However the costs to the navigation authority of accommodating freight traffic may not be recovered through the level of tolls that the traffic can bear. Nor may the barge operator make sufficient profit to replace their vessel when it reaches the end of its economic life.

5.4 In many ways London is an exemplar of the way in which freight on water could be encouraged. Taking freight off the roads is seen to be a benefit for the City as a whole. Accordingly responsibility for achieving a modal shift has been accepted by a broad partnership with Transport for London acting as lead funder. Partnership funding from, among others, Transport for London, Olympic Delivery Authority, Aggregates Levy Sustainability Fund, Department for Transport, London Thames Gateway Development Corporation, London Development Agency and the Environment Agency has seen the construction of the new Prescott Lock, dredging, and other infrastructure improvements in East London to allow and encourage more freight on water; not least to take material into and out of the Olympics construction site and developments associated with the Olympics legacy.

5.5 Freight studies, to identify the potential, and innovative projects such as the construction of the Powerday Waste and Recycling Plant at Willesden, which can be served by water, rail and road; the development of a prototype multi modal refuse collection vehicle; and most recently the joint funding of a Sustainable Transport Project Manager, all help water compete with road on a more equitable basis.

5.6 Barriers to increased freight traffic include the shortage of suitable traffic having destinations and sources close to water, the comparative ease of using road transport, the age and number of existing vessels, etc. The London Plan offers exemplar consideration of the potential of the “blue ribbon” network in the City which is then backed by a range of partners recognising the benefits to the City as a whole of increased traffic on water.

5.7 Solid encouragement will be required if the comparative ease and flexibility of road transport is to be overcome.

6. RENEWABLES

6.1 In March 2009 British Waterways announced an agreement with The Small Hydro Company Ltd to generate 210,000 mega watt hours of renewable energy per annum by developing approximately 25 small-scale hydro electricity schemes generating enough power for around 40,000 homes, creating 150 construction jobs and saving an annual 110,000 tonnes of CO₂. Backed by Climate Change Capital's Ventus Fund, the process of gaining consents for the first five hydro schemes alongside river weirs has begun.

6.2 The partnership with The Small Hydro Company follows British Waterways' announcement in October 2008, of an agreement with Partnerships for Renewables to bring forward wind turbines on canal-side land over the next five years with annual capacity to generate 219,000 mega watt hours of renewable energy, enough for around 45,000 homes. We believe there is the potential to install 50 to 60 turbines each of around 2.4MW which would save around 100,000 tonnes of CO₂ per annum.

6.3 In December 2008 British Waterways and GlaxoSmithKline (GSK) unveiled an innovative energy saving scheme at the pharmaceutical giant's canal-side global headquarters in West London. This new green initiative will use canal water and heat exchange technology to provide a more sustainable alternative to traditional air conditioning—with a target of reducing GSK's head office carbon dioxide emissions by 920 tonnes per annum and lowering its energy bills.

6.4 This is on top of the existing 5MW installed on the waterways. We estimate that our waterways have the capacity to accommodate around 100MW of heating and cooling which would save around 100,000 tonnes of CO₂ each year equivalent to removing 40,000 family cars from the roads.

6.5 British Waterways also supplies water to industrial users, often on a take and return basis which is unavailable from the mains. Some of this supply will be from winter water surpluses retained in our reservoirs for our operational and supply purposes which otherwise would have to come from groundwater or other sources. Currently British Waterways supplies almost 200,000 ML/annum reducing the call on potable supplies and the environmental costs of treatment.

6.6 As with freight by water, the latter options are novel and therefore require more thought and effort from the customer than if installing an off the shelf air conditioning unit or mains supply. Any encouragement that can be given to the private sector to make that choice easier would be welcomed.

7. MITIGATION

7.1 Waterways can assist in a number of ways to mitigate the effects of climate change. They both contain and conserve valuable wetland habitats, including the waterway fringe, and connect habitat remnants or other valuable habitats to allow flora and fauna to migrate. They also provide opportunities for people to have access to natural areas in an urban environment; “the green bits between buildings”.

7.2 Canals can also act in a number of different ways to relieve flooding:

- Culverts act as throttles reducing downstream flooding.
- Canals and reservoirs intercept water that would otherwise have flowed downstream (from feeders, upstream embankments, etc.)

- Canals' freeboard provides a reservoir to attenuate flood flows.
- Canals transfer water from one place to another, potentially from a higher risk area to a lower risk area.

7.3 The presence of a canal and its potential for attenuation may reduce flood levels and therefore increase adjacent land values. Restorations where channels have been reinstated demonstrate this effect.

7.4 Several towns and cities are now considering reintroducing water; not least to create a “wow” factor or to differentiate them from the competition.

7.5 Towns and cities tend to experience higher temperatures than surrounding rural areas due to the heat island effect. City centres may be up to 7°C higher than the surrounding countryside, and the larger the city the more intense is the heat island effect. Waterways introduce trees and vegetation to the urban environment which helps to reduce temperatures and by evapo-transpiration add humidity to what is frequently uncomfortably dry city air. The value of green open spaces within cities for ameliorating local climatic conditions is widely appreciated, and is frequently quoted as one of the beneficial functions of greenspace.¹¹

7.6 These benefits are increasingly feeding through into policy documents. It is important that waterways are mentioned specifically as too often the benefits other than navigation are overlooked.

8. RECOMMENDATIONS FOR ACTION

- Inclusion of the role the infrastructure needed for sustainable transport, cycling and walking, can play within the broad package of measures to reduce carbon, create green jobs and encourage a change in people's mind set.
- Encouragement for potential partners, including local authorities, the RDAs and the private sector to consider waterways as part of their green infrastructure, jobs and climate change packages.
- Encouragement of investment to improve the quality of that resource.
- Specific inclusion and mention of waterways within guidance and policy documents to ensure the opportunities presented by waterways over and above navigation are fully considered and exploited for the public benefit.
- Encouragement for the private sector to consider ways in which partnerships with British Waterways and other similar bodies may help them reduce their carbon footprint, through use of the water for processes, cooling and heating, etc; towpaths for healthy and sustainable access by their employees; navigations for niche transport of waste, construction materials; etc.
- Consideration of the longer term social and environmental benefits in any future support for the construction industry during the current recession. We would argue that investment in the waterways offers particularly good value.

May 2009

Memorandum submitted by the Institute of Ecology and Environmental Management (IEEM) and the British Ecological Society (BES)

1. INTRODUCTION

1.1 The Institute of Ecology and Environmental Management (IEEM) and the British Ecological Society (BES) welcome the opportunity to contribute to the House of Commons Environmental Audit Committee Inquiry into Green Jobs and Skills and to submit evidence.

1.2 IEEM is the Institute supporting professionals in the fields of ecology and environmental management. The Institute was established in 1991 and currently has some 4,000 members drawn from local authorities, government agencies, industry, environmental consultancy, teaching/research, and voluntary environmental organisations.

1.3 The British Ecological Society is the UK's learned society for ecology. Established in 1913 and with over 4,000 members worldwide, our mission is to “Advance ecology and make it count”. The BES Policy Team works to ensure that policy-making is based on sound scientific evidence.

1.4 IEEM and the BES held workshops in 2003, 04 and 07 to examine skills gaps in ecology (unpub. and summaries in *In Practice* magazine¹²).

¹¹ Dr David Goode (March 2006) Green Infrastructure—Report to the Royal Commission on Environmental Pollution. Increasing tree cover by 25% can reduce afternoon temperatures by 6 to 10°C and simulations of a 30% vegetation cover reduced temperatures by as much as 6°C.

¹² *In Practice*, house journal of IEEM—The Skills Project, letter by Chloe Delgery AIEEM (IP56, Jun07); Letter to the Editor—A Response to “The Skills Project”, Sue Bell CEnv MIEEM (IP57, Sep07); Ecological Skills Gap Project, Jill Sutcliffe MIEEM (IP62, Dec08).

SUMMARY

- The threats to the environment represent not only a challenge but an opportunity.
- Sectors for new green jobs include not only traditional economic areas but also landscape, wildlife and biodiversity management as well as niche areas such as marine science. These are areas which form part of sustainable services requiring a range of ecological professionals.
- A new initiative setting up a “Green workforce” as part of a New Deal should be launched to ensure that both existing and new jobs contribute to bringing about environmental outcomes.
- Evidence from some ecological sectors, workshop contributions, as well as anecdotal information, suggests that there is a skills gap relating to the provision of qualified ecologists and environmental managers for a wide range of posts across the sector.
- This is being felt by government agencies including statutory nature conservation bodies and regulators as well as in other key areas of the sector such as wildlife conservation charities. The skills gap compromises the ability of the UK to respond sufficiently to policy drivers—such as the Convention on Biological Diversity and the Marine Bill currently passing through parliament.¹³
- Further work needs to be done to establish the extent of the problem and to make sure that people with the correct skills are coming into the profession and in sufficient numbers to fill job vacancies.
- There is a need to better co-ordinate education and training with employment to ensure that the skills needs of employers are met.

RECOMMENDATIONS

- There needs to be wider ecological literacy and ecologists need to be able to communicate and co-operate with those working in a variety of sectors.
- Ecology and Environment need to be fundamental to the environmental education curricula in order to create an environmentally-literate citizenship. They need to be included within the English National Curriculum as they have been in Wales, while discussions are still taking place in Scotland.
- Ecology and Environmental science are not classroom-based subjects and cannot be appreciated without experience in the field. Fieldwork should be a mandatory part of the Ecology/Biology/Environmental Science curricula just as it is for Geography.
- Employers are reporting that job vacancies in the environmental sector are proving hard to fill as applicants lack the appropriate skills, including ecological skills. There needs to be better coordination between educational courses, training and skills requirements.
- The environmental sector would benefit from either one Sector Skills Council dedicated to it or a lead Council which coordinates and services the sector.
- The ecology and environmental sector would benefit from the development of a range of information using different media to enable the careers services to promote the wide range of jobs available.
- There needs to be a New Green Deal in which a green workforce is nurtured and trained to ensure the best environmental outcomes for the UK.
- Statistics on the sector have proved inadequate for capturing employment and educational pictures. The sector should identify what is lacking and coordinate a case for improving the situation.
- Coordination needs to be strengthened to enable the sector to function effectively and to play a key role in providing leadership with regard to implementing new approaches to education, training and employment.

MAIN SUBMISSION

2. CONTEXT

Definition:

Green jobs have been defined as

*“those that contribute appreciably to maintaining or restoring environmental quality and avoiding future damage to the Earth’s ecosystems”.*¹⁴

2.1 The Millennium Ecosystem Assessment (MA)¹⁵ examined the consequences of ecosystem change for human well-being and the scientific basis for the actions needed to enhance the conservation and sustainable use of natural resources. It showed that “human actions are depleting Earth’s natural capital, putting such strain on the environment that the ability of the planet’s ecosystems to sustain future generations can no

¹³ *The UK Marine Bill* (2008) HM Government.

¹⁴ UNEP report, *Green Jobs: Towards decent work in a sustainable, low-carbon world*, UNEP, ILO (2008).

¹⁵ *Millennium Ecosystem Assessment* (global) 2005, Island Press; (local UK in press).

longer be taken for granted. At the same time, the assessment shows that with appropriate actions it would be possible to reverse the degradation of many ecosystem services over the next 50 years, but the changes in policy and practice required are substantial and *not currently underway*.” This is why the understanding of ecology and environmental management are crucially important. This is further alluded to in a number of reports, including on climate change,¹⁶ and a further exploring the links between the environment, the economy and jobs.¹⁷

2.2 Evidence given to the EAC by the Environmental Industries Commission¹⁸ valued the industry at some £10 billion, employing over 800,000 people. It dwelled on the environmental technology and services industry, the carbon management and renewable energy industry but just as in a 2005 DTI report,¹⁹ the figures excluded internal corporate environmental teams, Ecology, NGOs, charities and public sector organisations.

2.3 The environmental sector was judged, before the economic crisis, to be comparable in size to the UK pharmaceutical and aerospace sectors and was projected to grow by 42% by 2010, at a time when much of UK manufacturing is moving offshore.²⁰

2.4 Against the backdrop of increasing requirements for these kinds of skills it is concerning that across the marine, freshwater and terrestrial ecology sectors, employers are reporting that recruitment of ecologists (both specialists and generalists) with the relevant skills is problematic (workshop input, 2007, IEEM unpub).

2.5 A report²¹ from Royal Haskoning stated: “As pressure mounts for British businesses to implement ‘green’ strategies and services, the worry remains whether our current and future domestic skills market can service these demands.”

“We need to encourage the take up of science and engineering degrees and create an environment that fosters home-grown talent in order to ensure Britain benefits, and not suffers from, the forthcoming ‘green collar’ boom.”

2.6 At IEEM and BES we consider understanding the earth, its processes and the species which inhabit it and the relationships between them to be the *fundamental* green skills. This embraces:

- Ecology.
- Environmental management meaning ecological management of the natural environment.
- Environmental science.

2.7 Recruitment and retention of skilled lecturers, teachers and Field Studies tutors is fundamental to teaching and training new groups of students adequately. Without basic training in ecology, at primary and secondary levels, we cannot create the workforce necessary for the UK to remain competitive in relation to “green collar” jobs. Similarly, without adequate support and training for ecologists through post-16 education and beyond, we will not meet the skills needs.

2.8 The Science Council reports on its website that the UK needs some 400,000 more science and technology qualified individuals in the workforce by 2020 if it is to compete globally.²² The publication of the Eurobarometer survey underlines the importance of how scientists can help tackle major global issues such as environmental problems.²³

2.9 A number of current initiatives concerning Ecological and Environmental skills are summarised in Appendix 1.

3. EDUCATION

3.1 It is vital that Ecology and Environmental Science are embedded in curricula across the age ranges.²⁴ We need to:

- Train the next generation of naturalists and thus ensure that environmental processes are understood and their healthy functioning maintained.

¹⁶ Stern N, *The Economics of Climate Change*, The Stern Review (Cambridge and New York, Cambridge University Press 2006).

¹⁷ GHK, *Links between the environment, economy and jobs* (2007).

¹⁸ Environmental Industries Commission Memorandum, *Pre-Budget Report 2008: Green fiscal policy in a recession* report 16 March 2009.

¹⁹ The full report, *A Study of Emerging Markets in the Environmental Industries Sector 2006* carried out by UK CEED, for DBERR (former DTI) has not been published in hard copy. The report, including detailed analysis of the EGS sub-sectors, can be found at: www.dti.gov.uk/sectors/environmental/index.html and outlines the environmental industries to include: Air Pollution Control; Cleaner Technologies & Processes; Decommissioning/Decontamination of Nuclear Sites; Environmental Consultancy; Environmental Monitoring, Instrumentation and Analysis; Energy Management/Efficiency; Marine Pollution Control; Noise and Vibration Control; Remediation and Reclamation of Land; Renewable Energy; Waste Management, Recovery and Recycling; Water Supply and Wastewater Treatment *UK Government guide to mapping the Environmental goods and Services Sector*, DTI and UK Forum for Environmental Industries (Dec 2006).

²⁰ ENDS, *Environmental Data Services Salary and Careers Survey*, 2007, 2008.

²¹ A survey of 500 senior business people published today by engineering and environment consultancy Royal Haskoning shows that more than half think their need for green skills will increase in the near future. ... according to the survey Britain’s shift to a green economy is in full swing, with one in five business owners saying they already employ someone with green skills or a remit to look after the environmental impact of the business. Research conducted by ICM research, Press release 12/09/08 www.royalhaskoning.co/Royal_Haskoning/Corporate/en-GB/news/green+collar+skills.htm.

²² www.sciencecouncil.org.

²³ <http://www.geis.org/en/services/data/survey-data/eurobarometer>.

²⁴ Ofsted, *Schools and Sustainability: A climate for change* (May 2008).

- Ensure that fieldwork is a mandatory part of courses as outdoor education provides a fundamental part of learning and enjoying ecology and provides a rounded understanding of the environment and aids specific identification skills.
- Ensure that the UK has an environmentally literate population.
- Recognise the importance of retaining taxonomic expertise but also in passing on such skills.

3.2 Primary and Secondary Education—Ecology and Environment need to be fundamental to the education curricula in order to create a workforce equipped to take advantage of any “green collar” job opportunities, and to create an environmentally-literate citizenship. They should be integral to the English National Curriculum, which they currently are not, with ecology only featuring as a minor unit within the A-level Biology syllabus. Ecology *is* included in the Welsh National Curriculum and is still under discussion in Scotland.

3.3 Ecology and environmental science are not class-based subjects and cannot be appreciated without experience in the field. It is encouraging that the Welsh Assembly Government recognises the importance of fieldwork, recommending that 20% of education should be outdoors. We recommend that fieldwork should be a mandatory part of the Ecology/Biology/Environmental Science curricula just as it is for Geography. A 2003 report by the BES and Field Studies Council is arguing for the need to properly embed fieldwork in Ecology/Biology courses.²⁵

3.4 Tertiary Education—In 2008, 38 undergraduate single ecology degrees and 43 postgraduate qualifications in ecology were offered (UCAS database). Colleges have found it harder to provide fieldwork given increasing numbers of students on courses and the decline in the knowledge base as people who could teach fieldwork retire (Pers comm. Prof. Nigel Bell, Imperial College).

3.5 The number of courses producing graduates and post-graduates with the specific skills needed has declined^{26, 27} We are likely to need more terrestrial ecologists and air quality skills in future (see Section 6).

3.6 At a Natural England Education and Learning consultation workshop (Key, 2008²⁸) concern was expressed about the decline in “whole organism” biology, taxonomy and the natural history element of ecology and animal behaviour.

3.7 Many universities find it difficult to address these shortfalls as many of their own staff with these skills have now retired, and the subject area does not attract significant research funding to warrant their replacement.

4. SKILLS/CONTINUING PROFESSIONAL DEVELOPMENT (CPD)

4.1 Reform to early education needs to be accompanied by reform in relation to top-up training and employment.

4.2 Like architects or doctors, academic ecological/environmental science courses do not produce professional ecologists on their own. Other topics/skills need covering in different ways including work experience, training course, mentoring or secondments.

4.3 Participants at a 2007 BES workshop raised concerns about the reliance of the sector on *voluntary* experience as a means of gaining practical experience and the lack of advice at undergraduate level on the need to gain this experience with clear progression into paid employment (unpub. workshop reports). The consequence is that students become disenchanted and give up on this sector.

4.4 Ecology and Environmental work is spread amongst nine of the 25 Skills Councils. The result is that the associated work areas do *not* have a profile within traditional work areas and associated skills. While some of this is changing—*eg* a LANTRA land based Diploma and the Science Diploma for 14–19 year olds are being developed—the disparate nature of the sector contributes to a lack of impact.

4.5 The careers services need to be better supported with information about environmental/ecological careers. The IEEM/BES booklet *Rooting for a Career*²⁹ is a good initiative but needs promoting more widely. Career progression is generally poorly developed within the sector.

5. EMPLOYMENT

5.1 The Welsh Assembly Government has undertaken a consultation on Green Jobs for Wales³⁰ which is clear and brings coherence to a disparate area. It summarises the evidence underpinning the approach and examines environmental change, business opportunities and the policy context at home and abroad.

5.2 All work areas and development projects need to take the environment into account which means ensuring that ecological understanding is widespread among a whole range of jobs.

²⁵ *Teaching Biology Outside the Classroom: is it heading for extinction?* FSC and BES, 2003.

²⁶ Royal Society, *A higher degree of concern* (Jan 2008); *A state of the nation* report about UK's science and mathematics workforce (2007; 2008).

²⁷ HEFCE, *Sustainable Development in Higher Education Consultation 2008*; output 2009.

²⁸ Natural England (2008), *Whither the new naturalists?* Education workshops run by Dr Roger Key for Natural England, 2007.

²⁹ http://www.britishecologicalsociety.org/career_paths/index.php.

³⁰ *Green Jobs for Wales, A consultation*, WAG, November 2008.

5.3 CEDEFOP, the European Centre for the Development of Vocational Training, is currently investigating methods for enabling future projections of employment to be made and ran a workshop on Green skills in October 2008. The outcomes of the workshop will shortly be made available.³¹

5.4 The EURoccupations project³² held its final meeting in April 2009 having worked on devising a database for work across Europe. Of the 1,500 occupations selected for the extended database of frequently occurring occupations, only three related to “green jobs”: those of environmental scientist; climatologist; and environmental pollution technician.

6. SPECIFIC SKILLS GAPS

6.1 LANTRA, the environmental land management Skills Council, has undertaken work in the area of environmental skills³³ (see Appendix 2) and a report pointed to the need to improve the UK skills base.³⁴

6.2 Evidence demonstrates that there are skills gaps in:

— Freshwater³⁵

Until the late 1970s the UK was considered to be at the forefront of research in freshwater ecology and limnology. Those with expertise are now in restricted supply when there is a need to implement the EU Water Framework Directive. It is also difficult to recruit those with fisheries skills.

— Marine³⁶

The UK is an island and the seas support a wide range of habitats and species. The sea also contributes to feedback mechanisms influencing the climate. Problems include increasing acidification, overexploitation of fisheries and a loss of biodiversity.

— Nuclear³⁷

Human society is greatly reliant on energy. The current drive towards another phase of nuclear power in the UK brings with it issues concerned with a lack of suitably skilled staff, and

— Radioecology³⁸

There is a need to understand the movement of radionuclides through the environment. Today there are still 369 affected farms and 190,000 sheep under movement restrictions following fallout from the Chernobyl accident in 1986.³⁹ Research evidence pointed to the fallout being adsorbed by the soils but failed to take account of the unique behaviour of acidic and lowland soils. The radionuclides fell onto acid soils and were taken up by the livestock. Thus understanding environmental modelling of radionuclide transfer and the risks from internally deposited radionuclides (eg HPA struggling to deal with Litvinenko incident) need skilled radioecologists.

— Taxonomy

“Without taxonomy to give shape to the bricks, and systematics to tell us how to put them together, the house of biological science is a meaningless jumble”.

Robert May, 1990

Former Government Chief Scientist.

6.3 There have been three reports on Systematics and Taxonomy following inquiries by the House of Lords Science and Technology Committee over the last 17 years. The House has been concerned that, without adequate recognition by government and the wider scientific community of the need for improving taxonomy, the national ability to deliver commitments to conserve biodiversity will be seriously hampered. They most recent report recommended developing a web-based taxonomy, funding from the National Environment Research Council and nominated DIUS to be the lead department for systematic biology.⁴⁰

6.4 Taxa—there are seven Botany courses on offer at British Universities but no mycology courses and no dedicated Botany Departments (BSBI Evidence to the House of Lords committee on taxonomy, 2008⁴¹). This matters because all life depends on plants and fungi. A loss of skills and knowledge in this area would be detrimental to understanding how the earth functions, how to manage changes which are taking place or future impacts. European research led to the development of a web-based service.⁴²

³¹ CEDFOP. *Skills in Europe 2020* Cedefop working paper No 1 (2008).

³² Pers comm. Margaret Birch University of Warwick.

³³ LANTRA, Market Assessment for Environmental and Land-based Sector (2003); Skills Foresight (2001); Needs based assessment draft (2009).

³⁴ Leitch Review of skills, Prosperity for all in the Global Economy: World Class skills (Dec 2006).

³⁵ *A Review Of Freshwater Ecology In The UK* Battarbee 2005.

³⁶ EA workshop comment (IEEM and BES workshops summaries, unpub).

³⁷ *New Civil Engineer* 21st Nov 2008.

http://www.nce.co.uk/news/2008/11/nuclear_skills_gap_must_be_pluggedby_graduates_and_engineers_from_other_sectors_says_magnox_chief.html.

³⁸ OECD/NEA, 2000, 2002, 2004, RP133, 2002.

³⁹ 13 May 2009, *The Guardian* article by Terry Macalister and Helen Carter.

⁴⁰ House of Lords Taxonomy inquiries, 1992; 2001–02; and 2008. *5th report of session 2007–08, Systematics and Taxonomy: follow-up report with evidence* (HMSO, published 13/8/08).

⁴¹ Prof. Richard Gornall, President of the BSBI.

⁴² EDIT, Taxonomy in Europe in the 21st century.

6.5 Regional skills gaps: A lot of work has been undertaken by regional bodies on skills gaps, but again those concentrating on green skills have been limited by a lack of information. An early analysis showed close links in the south west regions between economic development and a healthy environment^{43, 44}

7. FUTURE SKILLS NEEDS

7.1 The key need is for scientific evidence to underpin future policies and responses to changing situations; it is fundamental that we continue to train ecologists at university/college and provide additional skills through CPD as ecologists' careers develop. This entails maintaining a high quality teaching profession. Evidence-based policy-making demands specialist skills, which can take at least ten years to acquire,⁴⁵ as well as generalists who can understand and translate the research findings governing progress and development of understanding. Knowledge and data will need to be upgraded to keep pace with new demands and the use of emerging technologies.

7.2 Increasingly people have come to recognise and value the importance of the natural environment. Current developments include the Ecosystem Services⁴⁶ approach being taken forward by Defra, Natural England and others. The European Commission and the German Federal Ministry for the Environment plus partners, have jointly initiated preparatory work for a global study, *The Economics of Ecosystems and Biodiversity*⁴⁷ Report (TEEB). This will make demands on ecologists not only to provide the necessary associated evidence but also to learn new skills to apply to changing perspectives.⁴⁸

“The TEEB interim report shows that if we do not adopt the right policies, the current decline in biodiversity and the related loss of ecosystem services will continue and in some cases even accelerate. Some ecosystems are likely to be damaged beyond repair. Current trends in the loss of ecosystem services on land and in the oceans demonstrate the severe dangers that biodiversity loss poses to human health and welfare.”

7.3 Interdisciplinary approaches are much heralded as providing important insights by creating teams drawing on a range of skills including social and natural science. This is exciting and productive but requires a flexible approach to developing new skills and understanding different subject matter.

7.4 A key need⁴⁹ is to substantially strengthen the knowledge base for conservation and sustainable use of biodiversity, in the EU and globally. This implies the development of an information system to support the biodiversity policy cycle in the EU. Environmental monitoring and assessment plays a vital role in ensuring that what we imagine is happening in the environment is what we predicted.

7.5 Some of the evidence presented in this report highlights skills which are important but which are in decline. The decline in traditional taxonomy skills, means that, for example, more people may now know the genome of a plant than can recognise it in the field. Taxonomic skills need re-vitalising and whole organism biology should be maintained and supported.

7.6 The UK Foresight Committee has commissioned a report⁵⁰ “*Land Use Futures*”, reviewing likely policy and legal commitments affecting UK land use over the next 50 years including future skills projections.

8. DATA

8.1 While the increase in environmental protection legislation and policy is to be welcomed there has *not* been an attempt to quantify the associated staffing numbers or skills required, unlike that which takes place in the National Health Service for example.

8.2 There is a dearth of reliable statistics available in the field of ecology and environmental management and international and national reports refer to this.⁵¹ Gathering information for this review has shown that the sector is both data and information poor. Data gathering needs to be better planned and formalised throughout both the educational system and employment cycle. The sector should identify what is lacking and coordinate a case for improving the situation.

⁴³ RSPB et al (1998) the *Economic Importance of the Natural Environment Sector in SW England*.

⁴⁴ Environment Agency, English Nature Countryside Commission, Wessex Water, Forestry Commission *An Environmental Prospectus for South West England* (March 1999).

⁴⁵ Pers comm Steve Knowles Environment Agency, April 6, 09.

⁴⁶ Defra Valuing Ecosystem Services and the Natural Capital Initiative DEFRA, Securing a healthy natural environment An Action Plan for embedding an ecosystems approach—Summary and Report (Defra, 2007); An introductory guide to valuing ecosystem services (Defra, 2007). www.defra.gov.uk.

⁴⁷ TEEB Report TEEB Report, *The Economics of Ecosystems & Biodiversity* (TEEB) Pavan Sukdov, EU (2008).

⁴⁸ “In a global study we will initiate the process of analysing the global economic benefit of biological diversity, the costs of the loss of biodiversity and the failure to take protective measures versus the costs of effective conservation.”

⁴⁹ Communication on Halting the Loss of Biodiversity to 2010 and Beyond (COM(2006)216 final).

⁵⁰ Land Use Futures, reviewing likely policy and legal commitments affecting UK land use over the next 50 years which will report in Autumn 2009.

⁵¹ *UNEP report 2008* p5; SW regional analysis, CHES, ERFF.

8.3 Tertiary education—Within HESA data, Ecology is hidden within Environmental Science, therefore HESA statistics concerning Ecology have to be bought. Changes over 2007–08 mean that Environmental Science subjects now appear under different Joint Academic Coding System (JACS) codes, which makes tracking the statistics for Environmental Sciences courses and longitudinal studies—and the number of students—more difficult to collate (CHES, 2008).

8.4 Employment—Defining the Environmental Sector is hampered by the fact that neither the Standard Industrial Classification (SIC) nor the Standard Occupational Classification (SOC) cover the environmental industries or occupations. The SIC 2007 rectifies this problem to some extent but the data collected will not be available for a few years. Accordingly, official statistics relating to employment reveal little about the number of people employed in the sector, the type of jobs in which they are engaged, or the qualifications they possess.

8.5 LANTRA has found it difficult to assemble evidence across a disparate sector but has undertaken a range of research and is currently working on a skills needs assessment.

8.6 When people are looking for employment through Job Centres there is no reference to a group of jobs under a sub-title such as “Ecology” or “Environmental Scientist”.

8.7 Teaching—Government statistics do not capture the problems faced by schools and colleges⁵² in maintaining a strong science and maths teaching workforce. There are inadequacies in data relating to recruitment, retention and attrition of science and maths teachers.⁵³

9. CONCLUSION

9.1 Joined-up thinking and action is needed, which is lacking at present. The 2008 CSIRO report⁵⁴ on Green jobs concluded:

“Substantial action will be required to ensure that the skills, education and training required are available and ready to contribute.”

This would mean integrating activities among a disparate sector to include government departments and advisors, education institutions and employers. Such an effort would need to be supported by the ability to more closely link education and training, employment and skills and the environmental footprints these generate. In turn, the scientific community would need to continue to provide analysis and evidence to improve the understanding of the issues as well as the requisite data. The end result could be:

- improved health of both people and the planet;
- economic benefits; and a
- reduction in environmental impacts.

This is a large challenge which requires commensurate commitment by government and all those involved in the sector to bring it to fruition.

June 2009

APPENDIX 1

UK SECTOR-WIDE INITIATIVES

In addition to the IEEM Ecological Skills Gap project, a number of groups are working on relevant projects and will need to feed in to this consultation:

EDUCATION

- ERFF environmental skills (post graduate). Identification of the skills needs and training priorities in the Environmental Science sector for the next 10 years project outline 2008 and series of reports.
- HEFCE *Sustainable Development in Higher Education* encouraging the uptake of sustainable courses and procedures.
- Joint BIOSCIENCES FEDERATION—BBSRC CONSULTATION to identify niche areas of expertise in danger of being lost from the bioscience research community. Results to be used to enable prioritisation of support by the BBSRC for areas which have a vital impact on the UK’s ability to carry out world-class bioscience research.
- CHES (tertiary education and undergraduates) Mapping the Environmental Science Landscape, An investigation into the state of the ES subject in Higher Education, Jennifer Blumhof and Phil Holmes, CHES and GEES.
- British Ecological Society: Starting from Scratch—Ecological Education 0–19 years.

⁵² Royal Society, *State of the Nation* reports 2007 and 2008.

⁵³ Kings College, *Science education in Europe: Critical Reflections*, Jonathan Osborne and Justin Dillon (Jan 2008).

⁵⁴ *Growing the Green Collar Economy: Skills and labour challenges in reducing our greenhouse emissions and national environmental footprint*, Report to the Dusseldorp Skills Forum, S Hatfield-Dodds, G Turner, H Schandl, CSIRO Sustainable Ecosystems, (June 2008).

DIPLOMAS AND SKILLS

- LANTRA environmental industries skills—skills needs assessment (covers 17 land-based work areas) but NB: only nine of the 25 Skills Councils cover areas relevant to the environment and thus provide a disparate coverage.

EMPLOYMENT

- Sustainable Development Commission—is working on embedding sustainable development within government departments.

COUNTRY INITIATIVES

- NATUR in Wales is planning to research skills gaps, including addressing potential future gaps.
- A review paper is being written by Dr Janet Dwyer⁵⁵ for the Government's foresight exercise on "*Land Use Futures*", reviewing likely policy and legal commitments affecting UK land use over the next 50 years. Reporting in autumn 2009.

APPENDIX 2

SKILLS GAPS

Skills shortages—recruitment difficulties due to an excess of demand over supply of required skills in the external labour market

Skills gaps—a divergence between a firm's current skill levels and those which are required to meet a firm's business objectives

(*Skills Foresight*, March 2001, Lantra)

In preparation for the land-based Diploma, LANTRA commissioned some research

ENVIRONMENTAL CONSERVATION SKILLS PROFILE

<i>Generic Skills</i>	<i>Sector specific skills</i>
Communication/presentation skills	Land management
Partnership working/influencing	Development planning
IT	Legislation including H&S
Staff or volunteer supervision	Project management
Report writing/analysis	Communities/access
Budget management./funding	Impact assessment
Contract management	Environmental Education
Working with volunteers	Applied countryside law
Business management	Field studies/identification
Income generation	Practical habitat management
Dealing with anti-social behaviour	Inspirational interpretation
	Site management planning
	Traditional rural crafts
<i>Added</i>	<i>Added</i>
Good networking skills	Knowledge of International, Supra-national (EU), national, regional and local infrastructure
Media	Decision making bodies
<i>Promotion</i>	GIS and mapping
	Knowledge of status of species and licensing where needed
	Policy making
	Influencing

Barriers are considered to include:

- image of the profession;
- perception of long, anti-social hours, low pay; and
- low status.

(*Skills Deficiencies in Environmental Conservation* prepared for Lantra by Christie and Christie, Oct 2005)

⁵⁵ *Countryside and Community Research Institute (CCRI)*, a unique partnership between the University of the West of England, Hartpury College, Royal Agricultural College and the Countryside and Community Research Unit at the University of Gloucestershire.

Memorandum submitted by E.ON UK

SUMMARY

1. E.ON is one of the world's largest investor-owned power and gas companies, with operations in more than half of the EU member states and in the United States. Its role in developing and investing in low carbon technology is an important contributor to meeting climate change targets. E.ON seeks to contribute to both the affordability and security of energy supply through improving diversity of fuel supplies for power generation. In the UK, E.ON is investing in a range of low carbon technologies including offshore and onshore wind, biomass, marine devices, micro CHP, heat pumps, carbon capture and storage and nuclear energy.

2. The UK has set some demanding domestic targets for CO₂ reduction under the Climate Change Act. While these will impose additional costs on the UK economy, it also provides a range of economic opportunities for the development of new low carbon industries which can provide the UK with a competitive advantage within the global economy as other developed and developing countries shift to lower carbon technologies, can support employment and ensure the UK has a diverse and resilient economic base.

LONG-TERM POLICY FRAMEWORK

3. The right long term policy framework will incentivise investment in low carbon technologies and help maximise environmentally positive opportunities. In our view the EU ETS should be the main driver of investment in low carbon technologies in power generation across the EU, but additional policies are required to support emerging technologies which are not yet commercial in their own right. A robust international climate change deal is needed at Copenhagen to drive a carbon price capable of incentivising investment in the technologies required. In particular an agreement is required which will enable the EU to commit to a 30% reduction in GHG emissions by 2020 which will in turn lead to a tighter cap on emissions under the EU ETS over the period and a more robust carbon price.

4. Downstream, a mix of policy measures is required, including minimum standards, tax incentives and specific incentive mechanisms. The renewable heat incentive and the feed-in tariff (FIT) will have a crucial role in incentivising new low carbon technologies. Planning policy has a key role to play at all levels. This approach will help create a market to which manufacturers and others can respond.

PUBLIC SPENDING

5. Government should be supporting industry to help it respond to environmentally positive opportunities, developing the UK's existing technological, manufacturing and skills capability and attracting new inward investment. This will help to tackle the recession, whilst also taking advantage of employment opportunities that may arise. Support can be through financial and non-financial incentives. Implementing robust and efficient systems for planning and the grid will reduce potential bottlenecks and provide more confidence that there will be a steady stream of projects and demand for projects requiring a supply chain. This will enable more UK based companies to win business but they need to do so on the basis of the quality and competitiveness of the products and services they can offer rather than any predetermined preference for UK products which would in any event be unlikely to comply with EU law. The UK should not aim to be self-sufficient in all technologies but should focus on those where it can draw on or develop existing skills and capabilities or transfer these to new markets.

6. To the extent that the UK needs to fund shorter-term public and private sector investment to reduce the impact of the current downturn and to increase employment, intervention should be focussed on measures which will accelerate the investment required to meet our longer term goals, or support the development of new technologies which have economic potential for the UK.

7. The effect of the economic downturn has varied across sectors but it has adversely affected the economics of some projects and as such we welcome the Government's decision to propose an increased level of support for offshore wind projects under the Renewables Obligation which will provide necessary incentives for offshore wind projects.

8. Public procurement has an important role to play particularly in terms of reducing the carbon emissions associated with buildings, supporting the market for energy efficiency and renewable technologies and providing anchor loads for district heating whether supplied by fossil fuels or biomass. This is particularly significant at the current time, as the private sector has much less capability to invest. If the public sector is encouraged to be less risk-averse, it could enable the pull-through of emerging technologies to be developed at taxpayers' expense in universities. However, this would require all stakeholders to accept that some projects would fail, and public sector procurement staff would require skilled support to ensure that these risks were managed to an acceptable level.

LOW CARBON INDUSTRIAL STRATEGY—SUSTAINABLE DELIVERY MODEL

9. In the energy sector, the UK should look to develop technologies which will contribute most effectively to the UK's energy goals of low carbon, secure and affordable energy supplies. This will help create sustainable economic growth. It should also take account of the timescales for delivery of the UK's longer term GHG emission reduction goals to 2050 and the technologies that will be required to deliver this over

that period as suggested by the Climate Change Committee. This means supporting technologies which are or have the potential to be economically viable in the UK energy market, are low carbon and can contribute to fuel diversity. In the past this has tended to favour technologies which can make use of the UK's indigenous energy resources where these are economic to exploit, such as coal, oil and gas. In the future we would expect the UK's natural renewable resources, such as wind, wave and tidal, to play an increasingly important role, but the UK will need access to a range of technologies in which the UK has a range of industrial capabilities. Our views on individual technologies are set out below.

10. The Committee on Climate Change has put together a comprehensive view in its report "*Building a Low Carbon Economy*" on how the UK can meet its 80% GHG target by 2050. It shows that the key to delivering a low carbon economy is through a substantial increase in the generation of low carbon electricity, which will then support decarbonisation of much of the remaining economy. The projections on the use of each of these technologies are driven by a number of assumptions around the demand for electricity with substantial increases coming from both the transport and heat sector through technologies like electric vehicles and the deployment of ground source heat pumps. The level of this demand in the transport sector is contingent on suitable incentives being delivered to drive the take up of electric vehicles.

11. Focus on green industries will provide both economic and social benefits. E.ON is committed to changing energy and as such is heavily engaged in partnerships and groups, which collaborate on different aspects of the challenge of commercialising new and emerging technologies. Notably, we are involved in a leading public-private partnership via the Energy Technologies Institute (ETI), which is specifically addressing the perceived gap in funding and effort received by technologies which have emerged from R&D as proven concepts, but not yet reached a point of being fully-commercially viable. E.ON is currently working on a pioneering project, within the ETI, for example, to develop a next-generation offshore wind turbine with Rolls Royce. The ETI will also be addressing technologies such as carbon capture and storage and electric vehicles.

12. Traditionally, E.ON's R&D department (E.ON Engineering) has also been involved as active members of bodies including the Engineering and Physical Sciences Research Council (EPSRC) and the Electric Power Research Institute (EPRI), which include a wide industry membership base. E.ON conducts collaborative research with industry partners through both public funded means (eg via the Technology Strategy Board) and private partnerships with original equipment manufacturers (OEMs) such as Alstom and Doosan Babcock, as well as other utilities. E.ON's UK business also benefits from coordinated R&D activities across the E.ON Global Group, bringing new ideas into the UK. Furthermore E.ON's R&D department is also participating in an East Midlands Development Agency effort to co-ordinate the development of skills for the future, to help position the region for future market developments.

13. Where policy is not yet fully defined, as is the case with coal and CCS or smart meters, Government decisions need to be reached quickly so that policy can be translated into firm investments.

JOB CREATION

14. The UK has a high technology manufacturing capability in a number of areas relevant to low carbon energy production. These include aerospace, offshore oil and gas production, information and communication technologies and software sectors as well as more traditional technologies such as boiler manufacturing. The UK also has a well developed science and engineering base in its universities but this capability has not been fully exploited and translated into commercial products. For spin-outs and start-ups, the critical issue is cash flow as they go from small scale prototypes to commercial deployment. What may help is public sector support (eg soft loans) to take technologies from the stage where their development costs start to escalate to the level of commercial demonstration when industry will have the confidence to make larger investments. The investment community can help here, but often the investment models used mean they take a shorter-term view which is often not in the best long term interests of the technology. Typically this involves a rush to premature commercialisation, followed by technology failure, which damages industry confidence and sets back progress, allowing better supported competitors from overseas to become market leaders.

LOW CARBON SKILLS BASE AND GOVERNMENT POLICY TO SUPPORT DEVELOPMENT

15. *Energy efficiency*: from an energy policy perspective, investment in improving energy efficiency is amongst the lowest cost options for reducing CO₂ emissions. The UK has particular capabilities in organic light emitting diodes (OLEDs) and optoelectronics for lighting and displays. The UK needs a more coordinated and focussed approach to the roll-out of energy efficiency measures and to the upgrading of its existing housing stock, complementary to its objective of zero carbon homes for new build. We believe it is very unlikely a conventional market will deliver the step change in activity required to deliver 2020 and 2050 targets. As such, we favour a regional franchise approach to upgrading the UK housing stock from 2013 onwards in which a single organisation is charged by Government with delivery within defined geographical area supported by the availability of low interest loans for consumers.

16. *Smaller scale renewable and low carbon heat and power technologies*: small scale renewable heat technologies such as ground and air source heat pumps are some of the lowest cost options for delivering the 202 UK renewable energy targets. The UK has particular capabilities in small-scale wind and fuel cells but the renewable heat incentive needs to be structured to support investment in these emerging technologies.

17. *Decarbonising heat delivery in the built environment*: particularly for existing buildings, needs to be a key objective of Government energy policy. For new buildings and retrofits, E.ON sees a big role for heat pumps. Heat pumps represent both a highly cost efficient and carbon effective way of providing heat and hot water. By sourcing heat from the air or ground, using a grid electricity input, the heat pump is able to convert one unit of heat and in the right conditions produce up to three units of heat in return. Heat pumps are highly effective heat-led solutions in hard to treat locations off the gas grid. Further technical improvements are likely that will considerably enhance the performance of heat pumps and, with an increasingly low-carbon electricity grid, could make these an effectively zero-carbon heat source in the future.

18. We see *micro-CHP (combined heat & power) technology* as promising in addition to heat pumps, especially fuel cell micro-CHP. Micro CHP replaces the gas boiler in a central heating system. It burns gas to produce space and water heating, whilst simultaneously generating around 3,000kWh of electricity annually. E.ON sees micro-CHP as a highly effective energy efficiency and carbon mitigation technology for housing. Given that fuel cell micro-CHP can deliver electrical efficiencies in excess of 60%, and the technology makes use of the existing gas infrastructure, micro-CHP is well suited for the UK:

- (a) E.ON is actively supporting the development of small scale low carbon heat technologies through our micro-CHP portfolio. E.ON has a partnership with UK based technology manufacturer Energetix-Genlec to support them in the commercialisation of their wall mounted organic-rankine-cycle micro-CHP unit. We are co-funding Energetix-Genlec to support the development of a product designed specifically for the UK market. In addition to this, we are working closely with them to develop a robust and efficient supply chain around the core product.
- (b) E.ON also has a partnership with the New Zealand based micro-CHP manufacturer WhisperTech to commercialise the Stirling engine WhisperGen micro-CHP unit and deploy it in the UK. We also have a partnership with Australian based Ceramic Fuel Cell Limited (CFCL) where we are funding the development of a fuel cell based micro-CHP unit for commercialisation and launch in the UK marketplace. The fuel cell unit installed by CFCL has proven itself to be the most efficient solid oxide fuel cell in the world achieving an electrical efficiency of 60%.

19. *Smart Meters*: smart meters have an important role to play in changing customer consumption behaviour by providing them with information about their consumption patterns. We welcome the Government's commitment to rolling out this technology to all households within ten years. Smart meters and advanced "time of use" tariffs could create much greater flexibility in power demand, which would enable demand to be more responsive to the increasing volumes of variable renewable generation which will result from delivering the UK's renewable energy targets for 2020, reducing the need for back up generation. This could play to UK innovation capabilities in smarter technologies in buildings and appliances.

20. *Industrial combined Heat and Power*: combined heat and power on an industrial scale continues to have a very important role in ensuring the more efficient use of fossil fuels. We welcome the Government's announcement in the budget to extend the climate change levy exemption for CHP to 2023.

LARGER SCALE RENEWABLE TECHNOLOGIES

21. *Wind*: the UK has some of the best wind resource in Europe and we therefore expect onshore and offshore wind to be major contributors to the delivery of the UK's 2020 renewable energy targets, with Government support. Currently the major manufacturing capability for onshore turbines is in Continental Europe. This is a mature market and as such we believe there is a limited opportunity for UK companies to achieve a reasonable market share in the manufacturing process across the various stages of the supply chain. In contrast, the offshore wind industry is very much in its infancy. Current capacity for offshore wind turbines is insufficient to meet expected demand in the near future. Increasing manufacturing capacity could be achieved through the expansion of existing factories or through the construction of new factories in coastal regions of Europe. It is likely a combination of both will be required. Given the size of its potential offshore wind market, the UK and its skill base is potentially well placed to attract new and existing entrants.

22. A key factor in the decision making process will be the infrastructure at ports and nearby land. In addition, a clear strategy to address the barriers to investment in the UK market, including planning and transmission issues, will help create a longer-term market which manufacturers can respond to positively. The capability in the UK also exists in the construction of turbine foundations. Current designs are not fit for purpose for Round Three offshore wind farms and the cost of transport suggests that the manufacturing of foundations should be nearer to the wind farm. With the skills and capabilities that already exist in the oil and gas sector, we see these as being transferable to the offshore wind sector.

23. *Biomass and biomethane*: the UK has sustainable indigenous feedstock which can support biomass development to a certain scale but a large proportion of this has already been exploited. There may exist an opportunity to support a higher level of biomass capacity in the UK. Nevertheless it has to be recognised

that to achieve this will require some dependence on imported biomass feedstocks. The UK has considerable input material from organic waste, energy crops and manure to support the injection of biomethane into the existing gas infrastructure network. To exploit the full potential requires development of the supply chain. Furthermore, the forthcoming renewable heat incentive due to be in operation from April 2011 will need to create the right commercial environment in order for businesses to be willing to invest in this new market. E.ON is one of the leading operators of biomethane plants in Germany.

24. From a community carbon reduction perspective, we see renewable biomass or, biomethane based community CHP plants playing an important role. Local planning authorities have a key role to play in integrating and applying the right mix of low carbon technologies in a community context, through effective spatial planning has a key role to play. To provide the impetus to open up this market, we strongly believe that there is an important role for Government, through the public sector, providing the anchor thermal loads for these schemes. In turn this will bring confidence to the private sector developers to increasingly invest in this market.

25. *Marine*: The UK has substantial tidal and wave resources and marine technologies have potential long term benefits but are at an earlier stage of development than both onshore and offshore wind. E.ON is scheduled to deploy a Pelamis wave generation device in 2010 at the European Marine Energy Centre in Orkney. The Pelamis Wave Energy Converter is rated at 750kW and will be approximately 3.5m in diameter, 180 metres long and weighs in the region of 750 tonnes. This device has been designed and developed in the UK. Government and the marine generation industry needs to continue to work together in order to identify the challenges the industry faces and ensure the sector achieves parity with comparable technologies. This will happen through technology, delivery cost reduction and appropriate support mechanisms.

26. *CCS*: carbon capture and storage has a critical role to play in enabling fossil fuels to be used for energy supply while minimising CO₂ emissions. This is relevant to the UK in enabling the continued use of coal for power generation, reducing the UK's exposure to imported sources of gas, and is also vital to reducing CO₂ emissions globally where coal demand is expected to grow substantially. The main priority is to demonstrate the technology at scale and we welcome the Government's decision to support up to four demonstration projects announced at the time of the budget but we urgently require Government to provide further detail on the competition, how the projects will be assessed and funded as without this support mechanism CCS will not progress further. The UK can be at the forefront of this technology in terms of supporting commercialisation and the market needs to respond to this. The UK already has the skill base required for this and it presents an opportunity for the UK to show leadership.

27. *Nuclear*: nuclear is a large scale source of low carbon electricity that is economically attractive in a market environment of high fossil fuel prices and where a substantial carbon price is factored into energy prices. E.ON and its joint venture partner RWE intend to develop at least 6GW of new nuclear capacity in the UK, with the first station coming online at around the end of the next decade. It is instrumental that the UK Government continues to provide confidence to potential investors through delivery of its programme of facilitative actions, particularly the Generic Design Assessment process for prospective technologies and the Managing Radioactive Waste Safely programme. UK industry has some capability in a number of areas required for development of nuclear power stations such as civil engineering and component manufacturing, yet there is much opportunity for improving manufacturing capacity and increasing the number of suitably skilled workers if the UK is to take full advantage of the expected programme of investment.

28. *Electric vehicles*: transport is second only to heat in terms of total energy consumption and represents 36% of the total energy consumed in the UK (DUKES 2008) The vast majority of this is oil based and therefore has relatively high carbon emissions, requiring significant imports. Road transport alone (mainly light goods vehicles and passenger cars) represents 26% of the total energy consumed, the UK (DUKES 2008). In the short term there is the opportunity to pursue more efficient conventional petrol and diesel technologies (including the use of biofuel) whilst the first alternatively fuelled vehicles are brought to market. Electric vehicles and electric hybrids in particular have the potential to significantly decarbonise road transport, reduce total pollution and improve transport fuel security of supply. Even with the carbon intensity of today's generation grid mix, significant carbon savings can be made using electric vehicles. These benefits will be significantly enhanced as the generation mix is further decarbonised with renewable generation, nuclear power and coal with CCS. Transport energy can then be decarbonised at the point of generation and allow transport to be emission free at point of use. We welcome the recent Government announcement to support take-up of electric vehicles and continued support will be required to support adoption of such a beneficial technology.

Memorandum submitted by the North East Chamber of Commerce (NECC)

The UK, and more specifically the UK economy, has the potential to become a world leading green economy. The North East has already established itself as a leader in the fields of innovation and development of carbon abatement technologies and renewable power. NECC firmly believes that the region will go on to be central to the development of these technologies and to the growth of the UK economy as a whole.

Green jobs and the skills central to these jobs must be central to any UK Government's policy framework. The Government has recognised this, and Budget 2009 exemplified this, with over £1 billion offered in green energy and technology funds, as well as money earmarked for off shore wind, Carbon Capture and Storage (CCS), and other projects also.

NECC welcomes the opportunity to submit evidence to the Environmental Audit Committee (EAC). Our submission will cover the following points in more detail:

- *Regulation*: It is important that the regulatory regime does not hinder the growth of green industries and the industries peripheral to them.
- *Tax*: The fiscal policy framework must incentivise investment and take account of the infrastructure development that is needed in the North East.
- *Skills*: If green industries are to play a major part in Britain's economic future, now is the time to actively encourage young people to pick up the skills that will allow them to be the leaders of these industries in the future.

In so far as carbon abatement and energy efficiency are concerned, businesses and academic institutions in the North East are already leaders in their respective fields, and we have an important role to play in the development of these areas as an energy intensive region. The North East is not only home to a plethora of green businesses, it hosts a range of leading research centres, such as the New and Renewables Energy Centre (NaREC) in Blyth, the Centre for Process Innovation (CPI) in Teesside, and four regional Universities with various green research specialisations.

There must be investment in vital North East infrastructure projects that provide much needed capacity for businesses and unlock economic growth also. Ports, airports, the rail network, and road infrastructure all need to have sufficient connectivity and capacity to cater for the growth that is set to occur around our existing industrial sites. If there is not sufficient investment in this infrastructure stock it will be more difficult for the North East to consolidate the inward international investment and commitment to the area we have secured in recent years.

There must be a moratorium on new regulations during the recession. Both domestic and EU regulations are placing added burdens on businesses that are also facing added pressure from increasingly difficult trading conditions. Where regulations cannot be avoided, they must be clear and consistent.

NECC has been informed by members of instances where complying with the Renewables Obligation (RO) has had to come at the expense of plant efficiency. This resulted in energy being wasted rather than saved in order to comply with green legislation. Inconsistencies like this must be recognised and remedied if the Low Carbon Industrial Strategy is to be successful.

The Low Carbon Industrial Strategy (LCIS) is an outline of the objectives the Government has set with regards to achieving a low carbon economy. It is an important framework that sets out the areas where carbon can be saved and where the economy can benefit in the process. The fiscal and regulatory regime, as well as investment in skills and infrastructure, will determine how quickly and effectively this transformation is expedited.

The planning culture in the UK must become more favourable to development. There must be a fundamental shift from the culture of development control to a culture of encouraging development and presuming a project has economic benefits and it is thus worthwhile unless proven otherwise. Planning decisions on clean energy projects by local authorities must match UK objectives for environment and energy security.

Budget 2009 provided a welcome fiscal support for green industries, and NECC welcomed the introduction of a £1 billion support package for green businesses and research centres. The effectiveness of the LCIS will depend upon policies such as these, as well as a general acceptance that tax and spending in the UK must support enterprise, innovation, and growth. It is also crucial that the R&D tax credit system must continue to grow and support innovative and technology orientated businesses.

The North East already possesses a strong skills base in the manufacturing, engineering, construction and offshore industries. It is essential that the Government's approach to job creation/stimulation makes the most of those skills which can be easily transferred into green industries. There are already many examples of green businesses setting up in areas hit hard by the decline of traditional industries.

However, many of the traditional industries mentioned above have been subject to a decline in the pool of skilled and qualified young people over a number of years. Historically, large companies in the region, such as ICI, would over-recruit young apprentices; thereby providing skilled workers to similar businesses in the area. The decline of large manufacturers such as ICI has inevitably reduced this.

NECC supports the Government's commitment to expand the apprenticeship programme and recognises the significant gains made in the number of young apprentices since 1997. However, much more needs to be done to engage with green energy/environmental sector to build capacity and provide skilled workers for the future.

NECC is also concerned at the perceived lack of interest in those 14–19 Diplomas which will provide young people with a solid foundation for progressing into green industries. The Science, Engineering and Manufacturing Diplomas must continually adapt to the needs of employers and the future jobs market. This can only happen through committed engagement at all levels between schools, employers, local authorities and the Government. If green industries are to play a major part in Britain's economic future, now is the time to actively encourage young people to pick up the skills that will allow them to be successful in these industries in the future.

June 2009

Memorandum submitted by Greenpeace

1. Greenpeace is a global campaigning organisation which has as its main object the protection of the natural environment. Greenpeace has regional offices in 40 countries, 2.8 million supporters worldwide and around 150,000 in the UK. It is independent of governments and businesses, being funded entirely by individual subscriptions. Greenpeace was one of the first organisations to campaign for action to be taken to halt anthropogenic climate change. It has built up considerable expertise and has access to independent expertise on the links between energy use and climate change including scientific and economic analysis and the dynamics of energy and electricity markets.

2. A report from the Institute for Public Policy Research (ippr) and Greenpeace (attached) highlighted the huge potential for job creation from offshore wind. Despite ambitious plans to expand offshore wind farms over the next decade, only 700 people are currently employed in the sector and there is only one UK-based factory that manufactures parts for wind turbine parts. However, the IPPR identified that the expected major expansion of offshore wind to meet our legally binding target of 15% renewable energy by 2020 could create between 23,000 and 70,000 jobs in UK, with much of the variation being a function of Government policy and political support. It did however warn that without greater government support, the opportunity to create up to 70,000 long-term jobs in parts of the country where they are needed, and its associated export potential, will be lost.

3. In summary, the report concluded that to be a leading player and to secure green jobs in the UK we need to:

- secure the domestic market through ensuring sufficient financial support, straightforward planning and ensuring grid connections;
- engage in “industrial activism” in support of industry by providing tax and financial incentives, infrastructure like ports and test facilities, financial guarantees and preferences for local sourcing; and
- create a skills strategy following a proper analysis of the skills “gap” for the proposed expansion, which should include attracting a new workforce into the sector.

4. The starting point for a low carbon world has to be energy efficiency. In the current economic climate there is considerable opportunity to kick-start building efficiency. The report from Impetus Consulting (attached), commissioned by Greenpeace, shows that an annual £5 billion investment in domestic energy efficiency would create around 55,000 jobs directly with hundreds of thousands of jobs would be created indirectly. For example, the evidence suggests that 8–14 person-years of employment would be created in UK for every €1 million invested, with a further 9–40 person years created indirectly. And every year it would reduce emissions of carbon dioxide by about 1.6 million tonnes while also addressing fuel poverty. An investment of £5 billion per year would deliver 55,000 jobs. This is the level of investment required every year over the next 40 years to bring UK housing stock up to the level compatible with meeting our emissions reduction targets, as estimated by Oxford University for Federation of Master Builders.⁵⁶

5. To summarise, the advantages of energy efficiency investment are that:

- it creates jobs in the UK as efficiency work has to be done locally;
- low levels of employment in the building sector mean the market is not tight;
- jobs can be created relatively quickly;

⁵⁶ Oxford University Environmental Change Institute for Federation of Master Builders “Building a Greener Britain” July 2008. <http://www.fmb.org.uk/EasysiteWeb/getresource.axd?AssetID=2358&type=full&servicetype=attachment>

- reducing fuel bills of people and companies effectively provides a “fiscal stimulus” every year; and
- as the UK imports more of its gas it contributes positively to balance of payments.

6. Further, Britain has a unique potential role in the development of marine renewables such as wave and tidal stream with the jobs that would accompany an export industry in the UK. Currently we lead the world in both these technologies but notably the first commercial wave farm was sited in Portuguese waters. Our leadership in full commercialisation cannot be guaranteed at present and it is almost certain that a strategy for marine renewables generally would look similar to that outlined above for offshore wind. Although there are some encouraging signs, we are not yet delivering enough on both the skills and “activism” side.

22 May 2009

Memorandum submitted by eaga

EAGA—BACKGROUND

- eaga welcomes the opportunity to respond to the Environmental Audit Committee inquiry into Green jobs and skills.
- In order to put our comments into context, it may be helpful to briefly outline our role in the provision of services across the UK and Ireland.
- eaga is the largest provider of residential energy efficiency solutions in the UK; we are a co-owned business working for DECC, The Welsh Assembly Government and Department for Social Development in Northern Ireland and the Scottish Government. As well as our services to Westminster and devolved nations we have also worked closely with Utilities and Local Authorities in managing the delivery of energy efficiency programmes throughout the UK for the past 19 years. Since our establishment in 1990 we have grown considerably and now employ more than 4,500 Partners, the vast majority of whom are connected to our energy efficiency work.
- We have also pioneered the development of Benefit Entitlement Checks (BEC) throughout the UK. This is a telephone service that offers confidential advice to people regarding the benefits they claim and what further benefits they may be entitled to. Through its dedicated team, eaga has delivered more than 220,000 BECs to date.
- As well as our energy efficiency and social commitment through BEC, we are committed to helping the environment and combating climate change. eaga Renewables provide renewable energy solutions to private housing, specifically through the installation of solar thermal panels. This work is carried out in the private sector, both with private-funded work and public-funded work (notably the current Welsh Assembly Government pilot on renewable energy that forms part of HEES).
- For further information on eaga and our work across all sectors please visit www.eaga.com

The degree to which the Government’s long-term policy framework, including environmental regulations, tax changes or new market instruments, will encourage low-carbon investment and increase employment in environmental industries and their associated supply chains

1. eaga believe that these initiatives have the potential to increase employment in environmental industries however we have concerns that new initiatives have to be managed carefully in order to fulfil their potential. In particular, the move from EEC to CERT witnessed great dislocation for insulation companies as energy suppliers started to close down programmes 6 months or more ahead of the new programme. Therefore we would also recommend that in moving to any future programmes, it is important to ensure that industry capacity, and the extent to which initiatives integrate with existing programmes are assessed. Without effective action many thousands of jobs could be at risk if existing funding streams are closed down. This situation was also evident under the Low Carbon Building Programme Phase 2, which actually led to some companies going out of business because they were excluded from the scheme (eg Imagination Solar). In the case of solar thermal, the Government limited the supply of materials to just three companies thereby excluding the vast majority of solar panel manufacturers. Therefore eaga would recommend that procurement processes are open to all the relevant accredited installers within that sector and have an additional aim of ensuring the development of regional training and employment opportunities.

2. We believe that greater low carbon investment would be feasible if Government initiatives provided greater long term incentives and opportunities for investors. Despite the long-term policy framework, programmes such as the Low Carbon Building Programme are based on short term funding and in this case, the Low Carbon Building Programme was launched in 2006 and is due to cease in June 2009. Such short term commitments make it difficult for employers to invest particularly as the emergence of these new green technologies remains a relatively new risk for many.

Whether the changes in public spending intended to help tackle the recession will maximise employment opportunities in environmental industries

3. We believe that the changes in public spending such as the reduction in VAT are welcome; however these could be more ambitious in scope. For householders who are on welfare benefits and who are eligible for assistance through Government funded programmes such as Warm Front, VAT levels are 5%. However for those householders who are not on welfare benefit, the VAT level remains at 15%, which in many cases will act as a deterrent to investing in energy efficiency measures. We would suggest that VAT levels for all householders wanting to invest in energy efficiency measures or renewable technologies should be set at 5%. Our experience is that this would help stimulate the “able to pay” market and as such encourage investment and employment in this area.

4. We also agree with the findings of the Environment Audit Committee Report into the Pre Budget Report, 2008 and in particular the recommendation that—“Retrofitting existing buildings with energy efficiency and renewable generation measures would be labour-intensive and fast to implement. They could sustain employment in local communities throughout the country, and could develop skills and supply chains required in what will be a long-term growth sector. We will not achieve our carbon goals without significant action in retrofitting housing, and ensuring sustained activity in this area would cut emissions, reduce fuel poverty, and enhance the UK’s energy security.”⁵⁷ One way to encourage such retrofitting would be to examine VAT levels.

The economic and social benefits of planned green investments and the extent to which the changes in spending will contribute to sustainable development and environmental protection

5. We believe that the economic and social benefits of planned green investments and the extent to which the changes in spending will contribute to sustainable development and environmental protection cannot be under-estimated especially in relation to sustainable development and economic growth in “poorer communities.” From experience we know the impact that energy efficiency services can have on these communities, and the vulnerable householders and families that reside within them. Recent research funded by the independent eaga Charitable Trust has shown that energy efficiency and fuel poverty interventions on a local level not only assist those most vulnerable households with cheaper fuel bills and warmer healthier homes, but also help the economic growth and regeneration of these communities—studies in the North East of England indicating a gross value added to the economy of 82 pence per £1 spent in terms of employment, disposable income back into the local economy etc.⁵⁸ What this research clearly demonstrates is that fuel poverty/energy efficiency intervention schemes have a win/win—helping the most vulnerable in society whilst regenerating local economies.

The nature of the jobs that might be created in green industries as a result of the green fiscal stimulus

6. We agree with the 2009 Treasury document—“*Building a Low Carbon Recovery*”, which states that “Saving energy is the easiest way to cut carbon emissions, saving households and businesses money” and that “Together, these measures will support employment, and save 380,000 tCO₂ and around £60 million in energy bills each year.”⁵⁹ Therefore eaga believes that the nature of these jobs will be within the retrofit energy efficiency sector—as this has a direct impact upon both the environment and the householder income, which is important during the current economic climate. To ensure the long term sustainability of these jobs there has to be investment in the skills base of the UK. Our belief that investment in the skills base is fundamental is reflected in the recent launch of our eaga Apprentice Scheme which is aimed at ensuring that there are sufficiently trained heating engineers, renewable technology engineers and insulation installers for the future.

7. In this regard, eaga welcomes the support which the Regional Development Agency, One North East has provided in relation to green industries, as part of its regional policy framework. One North East has demonstrated a real commitment to the development of green industries and eaga has experienced this first hand through their financial support for the development of the Solar Thermal School Demonstration Unit, One North East. This support has been also evident in relation to the Community Energy Solutions initiative, which is funded by One North East and Yorkshire Forward.

The skills base for the UK environmental industries, and the effectiveness of Government policies to improve and enlarge it

8. As referenced earlier, eaga have established our own Apprentice scheme which we believe will help improve the skills base in the energy sector; however more needs to be done. We welcome other initiatives in this area such as the Jobcentre Plus Energy Efficiency Employment initiative however we have concerns that this initiative does not offer enough depth in training, and will only assist with funding for employers once the individual has been recruited. During these times of economic uncertainty, this serves as a barrier to the employer and also the individual wishing to develop their skills. These barriers have knock-on

⁵⁷ <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmenvaud/202/20202.htm>

⁵⁸ Modeling the North East Economy: The Impact of Fuel Poverty Intervention on Economic Activity in the North East of England” Lynch, D and Ritchie, N 2008.

⁵⁹ http://www.hm-treasury.gov.uk/d/Budget2009/bud09_chapter7_193.pdf

consequences for the energy sector as a whole. Therefore eaga would recommend that the funding of this and other such initiatives are reviewed by DIUS, DWP and BERR in order to remove these barriers and ease the deficit in measures and skills.

9. We believe that the priority has to be ensuring that the strategy for skills is effective and timely rather than being led—eg the Feed in Tariff and Renewable Heat Initiatives will increase investment and jobs in the UK however this has to be managed. It is important that to maximise the benefits, steps are taken to align skills training and business investment to these initiatives otherwise we end up in a situation where demand outweighs the response, an example of this is the speed of response from Job Centre Plus on the provision of insulation training—essentially Job Centre Plus was behind the curve.

22 May 2009

Memorandum submitted by ConstructionSkills

INTRODUCTION

ConstructionSkills is the Sector Skills Council for the construction industry—a partnership between CITB-ConstructionSkills, the Construction Industry Council and CITB Northern Ireland. It is UK-wide and represents the whole industry from professional consultancies to major contractors and SMEs. Established as a Sector Skills Council in 2003, ConstructionSkills is working to deliver a safe, professional and fully qualified construction workforce.

ConstructionSkills provides assistance in all aspects of recruiting, training and qualifying the construction workforce across the UK. It works with partners in industry and government to improve the competitiveness of the industry as a whole, representing industry before Government to ensure it has fit-for-purpose qualifications, training and funding.

CITB-ConstructionSkills is the construction industry’s Industry Training Board and has levy raising powers. It helps the industry in England, Scotland and Wales in all aspects of recruiting, training and qualifying the construction workforce, and supports this by providing CITB-ConstructionSkills Grant.

ConstructionSkills has a leading role in:

- Providing sector skills intelligence.
- Defining the skills strategy for the sector, including a sector qualifications strategy.
- Increasing employer engagement in skills and training.
- Providing skills and training brokerage.
- Facilitating and leading skills and training delivery.

GENERAL

- The construction industry makes a major contribution in helping the UK and the economy to achieve a more sustainable future—by ensuring that what is built, how it is built and where, makes best use of sustainable technologies and low and zero carbon. (paragraph 1.3)

DEVELOPING THE SKILLS BASE

- To increase employment opportunities, while at the same time increasing productivity, there is a need for micro-businesses, which constitute the vast majority in the construction sector, to be able to take advantage of the growing market around Government’s “green” policy and investment. Annual spend has been projected to be between £3.5–£6 billion per annum—a sum which would provide significant opportunities to a wide range of companies and could create a number of new jobs. (paragraph 4.1)
- In order to establish consistency, quality and build market confidence, the underlying skills and qualification structure needs to be examined—from entry through to high level—to ensure that the skills are backed by qualifications and, where necessary, accreditation and/or certification. We believe it is critical that there is industry involvement in this process. (paragraphs 4.2–4.3)
- It is critical that businesses, across the construction and built environment supply chain, are supported, as appropriate, in relation to people development—this support may be in the form of advice, training and the time and financial resources required. The built environment Sector Skills Councils are well placed to support this. (paragrph 4.5)
- In order to sustain the developing “green” market, an “education” programme aimed at the total population is needed, to increase understanding of the issues and of the benefits of environmental change and develop continued “effective demand”. (paragraph 4.6)

- Currently issues relating to skills, and environmental skills in particular, are being handled by up to seven different government departments. A strategic approach to meeting skills challenges is needed, with Government and industry working together across the emerging environment opportunities in the construction and built environment sectors. (paragraph 4.8)
- In order to maximise opportunities the construction industry will need to develop not only its technical capability but to interface with other sectors, for example energy producers, and their supply chains. This could mean a significant shift in the skills and competence of the existing industry as part of a major process of innovation. (paragraph 4.10)
- Application of the range of “green” technologies will require the industry to advise on and install appropriate solutions across a range of markets. Failure of these product innovations, due to them being installed in inappropriate situations or a lack of expertise, could result in a downturn across the whole sector. (paragraph 4.11)
- SSCs will also need to play a key part in ensuring that businesses can access high quality diagnostic services to help them create their own strategies for meeting their needs for sustainability skills. This work is already in hand. (paragraph 4.12)
- Construction and the built environment is a grouping of many sub-sectors. The key construction and built environment sector skills councils agreed in 2007–08 that the best way forward in the development of the requisite skills is to ensure that there is cross sector working. The Built Environment Skills Alliance (BESA), which is an alliance of Sector Skills Councils, could lend support here. (paragraph 4.14)
- When the 14–19 budget, currently held by the Learning and Skills Council, moves to local authorities it is essential that LAs work with SCCs to maximise both employment and training opportunities. (paragraph 4.18)
- The £100 million extra to improve the insulation for 150,000 homes in the social sector is likely to be the province of SMEs. There is a need to ensure that those tasked with this activity understand the skills issues around ensuring airflow and the variety of building that they may come across. (paragraph 4.19)
- There is an opportunity to apply the multiplier effect here. Many more jobs could be created in the private market if these often small and micro businesses amass the skills to be credible “energy advisors”. This is an area where there may be an identifiable need for some form of development resource. (paragraph 4.20)
- It is reassuring that Government has recognized, in BERR’s *Low Carbon Strategy: an Industry Vision*, the need for a new industrial activism that brings together different strands of government policy to ensure low carbon companies have access to the infrastructure, skilled workers, research and development and investment opportunities they need. ConstructionSkills believes this is the way to achieve both job creation and low carbon ambitions. (paragraphs 4.21–4.23)

1. OVERVIEW

1.1 ConstructionSkills believes that the “green” incentives in the 2009 Budget can provide a positive stimulus for carbon reduction. As a Sector Skills Council we are acutely aware that appropriate skills and capacity will be required to achieve this. Our response specifically focuses on the skills related items listed within the Inquiry document. We have interpreted “UK environmental industries” in the broadest sense and related this to the “nature of the jobs that might be created in green industries”.

1.2 47% of all UK carbon emissions are as a result of the activities of the construction industry. 27% of all emissions arise from the existing 26 million homes, 7% of all emissions are from existing offices and 13% of all emissions are as a result of the manufacturing of construction materials and the construction process. The construction industry is also the single largest producer of waste in the UK. It is worth noting that between 1990 and 2005 carbon emissions reduced in the existing housing stock by just 4% despite the significant investment in cavity wall and loft insulation over that period.

1.3 The construction industry makes a major contribution in helping the UK and the economy to achieve a more sustainable future—by ensuring that what is built, how it is built and where, makes best use of sustainable technologies and low and zero carbon.

1.4 For clarity, a summary of the construction industry and the types of activities it carries out, in relation to general construction and environmental impact, is noted in Appendix A.

2. CONSTRUCTIONSKILLS’ RESPONSES

Clarifying the terminology

2.1 Wikipedia defines green employment as “a worker who is employed in the environmental sectors of the economy. Environmental green-collar workers (or Green Jobs) satisfy the demand for green development. Generally, they implement environmentally conscious design, policy and technology to improve conservation and sustainability”.

2.2 Whilst this is one definition it is clear that the terms “green jobs” and “green industries” create some confusion within the business community. As with “environmental skills” and environmental industries’ this is open to misinterpretation, as a number of relevant jobs already exist in the construction industry in areas such as insulation. In order to maximise employment and employer engagement it will be necessary to “translate” these terms into language that business understands—Sector Skills Councils have a part to play here.

2.3 Green industries can be seen as those where the “green” element is the sector’s main area of operation, rather than a sub-sector of wider business activity. Increasingly, in parts of the construction sector, this is becoming part of the way “we do business”.

2.4 It is also important that the Government/Industry Sustainable Construction Strategy moves to a position, over time, where the word “Sustainable” is no longer needed as all construction will be conducted in this way.

3. INQUIRY ISSUE: THE NATURE OF THE JOBS THAT MIGHT BE CREATED IN GREEN INDUSTRIES AS A RESULT OF THE GREEN FISCAL STIMULUS

3.1 As BERR’s *Low Carbon Strategy: an Industry Vision* points out, seemingly unconnected sectors such as groundwork can benefit from the move to a low carbon economy. For example, one firm switched from advising on bore holes to take “advantage of a new low carbon opportunity to become specialists in the installation of Ground Source Heat Pumps”. Such firms could be the tip of the iceberg.

3.2 What is certain is that the nature of the jobs that might be created in green industries as a result of the “green fiscal stimulus” will be part of a dynamic process of change, which needs to be understood more clearly.

4. INQUIRY ISSUE: THE SKILLS BASE FOR THE UK ENVIRONMENTAL INDUSTRIES, AND THE EFFECTIVENESS OF GOVERNMENT POLICIES TO IMPROVE AND ENLARGE IT

4.1 To deliver the low carbon future we need to avoid relying solely on “leading edge” companies. To increase employment opportunities, while at the same time increasing productivity, there is a need for micro-businesses, which constitute the vast majority in the construction sector, to be able to take advantage of the growing market around Government’s “green” policy and investment. Annual spend has been projected to be between £3.5–£6 billion per annum—a sum which would provide significant opportunities to a wide range of companies and could create a number of new jobs.

4.2 In order to establish consistency, quality and build market confidence, the underlying skills and qualification structure needs to be examined—from entry through to high level—to ensure that the skills are backed by qualifications and, where necessary, accreditation and/or certification.

4.3 DECC’s Heat and Energy Saving Strategy consultation recognises the need to build capacity and skills to provide the new approaches to energy. We believe it is critical that there is industry involvement in this process.

4.4 New jobs created in environmental markets will not all require totally new skills, but will often be an addition to existing workers skill-sets. As this market develops it is likely that a significant number of the existing workforce will move into specialist environmental niches. This transfer would “free up” jobs in the traditional sector and help to create wider opportunities for new entrants to the sector.

4.5 As markets develop, companies—and especially small and micro businesses—will need to gain the leadership and entrepreneurial confidence and competence to discuss green issues with clients such as individual homeowners. It is critical that businesses, across the construction and built environment supply chain, are supported, as appropriate, in relation to people development—this support may be in the form of advice, training and the time and financial resources required. The built environment Sector Skills Councils are well placed to support this.

4.6 In order to sustain the developing “green” market, an “education” programme aimed at the total population is needed, to increase understanding of the issues and of the benefits of environmental change and to develop continued “effective demand”.

4.7 Without the “skills activism” proactive approach to skills investment, the skills to deal with what could be seen as a slowly evolving market may not be developed. Employers, governmental and individual skills investment decisions are tied to a foreseeable need for these skills. A sustained policy direction is essential, if employers and training providers are to invest in these opportunities. If the recession is seen to turn back Government’s ambition in the area of sustainable development and communities, this could severely dent companies’ plans and ambitions.

4.8 Currently, issues relating to skills, and environmental skills in particular, are being handled by up to seven different government departments. A strategic approach to meeting skills challenges is needed, with Government and industry working together across the emerging environment opportunities in the construction and built environment sectors. Co-ordination is needed across Government departments and greater consistency in policy—linked, where appropriate, to elements of public funding for people development to complement that invested by companies and the sector as a whole.

Innovation

4.9 At a DIUS co-ordinated workshop in June 2008 at Windsor Castle on the “Skills for Sustainability” it was noted that: “The more businesses come to see skills and innovation and sustainability as one single cluster of issues, the easier it will be for them to embrace the sustainability agenda—not as an add-on but as a central part of their whole upskilling effort”.

4.10 In order to maximise opportunities the construction industry will need to develop not only its technical capability but to interface with other sectors, for example energy producers, and their supply chains. This could mean a significant shift in the skills and competence of the existing industry as part of a major process of innovation.

4.11 We must avoid the temptation to create jobs at the expense of innovation and productivity improvements in the burgeoning markets, as this can be counter productive in the medium to longer term. Application of the range of “green” technologies will require the industry to advise on and install appropriate solutions across a range of markets. Failure of these product innovations, due to them being installed in inappropriate situations or a lack of expertise, could result in a downturn across the whole sector, as happened in the UK in the 1970s with timber frame housing.

4.12 The Windsor workshop found that “SSCs will also need to play a key part in ensuring that businesses can access high quality diagnostic services to help them create their own strategies for meeting their needs for sustainability skills”. This work is already in hand as noted above.

4.13 In April 2009, ConstructionSkills—recognising the need for innovation, skills and sustainability to be part of an iterative continuum—set up its Future Skills Unit which will seek to provide the best advice, support and encouragement for industry as ‘sustainability’ moves incrementally into the industry mainstream.

Encouraging collaboration—the role of the Sector Skills Councils

4.14 Construction and the built environment is often seen as a single sector, in fact it is a grouping of many, often loosely related, sub-sectors. This means the market opportunities stemming from “green” investment, be it public or private, will vary. The key construction and built environment Sector Skills Councils agreed in 2007–08 that the best way forward in the development of the requisite skills is to ensure that there is cross sector working. The Built Environment Skills Alliance (BESA), which is an alliance of Sector Skills Councils, could lend support here.

4.15 The range of renewable energy sources and technologies is diverse and complex spanning a number of Sector Skills Councils and sector bodies. Recognising the need for collaborative working, the respective Chief Executives⁶⁰ have agreed a shared commitment to create a Renewable Energy Skills Strategy. Working in this way fully utilises the sector specific knowledge and experience, whilst at the same time providing a single skills interface for environmental issues.

4.16 This skills strategy will “provide a better understanding of the future skills requirements, the increased training capacity required and the nature and timescales of job opportunities in the environmental sector, whilst recognising the specific nature of some of the job requirements in each of the sectors”.

4.17 A response to the Inquiry on behalf of this group has been submitted and will not be covered in detail here.

Working with Local Authorities

4.18 The fiscal stimulus gives around £100 million for local authorities to deliver housing to “higher energy efficiency standards”. Whilst what the standards will be has not defined, the LGA report *Creating green jobs: developing local low-carbon economies* states that local authorities “want to work with employers and employment and skills providers to ensure that skills gaps are identified and new training opportunities provided including public sector apprenticeships”. When the 14–19 budget, currently held by the Learning and Skills Council, moves to local authorities it is essential that they work with SCCs to maximise both employment and training opportunities.

Improving domestic scale insulation

4.19 The £100 million extra to improve the insulation for 150,000 homes in the social sector is likely to be the province of smaller firms in the construction sector. There is a need to ensure that those tasked with this activity understand the skills issues around ensuring airflow and the variety of building that they may come across.

4.20 However there is an opportunity to apply the multiplier effect here. Many more jobs could be created in the private market if these, often small and micro business amass the skills to be credible “energy advisors”. This is an area where there may be a identifiable need for some form of development resource.

⁶⁰ AssetSkills, Cogent, ConstructionSkills, ECITB, EU Skills, Lantra, SEMTA and SummitSkills.

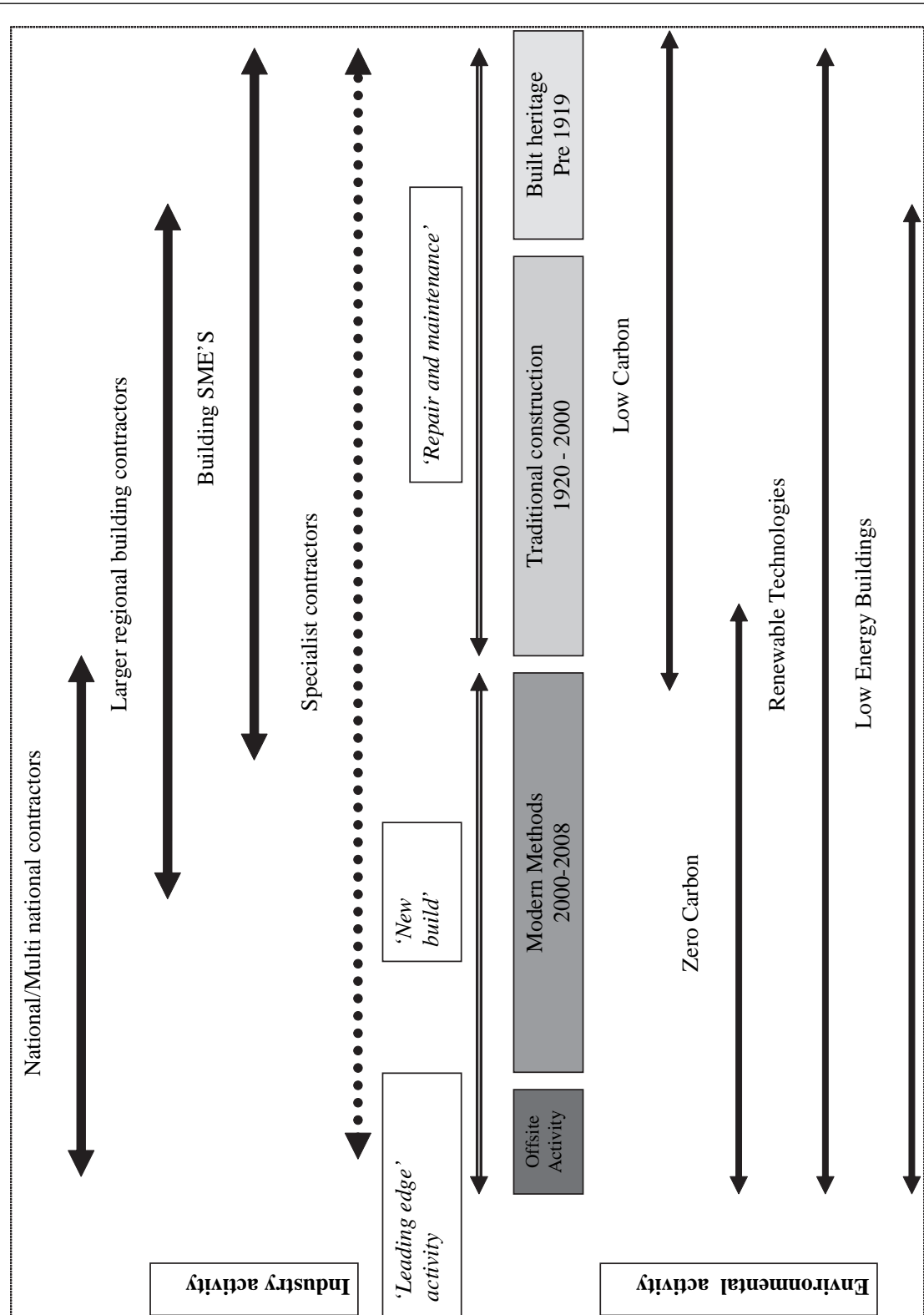
Supporting low carbon companies

4.21 It is reassuring that Government has recognised in BERR's *Low Carbon Strategy: an Industry Vision* that: "Despite the clear economic case for undertaking energy efficiency measures, lack of information and lack of finance—especially in the current economic climate—can prevent businesses from taking them up". These financial and information issues need to be addressed.

4.22 As mentioned above, the fiscal stimulus offers the potential of creating new jobs and at the same time upskilling many others. There is a potential multiplier in the construction and built environment sector, and this requires many more micro firms to develop.

4.23 The BERR report also states: "we must also think about how we best equip UK businesses and workers to compete for these opportunities. We need a new industrial activism that brings together different strands of government policy to ensure low carbon companies have access to the infrastructure, skilled workers, research and development and investment opportunities they need". ConstructionSkills believes this is the way to achieve both job creation and low carbon ambitions.

23 May 2009



Memorandum submitted by Kingspan Insulated Panels (GJS20)

SUMMARY

- Research from Kingspan shows that one of the biggest opportunities for carbon reduction and job creation in the construction sector can come from refurbishing existing non-domestic buildings.
- A large-scale coordinated programme of refurbishment would bring the threefold benefits of:
 - Creation or safeguarding of up to 75,000 long-term construction sector jobs.

- Annual carbon savings of 4.74Mt between 2010 and 2022.
- Over £40 billion of fuel cost savings by 2022.
- The biggest barrier to delivering these benefits is financing. Schemes such as Salix, for the public sector, provide guaranteed loans to organisations for investment in energy efficiency, which are then paid back by the cost savings delivered.
- The Budget 2009 gave a welcome injection of cash to these schemes, but the money is nowhere near enough to deliver the potential job, carbon and fuel cost benefits that exist.
- The jobs which would be created by such a programme would be mainly in the construction industry, one of the most hard-hit in the current recession, and a sector where some of the most important “green skills” currently exist.

EMISSIONS FROM THE BUILDING SECTOR—THE SCALE OF THE PROBLEM

1. Kingspan Insulated Panels is the world’s largest manufacturer of insulated panels. Based in North Wales, it employs over 400 people in the UK and operates in 18 countries around the globe. It is part of the wider Kingspan Group, a major construction products company based in Ireland with an annual turnover in 2008 of €1.67 billion. Other divisions of Kingspan include Off-site sustainable housing, industrial insulation and environmental renewable energy.

2. Kingspan Insulated Panels is heavily involved in the cladding of new and existing buildings around the UK, helping to provide greater energy efficiency, and therefore lower carbon emissions and fuel costs. As a result of this work, Kingspan commissioned the independent environmental consultancy Caleb Management Services to produce a detailed report into the contribution which refurbishing existing non-domestic buildings can make to reducing carbon emissions, fuel costs and creating construction sector jobs (from hereon referred to as “The Caleb research”).

3. Much of the focus of the Government’s efforts to reduce emissions from the building sector has been in the field of new-build (eg zero carbon targets for both domestic and non-domestic buildings by 2016 and 2019 respectively). However, given that new buildings each year typically account for only 1% of the building stock, it is clear that this emphasis is not focusing on the area of greatest need and opportunity.

4. Caleb’s research showed that existing non-domestic buildings account for over 100Mt of carbon emissions each year, equal to 20% of the UK’s total carbon emissions. Given the Government’s hugely ambitious target to reduce carbon emissions by 80% by 2050, it is clear that in order to have any chance of meeting this target, non-domestic emissions need to be tackled urgently.

THE SCALE OF THE OPPORTUNITY

5. The Caleb research highlighted three main areas of benefits which could be realised through a programme of refurbishment (through upgrading existing non-domestic buildings to a minimum Energy Performance Certificate C rating in a phased programme between 2010 and 2022). These were:

- (a) Creation or safeguarding of up to 75,000 long-term construction sector jobs.
- (b) Annual carbon savings of 4.74Mt.
- (c) Annual energy cost savings of £5.65 billion, equivalent to over £40 billion by 2022.

6. This approach to improving energy efficiency, we believe, represents one of the easiest, quickest, cheapest and most effective means of reducing carbon emissions from buildings, and thus helping to meet the Government’s targets in this area.

BARRIERS TO TAKE-UP

7. Despite the obvious benefits available through energy efficient refurbishment, the evidence shows that opportunities are being missed. The biggest barrier to take-up by businesses and the public sector found by the Caleb research was access to sufficient financing.

8. £27 billion is already spent annually by the UK on commercial and public refurbishment, but little emphasis in this is given to improving energy efficiency. There are perceptions, wrong in our experience, that investment in energy efficiency takes many years to generate payback from the capital investment involved, which thus puts organisations off investing in refurbishment.

POSSIBLE SOLUTIONS

9. Within the public sector, there are a few good examples of provision of funding for organisations wanting to invest in energy efficiency. The Salix Finance scheme,⁶¹ which has been operating since 2004, provides loans to public sector organisations to improve energy efficiency, with the loans paid back through the cost savings accrued. Salix was given an extra £65 million in the Budget 2009, but this represents only a tiny fraction of what could be achieved. The Budget 2009 also gave the Carbon Trust £100 million to provide in loans to SMEs for them to invest in energy efficiency.

⁶¹ <http://www.salixfinance.co.uk/home.html>

NATURE OF EMPLOYMENT POSSIBILITIES THROUGH ENERGY EFFICIENCY

10. Programmes to reduce carbon emissions from existing buildings are job creation engines. With Government assistance, it would be possible to establish an effective programme to give fresh impetus to the labour market. Research from Germany indicates that for every €1 billion invested in energy efficiency, around 25,000 jobs are created or safeguarded in the construction industry and its supply chain every year.⁶²

11. Improving energy efficiency in buildings is a particularly effective way to stimulate employment in the places where it is needed most, and to employ people who have the greatest trouble in finding jobs. In terms of direct employment, energy efficiency in buildings is a labour-intensive sector, engaging many small, geographically dispersed installation companies. Furthermore, the resulting lower fuel bills mean more money is available to spend on non-energy items (and the labour intensity in sectors stimulated by general consumption exceeds that in the energy supply sector).

12. Thus indirect employment is stimulated by the energy savings, for years after the work is completed. Ultimately, energy efficiency contributes to economic efficiency and growth, which creates more wealth and employment opportunities.

13. To use the German example again, 12 energy savings programmes were monitored, all of which were designed to reduce energy consumption. The employment benefit between 2006 and 2029 of the programmes was calculated as 300,000 person years, mainly in the building construction and refurbishment sectors. The programmes have a net positive impact of about 1 million person years to 2030, with a maximum of 75,000 person years in 2015. The development of net employment will remain positive to 2030, even after the expiry of projects, because of reduced energy costs, with saved revenue spent elsewhere in the economy.⁶³

SKILLS BASE FOR THE ENVIRONMENTAL CONSTRUCTION INDUSTRY IN THE UK

14. There is good provision of training for contractors involved in refurbishment. Skill levels required for operatives involved directly in applying new thermal insulation systems are relatively low and training is available via some trade associations and their members. Trade associations such as EPIC (Engineered Panels in Construction), NFRC (National Federation of Roofing Contractors), SPRA (Single Ply Roofing Association) and others should be contacted for training advice which is available either directly or through their members. Companies such as Kingspan Panels provide training for contractors at our Holywell site and in 2008 we trained over 600 contractor personnel on the installation of our systems. Kingspan also provides on-site training through our Field Service Engineering Team.

SYNERGY WITH “LOW CARBON INDUSTRIAL STRATEGY”

15. Rolling out access to funding for refurbishing existing non-domestic buildings would very much be in accordance with the Government’s Low Carbon Industrial Strategy, published in March 2009. The strategy states:

- (i) “A national shift to greater resource efficiency would also support the creation of tens of thousands of jobs for businesses in this sector.”⁶⁴

16. The Strategy also backs the findings of the Caleb research in identifying finance as the main barrier to take-up of energy efficiency measures:

- (i) “Despite the clear economic case for undertaking energy efficiency measures, lack of information and lack of finance, especially in the current economic climate, can prevent businesses from taking them up.
- (ii) “Government has a clear role in removing these barriers and already provides advice and low-cost finance.”

17. As already referenced, Salix and the Carbon Trust do already provide low-cost finance, but in quantities far removed from those needed to fully realise the employment, emission and fuel saving benefits possible.

11 June 2009

Memorandum submitted by the Renewable Energy Association (REA)

SUMMARY

The renewables industry welcomes this inquiry and urges the Committee to underline the distinct benefits of investment in renewable energy in terms of energy security and climate change mitigation, in addition to employment and direct economic opportunities. The exceptionally productive benefits of renewables investment at this time were recognised by Lord Stern in recommendations to the G20 (and by a WWF

⁶² Data from German Federal Minister for Transport, Building and Urban Affairs [*more specific reference needed*].

⁶³ Impact on activity & employment of Climate Change and GHG mitigation policies in the enlarged Europe: Final Country Report—Germany; Wuppertal Institute for Climate, Environment & Energy; 2006.

⁶⁴ Low Carbon Industrial Strategy, BERR, March 2009, page 4.

report). The net economic benefits of investment in renewable energy growth (ignoring climate and security of supply benefits) have recently been set out by EC DG Energy & Transport. Broadly the REA is satisfied with the direction of the UK policy framework, although details need to be set out and, key support mechanisms urgently expedited (as well as access to project finance). Concerns remain however, on the strategic direction for enabling infrastructure which requires substantial investment. There is no doubt, drawing on solid continental experience, that renewables offer a high-value industry that the UK jobs market—at all skill levels—could benefit from significantly in future. REA welcomes the Low Carbon Industrial Strategy and the new spirit of industrial activism. However, the strategy needs to be expedited and to properly recognise the exceptional benefits (and sometimes the great complexity) of successful renewables investment and commercialisation. The UK's serious engineering skills shortages must be addressed. Above all, policy needs to be clear, consistent and long-term and recognise the role of all forms of renewable energy.

1. The Renewable Energy Association (REA) warmly welcomes this important inquiry. Investment in renewable energy has an important role to play in tackling the recession. In this context we set out our Green New Deal asks for the Low Carbon Summit earlier in the year. We believe the role of renewable energy in particular needs to be given specific emphasis, given the role of renewable energy not only in offering immediate employment and high-value training opportunities, as well as increasing economic benefits, but because of its vital role in safeguarding national energy security and tackling climate change.

2. Investment in renewable energy is an active investment that works to displace future import costs and increase energy security. The REA commissioned a study from Delta EE that showed that the UK's proposed push for energy efficiency and renewables could result in a trade balance benefit for the UK economy of up to £12.6 billion per annum by 2020 (assuming modest increases in fossil fuel prices). The report's findings add to the jobs and export benefits already identified by eg Stern, UN, Green New Deal group etc. and contributed to the burgeoning economic case for investing in renewables and energy efficiency in the UK budget.

3. The report copied (more modestly) a comprehensive cost/benefit study carried out by the German Government on their green energy programme in 2007, showing net savings for industry and households of 5 billion Euros by 2020, as fossil fuel imports drop. No such study has been carried out by the UK government prompting the Renewable Energy Association to commission the energy balance of trade report from Delta EE. The analysis of the German sustainable energy measures showed that by 2020 the avoided imports saved €36 billion, against an implementation cost of €31 billion leading to savings for German industry and consumers. The German analysis assumed very conservative oil and gas prices of just \$65 per barrel. The German programme aims to cut CO₂ by 40% and increase renewable energy to 20% of total energy by 2020. The findings were published by the Federal Ministry for the Environment, Nature Conservation and Nuclear safety. It was calculated therefore that each tonne of CO₂ emissions avoided represented a €26 saving to their economy. Renewable energy made the biggest saving to CO₂ cuts. See "Climate protection programme will lead to savings of five billion euro" published at: http://www.bmu.de/english/current_press_releases/pm/40276.php

4. The UK is anticipated to be reliant on imports for 80% of its gas requirements by 2020 at a time when Europe will be dependent on imports for 70% of its gas needs. IEA are increasingly warning of coming fossil fuel "energy crunches", which have serious implications for the future cost of energy and UK competitiveness—they do not consider the impact of the global recession to be sufficient to revise these warnings. Fossil fuel instability over the past year has caused concerns to business and consumers—this instability is likely to increase as the UK becomes increasingly dependent on imports with potentially serious implications for future UK security and prosperity. These considerations need to be weighed alongside the study set out in 5) and 6) below.

5. The net economic benefit of investment in renewable energy across Europe has recently been set out by the EC DG Energy & Transport; http://ec.europa.eu/energy/renewables/studies/renewables_en.htm. Please note that this study on the macroeconomic effects of investment in renewable energy excludes the economic benefits associated with climate change mitigation and increased security of supply. Purely on direct economy benefits alone the study demonstrates that investment in renewable energy leads to a net increase in employment and GDP. In 2005 1.4 million people were employed across Europe in renewable energy. If the EU meets its 20% RE target by 2020 the study estimates the sector will employ 2.8 million people and raise GDP by 0.24%. The net effect on jobs—taking on board how investment in RE affects the economy as a whole—is 410,000 *additional* jobs and added value to the economy. The study says that if climate change mitigation and security of supply benefits had been included, "the economic benefits of RES would probably be even higher."

6. This EC study says that stronger policies are needed to reap the maximum economic benefit from RE. Biomass and onshore wind are expected to generate the most near-term employment and economic growth. However, investment in pv, offshore wind, solar thermal and 2nd generation biofuels are also needed to achieve the 2020 RES target and increase employment and GDP benefits in the mid-term. The report says; "policies promoting technological innovation in RES are therefore essential to strengthen the first mover advantage of Europe's RES industries."

7. REA was particularly impressed with Lord Stern's "7-point plan" for the G20. Stern recognised that renewables are the ultimate economic and social multi-taskers, delivering jobs, employment, growth, innovation while locking-in future energy and climate security. That is why renewables were given the

maximum investment ratings by Stern and also in the Ecofys report on green stimulus for WWF. Stern's comments in his report for the G20 Summit included: "Green recovery measures promise to be superior to deficit-financed spending on consumption from a public finance perspective, because tax-payers implicitly receive compensation for higher future taxes in the form of decreased expenses on energy and lower costs of abating GHG emissions." He also warned; "If firms supplying [sustainable] technologies were to collapse in the current crisis, society would not only lose employment and growth opportunities, but also stocks of technology, human capital and organisations that are difficult and time-consuming to rebuild".

8. Governments around the world have been injecting \$100 million into their renewables sectors in response to the "triple crunch" (recession, climate and energy security). The UK industry must receive sufficiently similar levels of investment in order to be able to continue to compete internationally and ensure the UK economy and jobs market can take a stake in the growing international sector.

9. Like many OECD countries, major investments are urgently needed in the UK's ageing generation and network infrastructure and the UK cannot afford to "lock-in" to outdated long-life assets. Thus the UK actually faces a "quadruple crunch", considering that in addition to economic, climate and energy security woes, the UK also faces the pressure of infrastructure replacement. Given this expenditure must be incurred in any event, it presents an opportunity to move towards a low-carbon system in an economically efficient manner. It is therefore vital that infrastructure redevelopment is guided by an explicitly low-carbon strategy—see our concerns under 21) below.

10. Improving the UK's infrastructure will broadly improve UK competitiveness by increasing efficiency, as advocated by Dieter Helm.

11. The REA was satisfied with the main provisions in the budget, in the circumstances. However, in terms of public money, there was a continuation broadly of existing levels of spending for practical renewables programmes, rather than any increase in response to offering green stimulus. We also require further detail on several promised measures.

12. The availability of project finance is now a major issue for the industry for all types of technology and for projects at all scales. We are still awaiting a meeting with the Treasury to discuss the £4 billion apparently secured for loan finance for renewables projects from the European Investment Bank. The situation is urgent for many of our members. We do not understand, particularly given the huge leverage the UK government now has over major banks, why the access to loan finance problem cannot be dealt with quickly and effectively in the UK.

13. We are unclear what proportion of the £405 million allocated from the Strategic Investment Funds and Environmental Transformation Funds will be made available for renewable technologies in particular. Lumping renewables together with "low carbon industries", important as they all are, fails to identify the exceptional benefit of investments in renewable energy and the urgent need to tackle climate change and energy security. When money is scarce it is vital that what money is available is spent to optimise public benefit.

14. Our members were particularly dissatisfied with the delay on a comprehensive support framework for renewable heat which we had hoped would be addressed in the Budget. REA had advocated for the Heat and Gas Tariff to be expedited to be brought in alongside Power Tariffs in 2010.

15. If policy is to be effective it must be clear, consistent and long-term. This is vital, both to encourage UK-based companies to invest in renewables and to attract and retain international investment.

16. Transport biofuels have been particularly badly hit by the Government's policy changes in 2008. The Renewable Transport Fuel Obligation came into force in April 2008 and less than three months later, with the publication of the Gallagher Review, the Government announced that the original 2010–11 target of biofuel 5% use will not now be hit until 2013–14. This was followed in the Autumn by the discovery of a drafting error in the RTFO Order which effectively halved the first year's targets. The effect for investment in the UK, big and small, has been severe. Some plants have closed or been mothballed, plans have been abandoned and there are no new large-scale projects coming forward. It is ironic that the failures of UK policy have most undermined UK production, since the figures from the Renewable Fuels Agency show that biofuels made from UK-produced feedstock out-perform the average by a wide margin, on both sustainability and carbon savings. According to the most recent figures, UK fuels offer 66% GHG savings relative to fossil fuels (average 46%) and 99% meet stretching environmental standards (average 19%).⁶⁵

17. Despite signing up to the binding target in the Renewable Energy Directive that 10% of energy used in transport (roughly 13% by volume) must be renewable by 2020, the Government seems unwilling even to consider revising the targets. On the present course, the most likely outcome of this is that UK consumers will still be obliged to pay for the biofuel needed to meet the targets, but that very few of the jobs created (or fuel security benefits) will come to the UK.

18. We fear the current enthusiasm for electric vehicles could follow a similar path. We believe that they are likely to have a key role to play in reducing GHG emissions in the transport sector but much of the comment about them neglects the fact that they are only as green as the electricity they use. There are other

⁶⁵ RFA running totals April 2008–February 2009. Data are provisional and may be revised. <http://www.renewablefuelsagency.org/reportsandpublications/rtforeports.cfm>

sustainability concerns that will need to be addressed, such as the disposal of the batteries and whether there are enough raw materials available to make them. It is a mistake to see this as an either/or choice—we need to use the full range of options available, including energy efficiency, demand management and behavioural changes. In particular, electric vehicles are unlikely to be available in large quantities before 2020, making it particularly important that the UK secures a supply of sustainable biofuels.

19. In other sectors, the REA is broadly happy with the Government's long-term policy framework although key parts of it still need to be defined and delivered, particularly for renewable heat, renewable gas and local renewable power (which together could supply half the UK's EU 2020 targets). Assuming Tariffs for these measures are implemented successfully, the REA would be pleased because the Tariff framework offers a clear long-term stable framework for investment. This is a huge improvement on stop-start grant schemes which have clearly failed to build sufficient capacity in the UK onsite industry. The merchant power industry is satisfied with the RO as a support mechanism, particularly now the banding provisions have come into effect and can be adjusted as required.

20. Evidence from Germany is clear that the long-term framework provided by a long-term scheme like Tariffs does indeed help the industry expand and invest substantially, with huge employment benefits. They estimate 249,000 people are employed in their renewables sector. Germany last year achieved the levels of deployment that the UK needs to match to meet its 2020 targets.

21. Where there is more uncertainty is over the regulatory framework for the industry going forward, which results in complications around eg network access and network charging for our members. This has caused delay, frustration and increased costs for many of our members. It is frustrating that eg networks for offshore wind, have not already been planned ahead of need. REA sought to align the remit of the regulator Ofgem to the Government's stated energy policy objectives under the Energy Act 2008, but achieved only limited success on this complex and highly political area. On the positive side, there does seem to be greater political awareness (namely from Miliband at DECC) that greater intervention is needed in "the market" to ensure sector investors receive the right signals to invest in low-carbon technology and infrastructure. Business as usual will simply not deliver the strategic redevelopment necessary for a low carbon system, and the lack of a clear strategic framework is a real concern given the vast and pressing infrastructure and generation investment needs.

22. There is no doubt that the renewable energy sector offers substantial potential economic benefits. A study by IPPR/Greenpeace estimates the offshore wind sector alone could deliver 70,000 jobs. We anticipate meeting the 2020 renewables targets could deliver over 200,000 jobs. We anticipate these jobs would range from the highly skilled for major engineering projects and network development work, right through to the manual trades, particularly in the bio-energy sector for fuel-stock, where increased rates of waste sorting and recycling, forestry management and farm and commercial waste collection are needed. Many of the trades in difficulty given the collapse of the construction sector, for example, plumbers, electricians and heating engineers can be further trained in onsite renewables installations. However, the very highly skilled jobs in particular are likely to attract international candidates, particularly given the serious shortage of engineering skills in the UK.

23. One well known innovative member of the REA based in Scotland has provided us with a breakdown of the manufacturing components sourced by the company. It may be possible to provide this to the Committee, but we would need to check. The long list clearly illustrates the direct manufacturing benefits UK renewables offer to diverse manufacturing companies across the UK.

24. A survey carried out with our members, to which over 100 responded, indicated that for each £1 million of turnover the on-site sector employs 10 people. We roughly anticipate that each direct job leads to around two more in associated manufacturing, installation and other related jobs.

25. REA welcomes the new spirit of industrial activism. We are keen to see the Low Carbon Industrial Strategy expedited. Much more could be done to ensure the UK can better translate its academic and engineering expertise into commercial successes. REA is particularly concerned that the UK does not lose out in the marine renewables area, where we still retain a global lead, having lost the lead on wind and solar in the past. Unfortunately accessing the Marine Renewables Deployment Fund meant meeting insurmountable criteria meaning firms could not access the funds. Now that Scotland have completed their Strategic Environmental Assessment, the Crown Estate bidding round for projects in the Pentland Firth have provided an exciting insight into the growing vitality of tidal technologies with 38 applications for projects up to 300MW in size. REA is urging the UK government to act with a greater sense of urgency and undertake not the preliminary study proposed, but a full Strategic Environmental Assessment for England so similar activity south of the border can start as soon as possible. The industry is also concerned about the impact of the Marine Bill on the industry, both broadly in terms of the uncertainty introduced, but also in detail, for example in relation to environmental monitoring costs which are significant for an emergent industry.

26. The Marine example shows how the Low Carbon Industrial Strategy will need to carefully understand the development status of the renewable technologies it seeks to assist and the often specific and complex types of barriers that each may face.

27. We also hope that the Low Carbon Industrial Strategy will take a proactive approach to encouraging manufacturing opportunities.

The Renewable Energy Association (REA) is the largest industrial body representing the UK's renewables industry. Its 600 members cover all renewable energy types and all scales from the energy majors to emerging companies in new energy technologies. The REA has proposed budget measures for centralised and decentralised renewables and for infrastructure and training, estimated at a total of £695 million. See: <http://www.r-e-a.net/policy/REA-policy/EnergyDeal>

26 May 2009

Memorandum submitted by the Carbon Capture and Storage Association (CCSA)

INTRODUCTION

1. The Carbon Capture and Storage Association welcomes this opportunity to respond to the Committee's inquiry into green jobs and skills.

2. The CCSA was formally launched in March 2006, and brings together a wide range of specialist companies across the spectrum of carbon capture and storage (CCS) technologies, as well as a variety of support services to the energy sector. The Association exists to represent the interests of its members in promoting the business of CCS, raising awareness of the benefits of CCS and to assist policy developments in the UK, EU and internationally towards a long term regulatory framework for CCS, as a means of abating carbon dioxide emissions.

CCS CONTRIBUTION TO GREEN JOBS AND SKILLS

3. The UK is currently experiencing the worst recession in recent history and economic concerns are therefore weighing heavily in government policy. Yet the scale and urgency of the climate change challenge must not be forgotten and if the response is appropriately designed, there are benefits not just to the future survival of our planet, but to the economy as well. Lord Stern, in his report *The Economics of Climate Change*, estimated that to take action now on climate change would cost the world 1% of global GDP, whereas without action, the global economy could shrink by 20%⁶⁶—clearly, this is not an option.

4. The UK has already placed itself in a leading role in setting stringent binding targets to cut greenhouse gas emissions; 80% by 2050 with an interim target of 34% by 2020.⁶⁷ These targets set the framework under which a low-carbon economy can flourish and if met, will afford the UK with a mature industry for technologies to tackle climate change, with a domestic and export market to match.

5. To create a low carbon economy in the UK will require all sectors of society; energy, industry, housing and transport—and all technologies must be part of the solution. Relying on specific options will simply not be sufficient, and to avoid the security implications, maintaining a broad portfolio of options is much the safer bet.

6. The technology to capture, transport and permanently store carbon dioxide emissions deep underground—Carbon Capture and Storage (CCS) has the potential to play a vital role in encouraging low-carbon investment and increasing employment across many environmental industries. Whilst the initial and biggest prospect for CCS is in power generation, with the potential to reduce CO₂ emissions by up to 90 per cent, the technology will also play a large part in developing other environmental industries. For example, certain parts of industry, such as cement and steel, will have little or no other option for reducing carbon dioxide emissions besides CCS. In addition CCS, through the pre-combustion capture option, produces hydrogen as a product, which can be used as a zero-carbon fuel for industry, commerce, vehicles, and housing as well as electricity generation. The development of CCS can therefore be seen as a precursor to developing a future hydrogen economy for the UK.

7. The development and deployment of CCS will also open up significant opportunities for the creation of green jobs in the UK. Recent research for the Government has suggested that the industry for carbon abatement technologies could deliver 50,000 jobs by 2030⁶⁸—CCS could play a large part. The Government's Advisory Committee on Carbon Abatement Technologies (ACCAT) published a report in which they used International Energy Agency (IEA) figures to estimate that the CCS global market could be worth £100 billion per year. Assuming the UK could take a 10% share in this market, the UK market for CCS could be worth £10 billion per year.⁶⁹ Looking at the engineering and construction sectors, as well as the supply chain—this could equate to a large number of jobs, possibly reaching several hundred thousand.

8. The positioning of CCS projects will also play an important role in developing infrastructure regional infrastructure that will create considerable social and economic benefits for the UK. Developing CCS projects through a cluster approach in certain regions (such as Humberside, Thames, Teesside and Firth of Forth) will ensure cost-effectiveness in rolling out CCS plants—creating a transport and storage network that can be linked into from existing plants and assist planning considerations for location of future plants.

⁶⁶ *Stern Review: The Economics of Climate Change*, HM Treasury, October 2006

⁶⁷ *Building a low-carbon economy: implementing the Climate Change Act 2008*, HM Treasury, April 2009

⁶⁸ *Low carbon and environmental goods and services: an industry analysis*, Innovas (commissioned by BERR), March 2009

⁶⁹ *Accelerating the deployment of carbon abatement technologies—with special focus on Carbon Capture and Storage*, Advisory Committee on Carbon Abatement Technologies, February 2009

Although power plants are likely to be the precursor to such transport and storage networks, the future benefits for other industrial emitters (such as steel and cement) to tap into these networks, and thereby dispose of their CO₂ emissions, are of great importance. There is also potential for such networks to create a considerable number of green jobs in the relevant region—for example, Yorkshire Forward have been at the forefront of research looking into a CCS network for the Yorkshire and Humber region. Their conclusions estimate that a total investment of £2 billion would be needed to construct the transport network (if begun in 2008)—this would open up a large number of jobs in the construction and manufacturing sectors, helping to pull the region out of the current economic downturn. By 2030 the added economic activity through EU ETS credits alone, could be adding about £1.2 billion per year.⁷⁰

9. This country is in an advantageous position to become a world leader in CCS and take a large share in the global CCS market that could position the UK as a centre for CCS—much like London has become the centre for the EU Emissions Trading System (ETS). The UK has a significant well established energy services sector, which has already shown a keen interest in the development of CCS and could provide valuable knowledge and expertise to other countries. In addition, the UK has considerable strengths in design and manufacturing across power, process engineering and offshore engineering industries, which would offer a competitive advantage in developing a CCS industry.⁷¹ From many years of hydrocarbon extraction, the UK also has offshore infrastructure that is well suited for use in offshore CO₂ storage operations.

10. Across the low-carbon technologies, a massive skills and expertise gap is emerging, particularly in the manufacturing sector, and with the growth expected for these technologies (particularly the renewables sector which will need to meet ambitious EU targets), the number of available skilled workers will be declining fast. In the current economic downturn, with little availability in relevant jobs for these skilled workers, there is a danger that many of these workers will find jobs in other sectors or other countries—and UK expertise will be lost.

11. For CCS to fulfil its role in enabling a significant increase in low-carbon investment and employment in the environmental industries will require an ambitious long-term policy from Government. The IEA estimates that to reduce global greenhouse gas emissions by 50% by 2050 will require (in addition to other low-carbon technologies) 80 CCS plants per year from 2020 onwards across Europe.⁷² Working back, this will require a significant programme of first phase commercial scale CCS projects to be deployed around 2015, enabling the technical improvements and cost reductions to be made in order for CCS to be rolled out from 2020.

12. Developers will need certainty in a long-term regulatory framework as well as supporting financial incentives to enable projects to be built. To this end, the UK has already taken important steps forward—the detailed regulation for CCS is in the final stages of negotiation and the UK played an instrumental role in developing an EU Directive on CCS, which was agreed in December 2008. The UK Budget, announced on 22 April this year, also laid out the Government's new policy on coal, whereby any new coal plant in the UK must include CCS on a proportion.⁷³

13. In terms of the financial incentives needed, the EU has recently come forward with two mechanisms:

- €1.05 billion for CCS under the EU Economic Recovery package—to be allocated to a number of EU countries—UK could receive €180 million for one CCS project.⁷⁴
- 300 million EU ETS allowances from the New Entrants Reserve of Phase III (2013-) allocated to CCS under the EU ETS Directive agreed in December 2008.⁷⁵

14. As part of the Budget 2009, the UK also announced its intention to fund up to four CCS demonstration projects via a levy mechanism on consumers. Whereas the EU funding is likely to contribute to one or perhaps two of the four projects proposed by the UK Government at this stage (provided conditions of timing and other selection parameters are met), the remaining funds for the UK CCS demonstration programme will largely come from public funding through the proposed levy.

15. Whilst these mechanisms are all welcome steps towards providing the financial environment in which developers can invest, the detail of how these incentives will be dispersed, remains to be seen. To enable the widespread deployment of CCS will require an ambitious investment programme, and UK Government must implement appropriate incentives for this to take place. There has been no indication that the recent announcement to support two to four projects will form the first part of an ongoing strategy to introduce CCS into the UK generation mix. Rather it seems that these four projects are being treated as a narrowly defined technology demonstration programme, with an expectation that CCS will then become business as usual. However, as with other low-carbon technologies, funding will be required in the first phase of projects to bring CCS to the stage of commercial roll-out. Not only will developers of this first phase carry significant

⁷⁰ *A Carbon Capture and Storage Network for Yorkshire and Humber*, Yorkshire Forward, June 2008

⁷¹ *Delivering the low-carbon economy—Business opportunities for UK manufacturers*, EEF, January 2008

⁷² *Accelerating the deployment of carbon abatement technologies—with special focus on Carbon Capture and Storage*, Advisory Committee on Carbon Abatement Technologies, February 2009

⁷³ *Building a low carbon economy: a framework for the development of clean coal*, DECC, April 2009

⁷⁴ http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/106847.pdf

⁷⁵ *Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading system of the Community*, Council of the European Union, January 2009

early-mover risk, but they will also bear the cost burden of building the initial infrastructure that will be vital to support future CCS projects. It is hugely important that the UK urgently initiates this first phase of a large CCS deployment programme to send the signal to industry that CCS must form part of the strategy for delivering a low-carbon economy for the UK.

16. The UK is in an extremely advantageous position to lead on CCS; physically, there are benefits from the large resource of storage capacity under the North Sea, in addition to the technological expertise and know-how that comes from years of oil and gas extraction. With the recent announcements in CCS policy, the UK is amongst the first to develop concrete proposals to regulate CCS. The only remaining piece now is urgently to begin building plants, to build up UK capacity and show the world that an economic recovery can lead to a low-carbon economy with CCS playing an integral part in this objective.

The view expressed in this paper cannot be taken to represent the views of all members of the CCSA. However, they do reflect a general consensus within the Association.

12 May 2009

Memorandum submitted by SummitSkills

SUMMARY

- SummitSkills represents employers in 61,000 building services engineering businesses, which include the electrotechnical, heating and ventilating, refrigeration and air-conditioning and plumbing industries.
- Businesses within our footprint design, install, commission, service and maintain domestic and industrial/commercial systems, which have begun to incorporate current and emerging microgeneration and renewable energy technologies.
- These technologies have potential to make a significant contribution to the achievement of the 2020 renewable and 2050 energy reduction targets. Our submission concentrates on green jobs and skills relative to these activities.
- Microgeneration and renewable energy technologies skills need to be integrated into the traditional skills of existing building services engineering workers.
- The number of workers needed in the sector will increase, but they will need the full set of building services engineering skills rather than just the specific skills for environmental technologies.
- Employers are reluctant to top up the skills of their workforce without a clear indication of client or legislative demand.
- Employers need to be able to develop an entrepreneurial and enterprise culture and to raise client awareness of the range of suitable microgeneration and renewable energy technologies available.
- Financial incentives and legislative changes are likely to provide some stimulation to the market.
- The client's decision on a particular system, appliance or technology is often heavily influenced by the chosen installation business.
- Financial incentives are needed to support building services engineering businesses develop into effective advocates and installers of microgeneration and renewable energy technologies.
- It is essential to consider the impact on the training provider network, of encouraging building services engineering businesses to develop their workforce and plan accordingly.

CONCLUSIONS

- The building services engineering sector has potential, through micro generation and renewable technologies, to make a significant contribution to the achievement of the 2020 renewable and 2050 energy reduction targets.
- Businesses within the sector need:
 - to be convinced that the microgeneration and renewable technologies market is viable;
 - support in the development of skills in entrepreneurship and the enterprise culture; and
 - financial support to extend the skills of their workforce.
- Financial incentives for clients will be a more effective stimulus if they make a significant contribution towards:
 - cost of the installation;
 - reduction in payback time; and
 - reduction in energy usage cost.

SUMMITSKILLS

1. SummitSkills Is the Sector Skills Council for the building services engineering sector. We have been created by employers, for employers, to address six key objectives:

- Employer engagement.
- Offering expertise, safeguarding standards.
- Enhancing quality and delivery.
- Raising ambition.
- Effectiveness and evolution.
- Partnership approach.

2. The employer-led approach of SummitSkills gives businesses in the sector a key role in increasing their own and the country's productivity and profitability.

3. Through the establishment of Sector Skills Councils, employers have a direct route to influence strategic planning relating to skills and training. SummitSkills sees submission of evidence to this committee as part of fulfilling that role.

THE BUILDING SERVICES ENGINEERING SECTOR

4. The building services engineering sector covers the following industries:

- electrotechnical;
- heating, ventilating, air conditioning and refrigeration (HVACR);
- plumbing industry; and
- represents 61,000 companies as shown below:

<i>Industry</i>	<i>Number of companies</i>
Electrotechnical	23,000
HVACR	13,000
Plumbing	22,000
Consulting Engineers	3,000
Totals	61,000

5. There are 613,000 employees across the above industries and the sector accounts for approximately 3% of GNP (Gross National Product) with £20 billion of work being carried out each year.

MICROGENERATION RENEWABLE ENERGY TECHNOLOGIES WITHIN THE BUILDING SERVICES ENGINEERING SECTOR

6. Businesses within our footprint design, install, commission, service and maintain domestic and industrial/commercial systems, which incorporate current and emerging microgeneration and renewable energy technologies. Currently these technologies include:

- solar water heating;
- solar photovoltaics;
- ground and air source heat pumps;
- combined heat and power;
- biomass and bio—liquid;
- micro/small scale wind energy;
- micro hydro generation systems; and
- fuel cell technology.

7. The building services engineering sector, through these technologies, has potential to make a significant contribution to the achievement of the 2020 renewable and 2050 energy reduction targets. Our submission concentrates on green jobs and skills relative to these activities.

THE SKILLS REQUIRED

8. Invariably, these technologies are installed to or as part of a primary system. For example, solar panels are normally installed to support the primary hot water heating system in a dwelling or commercial property and micro wind generators supplement the primary electrical power source drawn from the national grid although they may also contribute any spare power back into the national grid.

9. Integrating them into existing primary systems can be complex—ensuring the equipment is the correct size and the controls that operate it are installed and calibrated correctly requires a comprehensive understanding of the primary system.

10. Through stakeholder consultation and research, SummitSkills has identified that the sector views microgeneration and renewable energy technology skills as being an integrated component of existing sector occupations and job roles. Existing sector workers in skilled, technical and professional occupations have the threshold of competence required to participate in renewable energy technology related upskilling (eg plumbers installing solar water heating panels and heat pumps, building services engineering consulting engineers designing renewable technologies into new and refurbishment projects).

11. Employers in the sector have been slow to top up the skills of their existing workers, not allowing them to work on the environmental technologies. Our research has shown that 90% of businesses employ less than 10 people and they are not natural entrepreneurs. They are very cautious about spending money to upskill their existing workforce without a clear need to do so. As a consequence they are waiting for client demand or legislation to drive their business into the environmental technologies market.

12. SummitSkills Sector Skills Agreement (SSA) Key Issues: 2008 Update⁷⁶ highlighted that businesses in the sector are largely reactive rather than proactive. The update also highlighted that there is a general lack of entrepreneurial culture resulting in many sector businesses not identifying and responding to new business opportunities. Therefore, when considering how to increase deployment of microgeneration and renewable energy technologies it is essential not to just focus on the need for technical and design skills but to also focus on the need to develop an entrepreneurial and enterprise culture and to raise client awareness of the range of suitable technologies available.

The key points here are:

13. Environmental technologies skills and competence need to be integrated into the traditional skills and competence of existing workers.

14. The number of workers needed within the sector will increase, but they will need the full set of building services engineering skills and competence rather than just the specific skills and competence for environmental technologies.

15. Employers are reluctant to top up the skills of their workforce without a clear indication of client or legislative demand.

16. Employers need to be able to develop an entrepreneurial and enterprise culture and to raise client awareness of the range of suitable microgeneration and renewable energy technologies available.

DRIVERS OF CHANGE

17. The key driver for any business is customer demand. The client's decision to select a particular system, appliance or technology is often heavily influenced by the chosen installation business.⁷⁷

18. Secondary drivers include legislation and incentives. If however, demand is stimulated before businesses have extended their workforce skills, clients will look to other countries where businesses already have these skills.

19. The deployment of microgeneration renewable energy technology systems is likely to be driven to some extent by future amendments to the Building Regulations/Scottish Building Standards.

20. Financial incentives such as the introduction of feed-in tariffs in 2010 and the introduction of the Renewable Heat Incentive in 2011 will also help, but only if they make a significant contribution towards:

- cost of the installation;
- reduction in payback time; and
- reduction in energy usage cost.

21. SummitSkills believes that the installation of microgeneration renewable energy technology systems in sufficient volume to make a significant contribution to the 2020 and 2050 targets, is unlikely without the engagement and support of UK building services engineering sector businesses. We also believe that installation businesses have huge potential to stimulate the market and create customer demand as outlined above (paragraph 17).

22. SummitSkills considers that drivers, linked to encouraging sector installation businesses to engage with renewable energy technologies and to stimulate the market, are essential. We consider funded training for upskilling, particularly in the current economic climate, is likely to be an effective driver.

⁷⁶ SSA Key Issues: 2008 Update—See Annex 1.

⁷⁷ In 71% of decisions according to Energy Saving Trust research.

The key points here are:

23. The client's decision on a particular system, appliance or technology is often heavily influenced by the chosen installation business.

24. Financial incentives and legislative changes are likely to provide some stimulation to the market.

25. Financial incentives are needed to support building services engineering businesses develop into effective advocates and installers of microgeneration and renewable energy technologies.

TRAINING DELIVERY INFRASTRUCTURE

26. When considering skills development, it is essential to look not only at the skills needs of both the current and future workforce but also the capacity in the education and training system to develop a trained and competent workforce. The SSA Key Issues: 2008 Update also highlighted that due to the sector's current participation in formal renewable energy training being very low, any market stimulation will generate significant uptake in some technologies, which may exceed the supply network's ability to cope with training needs. It is essential not to overlook the need for appropriate capacity⁷⁸ in the supply network to deliver high quality training solutions.

27. Additionally, building services engineering sector businesses can easily find themselves the victim of rogue training providers, particularly when there are emerging markets or other drivers to participate in training. Key feature of the skills development is the need for economically valuable, industry recognised training that is based upon the relevant National Occupational Standards and develops the skills and competence required for the various industry schemes (such as Building Regulations Competent Person Schemes and the Microgeneration Certification Scheme). Clear signposting to the recognised training solutions is essential.

The key points here are:

28. It is essential to consider the impact on the training provider network, of encouraging building services engineering businesses to develop their workforce and plan accordingly.

CONCLUSIONS

29. The building services engineering sector has potential, through micro generation and renewable technologies, to make a significant contribution to the achievement of the 2020 renewable and 2050 energy reduction targets.

30. Businesses within the sector need:

- (a) to be convinced that the microgeneration and renewable technologies market is viable;
- (b) support in the development of skills in entrepreneurship and the enterprise culture; and
- (c) financial support to extend the skills of their workforce.

31. Financial incentives for clients will be a more effective stimulus if they make a significant contribution towards:

- (a) cost of the installation;
- (b) reduction in payback time; and
- (c) reduction in energy usage cost.

26 May 2009

Annex 1

KEY ISSUES: 2008 UPDATE

EXTERNAL INFLUENCES

Business and Economic Performance

- Despite feeling that the UK economy is in a period of slower growth, the Building Services Engineering (BSE) sector is confident about its own growth over the next three years.
- Only London shows any reticence about its performance to 2012.
- The significant investments in PPP and PFI contracts for the public sector may be fuelling this belief in growth. However this may be deceptive when trying to gauge overall confidence or the impact of economic slowdown if it occurs within the sector.

⁷⁸ Appropriate capacity: sufficient capacity within each region/nation for each technology.

The Euro

- The sector is opposed to UK entry to the Euro in principle.
- A larger minority, however, believe that membership of the Euro would benefit business.
- Adoption of the Euro would provide larger BSE companies wishing to work in Europe with fixed exchange rates, and a level playing field for tendering. Conversely, it would facilitate further European BSE entry to the UK domestic market. With the UK productivity deficiencies identified in this research, this may create a more competitive domestic market which, while good for clients, may cause difficulties for UK firms.

Finance

- The sector believes that interest rates are generally too high.
- Currently it does not use finance significantly as a means of purchasing plant and equipment.
- As the most heavily financed region, London would appear to be the most sensitive to interest rate changes. A financial squeeze in that region may impact on the ability of the sector to recruit apprentices, when this is compared with their current judgement of the performance of the sector in their region.

Globalisation

- Globalisation theory suggests that “clustering” is one approach that businesses take to globalisation. This is where companies work together to develop or promote specialisms and/or specialist skills.
- The development of specialist skills to meet clustering business needs does not yet appear to have impacted significantly on the BSE sector.
- Most BSE companies are experiencing little or no change in their workloads or work types.
- Where there is clustering activity within the sector from a globalised perspective, this is to be found in areas where there has traditionally been foreign inward investment by multi-national companies.
- Currently the BSE sector shows no sign of being affected by globalisation. This could, however, be a factor in the sector’s future development, if an increase in specialised manufacturing leads to a need for specialist buildings and skills to install the building services.

Materials Cost Price Rising

- International copper and lead prices continue to increase the costs of BSE contracts.
- The sector is currently passing on those costs directly to the consumer, which can contribute to inflationary pressure on the economy.
- Slowdown of the economy generally may mean that the BSE sector has to absorb these costs to remain competitive, which could create and exacerbate potential liquidity problems.

Overall economic conditions might put pressure on the BSE sector’s recruitment of apprentices, as the training budget (not currently a priority for the sector) is usually the first to be cut.

Environmental Issues

- The Stern report suggests that the proliferation of greenhouse gas emissions is causing a worldwide temperature increase. This leads to melting ice caps and adverse weather conditions, with a reduction in the living space available to the increasing world population. This could result in a 15% reduction in GDP in developed countries.
- The UK is currently moving from being an energy exporter to an energy importer, which could further aggravate economic slowdown. Any sudden reduction in the supply of oil or gas to the UK from foreign exporters would significantly damage the UK’s GDP.
- Currently the use of power from renewable energy is 40% behind government targets.

Building Services Response

- The sector’s current exposure to and competence within environmental technologies is limited.
- There is certain clustering of technologies around regions, with some areas showing interest in certain renewables technologies and some in others. But engagement overall is low.
- Given the current low level of engagement in combined heat and power installation, the sector will be unable to adequately support the Government’s ambitions for this technology.
- A high number of companies are waiting for stimulation of the market before they invest time and money in skills development and branching out into new technologies.

-
- The current supply of training opportunities is inadequate, both in quantity and in relation to formal qualification and measurement against national standards. Training in renewables remains largely the preserve of manufacturers.
 - A sudden increase in the use of environmental technologies will create a heavy demand for training, which the supplier network will be unable to meet. London is particularly vulnerable in this respect because of the high commitment to developing new technologies, the Olympics, and the high number of proposed prestigious buildings in London which are likely to incorporate the most “high tech” environmental solutions.
 - The proliferation of rogue trainers who take advantage of the lack of accredited training must be considered.
 - In some English regions, the wholesale development of training in certain new environmental technologies will be inappropriate, due to lack of demand. The clustering effect discussed above will need to be further investigated and action taken to match demand with supply.

Failure to engage in this renewables market will damage the sector’s profitability and encourage international competition to enter the market. Productivity performance in the sector may well fall further behind foreign competition, as craft operatives become less skilled compared to their overseas counterparts.

BUSINESS & WORKFORCE DEVELOPMENT

Leadership and Management

- Leadership and management is viewed as a major area of weakness in the sector, and one where specific action is needed to improve knowledge and skills.
- The BSE sector does not strategically train its staff in management and leadership techniques and is reluctant to allow managers time off to take management courses.
- Where managers have formal qualifications, these range from level 1 to level 5 and vary greatly in their degree of relevance to the sector. Employers appear to have no knowledge of the fitness for purpose of these qualifications, or whether they add to managers’ skills levels.
- The current plethora of management qualifications is damaging to the sector as it creates the illusion that managers may actually be suitably qualified for management in the sector, where the evidence suggests this may not be the case.
- Currently engagement in BSE-specific management qualifications is about 1% of the total sample surveyed.
- Rather than skills deficiencies in craft operatives, it could be the chaotic nature of management qualifications, combined with the sector’s attitude to management training, that is the primary cause of productivity deficiencies against international competitors.

Entrepreneurship

- Most BSE companies believe that they display no entrepreneurial characteristics and focus group members were wary of applying the term to the sector.
- However a significant proportion thinks that entrepreneurial skills are not necessarily innate, but can be taught. This suggests it may be possible to market the concept of entrepreneurship to raise levels of knowledge and understanding.
- The lack of understanding about entrepreneurship is part of an overall lack of thinking on leadership and management issues. The underlying concepts of leadership, management and entrepreneurship have a significant degree of natural convergence.
- Although the BSE sector at the moment is not required to develop new specialisations to meet globalised clustering (although this position may change), the failure of the sector to identify entrepreneurial opportunities may damage their potential business competitiveness and affect productivity.

Business Acumen

- SummitSkills’ Sector Needs Analysis and Assessment of Current Provision used Porter’s model for competitive advantage to assess the BSE sector’s performance.
- A focus group also investigated if the model could be developed into a productivity and skills improvement model for the sector. Generally it was considered to be suitable, although the role of capital investment and information technology was thought to be overemphasised.
- Due to its origins in the manufacturing sector, the model does not currently reflect the importance of the “people” function to the BSE sector, which has a large number of specialist one-off contracts and greater labour intensity. More work is needed to develop this concept further.

Information Technology

- The sector makes significant use of IT for all the major business functions.
- Manufacturers of products that require a high level of IT knowledge do not offer formal training, although sales staff can offer support as part of a sales and after-sales service.
- It is difficult to map the IT skills needed to maximise productivity gains from investment in new technology and equipment against existing IT training courses. This is because the skills required to effectively operate BSE sector IT equipment are specialised, whilst general IT courses tend to focus on main software package manipulation such as Microsoft Office.
- Smaller companies are more likely not to utilise IT to its maximum extent and to need support, whereas larger companies often employ their own IT specialist.

Curriculum Relevance

- Use of skill cards is not widespread and remains concentrated primarily in the medium to large companies.
- Many of the skills that employers say that they need from apprentices are more behavioural in nature such as life skills and respect. However, these are behavioural aspects of an individual that have to be developed and cannot be taught or specifically delivered through National Occupational Standards or qualifications.
- The plumbing industry is recording the greatest instance of skill gaps of any of the industries. However the reported gaps appear to be more attitudinal factors than definable skills gaps. Only solar panels make the list of skills that are definable and actionable by providers. More work needs to be done with trade associations representing plumbing companies to accurately highlight actual skills needs.
- Less than 50% of the UK BSE sector invested in either on-or off-the-job training for their employees in the last 12 months.

NEW ENTRANTS

Migrant Workers

- London and the East of England have the highest percentage of migrant workers.
- There is no evidence that poor English is affecting migrant workers or compromising health and safety.
- Labour agencies contacted as part of this research confirmed a number of issues:
 - they were not aware of migrant workers being paid below normal labour rates;
 - they did not offer training for migrant workers, but helped them to get skill cards, and checked foreign qualifications for their UK equivalence; and
 - the numbers of migrant BSE workers is expected to increase over the next few years.
- Migrant workers are traditionally perceived to have higher skills and a better work ethic than indigenous workers. This research suggests this perception is changing, with fewer employers expressing such a view.
- If migrant workers do not have the higher skill levels and better work ethic previously assumed, their contribution to productivity gains may not be as significant as once thought.
- If the renewables market develops strongly within the UK, the sector may suffer from decreased productivity measures compared to international competitors, as many migrant workers are skilled in environmental technologies that the current UK BSE sector does not have.

Diversity

- Due to difficulties with accessing students through their training providers, the experience of ethnic minority learners working in the BSE sector remains under researched.
- The BSE sector has traditionally used a blanket approach to targeting ethnic minority groups for recruitment, which research by the Institute of Public Policy Research for Channel 4 suggests may be misplaced as different groups have differing career expectations.
- Certain ethnic groups tend to have a high level of skills, with aspirations towards professional roles and higher income levels, while other ethnic groups have lower average salary expectations. Specifically targeting the latter groups as well as the former, may be more advantageous, if they are more likely to enjoy an income rise by joining the sector as well as having numerous career opportunities available to them that will meet high levels of career aspiration.

Key Skills

- Although existing literature suggests that BSE sector employers are reluctant towards Key Skills, only a minority of those surveyed found them to be irrelevant to the apprentice programme.
- Employers generally think that Key Skills should remain part of the apprenticeship scheme, and this view is shared by providers.
- In this research SummitSkills profiled two exemplar Key Skills providers and compared issues in existing literature with the actual practice of the providers. The research discovered that the providers:
 - have experienced dedicated Key Skills staff, with one having a Key Skills department;
 - demonstrate good practice in having regular formal and more frequent informal meetings between Key Skills staff and those teaching main curriculum subjects to discuss learner performance;
 - ensure that all Key Skills assignments are relevant to the main curriculum of the learner; and
 - use stand-alone classes and assignments to teach Key Skills rather than integrate into the general curriculum.
- Key Skills remain a vital element of the apprenticeship programme, which apprentices must achieve if they are to progress. The exemplar providers generally demonstrate the good practice featured in the literature, which might be seen as the beginnings of a “blueprint” for good Key Skills delivery for all providers to adopt.

OUR KEY RECOMMENDATIONS

1. The sector’s participation in *formal environmental technology training* is very low. Also very few companies are currently working with the various technologies. Market stimulation will generate significant uptake in some technologies, which may exceed the supply network’s ability to cope with training needs. To create a balance of training supply and employer demand, work needs to take place with providers to ensure that the relevant technologies are offered in the relevant regions and nations.

2. *Management skills* remain poor and there is no coherent set of management qualifications on offer for the sector to improve its skills. Poor leadership and management skills could be the major cause of sector productivity deficiencies. A clear suite of management qualifications that is suitable for the BSE sector need to be identified.

3. More work is required to create a business model based on Porter’s model, from which the sector can begin to measure its own business performance. There remains a need to encourage employers to use formal KPI and benchmarking techniques to develop *improved business and management performance*.

4. The sector is not training sufficient numbers of its employees, and in many instances is unable to articulate its skills needs effectively. An *increase in the skills knowledge of the sector* is needed, to help employers understand and subsequently describe their current and future skills requirements.

5. Employers are still unsure of the *content of apprenticeship courses* and what they can rightly expect a provider to teach an apprentice. SummitSkills and partners should raise employer awareness about the content of apprenticeship programmes as well as the general curriculum.

6. The sector remains unsure of the benefits that creating an *entrepreneurial culture* within their organisations will bring. If factors driving globalisation continue, this may have a significant affect on the sector’s ability to respond to new business opportunities. Communication with employers is needed to stress the value of taking a strategic approach to their business thinking and becoming more entrepreneurial in practice, to respond to changing markets over the coming years.

Additional Memorandum submitted by SummitSkills

1. SummitSkills submitted a memorandum to the committee on 26 May 2009.⁷⁹ Annex 1 provides a summary of that paper. This memorandum provides an update.

Green skills within the context of building services engineering.

2. The building services engineering sector embraces design engineers and contractors involved in the design, installation, commissioning, servicing and maintenance of electrotechnical, heating and ventilating, refrigeration and air-conditioning and plumbing industries in dwellings and non domestic buildings. The related green technologies which fall within this scope of activities are:

- Solar Water and Heating
-

⁷⁹ See Ev 167

- Solar Photovoltaics
- Combined Heat and Power
- Heat Pumps
- Bio-fuels
- Water recycling
- Mechanical Heat Recovery Ventilation
- Micro Wind Energy
- Micro Hydro Generation Systems
- Fuel Cell Technology

How has the demand led skills framework changed?

3. Over the last two years, the sector through SummitSkills research (see Annex 2) and consultation has been able to make its requirements clear for the qualifications it needs and why it needs them. This in turn has allowed SummitSkills to negotiate with funding agencies and ensure the qualifications' and courses that are funded by government, are those which employers value. It has also allowed us to reduce the number of non economically valuable programmes available, which did not meet the sectors skills requirements.

4. This approach has been successful for the traditional mainstream trade areas. However, it has been less so for the introduction of green technologies where employer demand is currently low and funding to support the additional skilling of existing workers in green technologies is difficult to access. Within England in particular, the Learning and Skills Council "Sector Compact" initiative has continually been stalled for this sector, while government papers are being formulated.

How industry are able to recognise the skills it needs in the green economy?

5. The building services engineering sector recognises the skills it needs in the green economy firstly through commercial business drivers. Our research (see Annex 2) has indicated that the sector's employers generally tend to be reactive to change. They are unlikely to develop their businesses or workforce skills unless there is a clear commercial opportunities and client demand. Principle drivers for this are:

- Legislative changes such as Building Regulations, embracing energy efficiency and green technologies;
- Grant schemes aimed at supporting building owners to take effective energy efficient measures and install green technologies, which require the use of competent installers to qualify; and
- Clients demanding environmental technology within their construction, refurbishment and maintenance projects.

6. SummitSkills works with forward looking employers within the sector, trade associations, professional bodies and government departments to identify the skills requirements which support these drivers, and then to devise solutions which will help to deliver them. For example, we have worked closely with Community and Local Government to identify the competencies required relative to the new building regulations and with the Department for Business, Innovation & Skills to identify the competencies required that supports the Micro Generation Certification Scheme.

7. We are also working with seven other Sector Skills Councils (Asset Skills, Cogent, Construction Skills, ECITB, EU Skills, Lantra, SEMTA and SummitSkills) on cross-sector renewable energy project sponsored by the Department of Energy and Climate Change.

8. The project aims to develop a cross sector renewable energy skills strategy. It is adopting a process that mirrors the proven mechanism for developing a Sector Skills Agreement (SSA), to provide a robust framework and give confidence to the research. The process includes:

- Assessment of current & future skills needs—skills analysis;
- Mapping quality and availability of training provision—supply side analysis;
- Gap Analysis of training requirements and training provision;
- Development of practical, workable and cost effective solutions to address identified needs; and
- Action plans to tackle the short, medium and long term priority skills issues.

How is industry able to get the training to do this?

9. Currently, a significant amount of additional skills training for existing workers in green technologies is provided by the technology manufacturers. In addition, organisations recognised by government departments to certificate companies as competent for their schemes (eg micro generation Certification Scheme) provide training and assessment through their networks of approved centres.

10. SummitSkills is currently working with awarding bodies such as City and Guilds and EAL, developing a suite of qualifications into the new Credit and Qualifications Framework (and Scottish Credit and Qualifications Framework). These incorporate green technologies into the traditional mainstream trades for apprentices (and other new entrants to the sector). They will also provide smaller qualifications for existing workers within the sector, to extend their skills or gain national recognition if they already have them.

11. All of this should ensure employers have the opportunity to ensure their workforce is competent in green technologies, to nationally recognised standards.

12. The key however is to generate demand. As highlighted earlier, employers are unlikely to develop their businesses or their workforce into green technologies unless they have confidence that there are real commercial opportunities. Training and assessment providers will not invest in development of new and expensive green technology programmes unless they are confident there is demand from employers for the provision.

13. SummitSkills is currently updating its research to review the proportion of companies that are or intend to engage in these green technologies and the proportion of their staff who have received training in the technologies. We have also developed a strategy for green technologies aimed at providing strong leadership to:

- Support employers within the sector to engage effectively with environmental technologies and maximise on the opportunities for their business;
- Support the sector to achieve maximum impact against the UK targets for sustainability, carbon emission reductions, renewable energy generation and energy and resource management.

15 October 2009

Annex 1

THE GREEN JOBS AND SKILLS INQUIRY MEMORANDUM BY SUMMITSKILLS

SUMMARY

- SummitSkills represents employers in 61,000 building services engineering businesses, which include the electrotechnical, heating and ventilating, refrigeration and air-conditioning and plumbing industries;
- Businesses within our footprint design, install, commission, service and maintain domestic and industrial/commercial systems, which have begun to incorporate current and emerging microgeneration and renewable energy technologies;
- These technologies have potential to make a significant contribution to the achievement of the 2020 renewable and 2050 energy reduction targets. Our submission concentrates on green jobs and skills relative to these activities.
- Microgeneration and renewable energy technologies skills need to be integrated into the traditional skills of existing building services engineering workers.
- The number of workers needed in the sector will increase, but they will need the full set of building services engineering skills rather than just the specific skills for environmental technologies.
- Employers are reluctant to top up the skills of their workforce without a clear indication of client or legislative demand.
- Employers need to be able to develop an entrepreneurial and enterprise culture and to raise client awareness of the range of suitable microgeneration and renewable energy technologies available.
- Financial incentives and legislative changes are likely to provide some stimulation to the market.
- The client's decision on a particular system, appliance or technology is often heavily influenced by the chosen installation business.
- Financial incentives are needed to support building services engineering businesses develop into effective advocates and installers of microgeneration and renewable energy technologies.
- It is essential to consider the impact on the training provider network, of encouraging building services engineering businesses to develop their workforce and plan accordingly.

CONCLUSIONS

- The building services engineering sector has potential, through micro generation and renewable technologies, to make a significant contribution to the achievement of the 2020 renewable and 2050 energy reduction targets.

- Businesses within the sector need:
 - to be convinced that the microgeneration and renewable technologies market is viable;
 - support in the development of skills in entrepreneurship and the enterprise culture;
 - financial support to extend the skills of their workforce.
- Financial incentives for clients will be a more effective stimulus if they make a significant contribution towards:
 - cost of the installation;
 - reduction in payback time; and
 - reduction in energy usage cost.

Annex 2

OUTCOMES FROM SUMMITSKILLS SECTOR SKILLS AGREEMENT AND ADDITIONAL RESEARCH RELEVANT TO GREEN (ENVIRONMENTAL) TECHNOLOGIES

1. Initially, the Sector Skills Agreement development process highlighted the need to:
 - Develop and implement national occupational standards for current and emerging environmental technologies to craft, technical and professional occupations;
 - Update and maintain qualifications to reflect renewables and environmental technology skills;
 - Ensure environmental technologies are fully integrated within other activities such as the careers strategy and apprenticeship training frameworks.
2. In 2008 SummitSkills undertook research into specific themes arising from the Sector Skills Agreement. One of the themes researched further was environmental technologies in building services engineering. The key findings of this research were:
 - The sector's current exposure to and competence within environmental technologies is limited. There is certain clustering of technologies around regions, with some areas showing interest in certain renewables technologies and some in others, but engagement overall is low;
 - A high number of companies are waiting for market stimulation before they invest time and money in skills development and branching out into new technologies;
 - The current supply of training opportunities is inadequate both in quantity and in relation to formal qualification and measurement against national standards;
 - Training in renewables remains largely the preserve of manufacturers. A sudden increase in the use of environmental technologies will create a heavy demand for training which the supplier network will be unable to meet;
 - London is particularly vulnerable because of the high commitment to developing new technologies, the Olympics and the high number of proposed prestigious buildings in London which are likely to incorporate the most "high tech" environmental solutions; and
 - The proliferation of rogue trainers who take advantage of the lack of accredited training must be considered. In some English regions the wholesale development of training in certain new environmental technologies will be inappropriate due to lack of demand. The clustering effect needs to be further investigated and action taken to match demand with supply.

Memorandum submitted by the Association for the Conservation of Energy (ACE)

INTRODUCTION TO THE VIEWS OF ACE

The Association for the Conservation of Energy is a lobbying, campaigning and policy research organisation, and has worked in the field of energy efficiency since 1981. Our lobbying and campaigning work represents the interests of our membership: major manufacturers and distributors of energy saving equipment in the United Kingdom. Our policy research is funded independently, and is focused on three key themes: policies and programmes to encourage increased energy efficiency; the environmental, social and economic benefits of increased energy efficiency; and organisational roles in the process of implementing energy efficiency policy. We welcome this opportunity to respond to this consultation.

SUMMARY

- Investing in energy efficiency has the potential to create hundreds of thousands of green jobs.
- Current Government investment in energy efficiency and sustainable energy is too low and needs to be increased.

- ACE urges Government to support the Fuel Poverty Bill which, if enacted, has the potential to create 37,000 direct jobs. This is before considering the many thousands of indirect jobs that would accrue.
- Government must set energy efficiency and sustainable energy targets to provide industry with the certainty it needs to start investing—thus creating jobs.
- Financial incentives for energy saving measures will provide a much-needed boost to the energy saving materials market.

1. Government has identified that energy efficiency is the cheapest, cleanest and safest way of meeting our energy needs.⁸⁰ A focus on energy efficiency will also help boost employment and has the potential to create hundreds of thousands of green jobs, across a range of different skills.

2. A recent report commissioned by Greenpeace has highlighted the benefits of an energy efficiency based fiscal stimulus and shows that a £5 billion investment in energy efficiency in the domestic sector alone over 10 years will deliver around 55,000 jobs directly and hundreds of thousands of jobs indirectly.⁸¹

3. It is not only environmental groups who are calling for a green stimulus. Sir Nicholas Stern, world renowned author of the Stern Review on the Economics of Climate Change, has called for a green stimulus⁸² and the New Green Deal policy package, designed to maximise the energy efficiency of homes, power a renewables revolution and create thousands of green-collar jobs, and is supported by a growing number of UK experts in finance, energy and climate.⁸³

4. Yet a recent report by the New Economics Foundation shows new and additional spending for the green stimulus part of the Pre-Budget Report is incredibly low—at just 0.6% of the UK's £20 billion recovery plan. This is just 0.0083% of UK GDP, an incredibly low amount when compared to the fact that nearly 20% of UK GDP has been made available to support the financial sector in recent months.⁸⁴

5. The UK needs to shift away from our dependency on fossil fuels and Government needs to target much-needed funds towards energy efficiency and sustainable energy. Government has an opportunity to invest in low carbon and sustainable industries which will not only create green jobs but also help us to meet our newly announced 2020 interim carbon emissions target, putting the UK on a low carbon trajectory towards achieving our 2050 target. Setting the foundations for an early transition to a low-carbon economy will create new jobs as well as encourage new business and investment thus paving the way for a more stable, sustainable future.

FUEL POVERTY BILL

6. The Association for the Conservation of Energy, as part of the End Fuel Poverty Coalition,⁸⁵ is promoting the Fuel Poverty Bill which would require a national energy efficiency programme to raise the energy efficiency standards of homes in fuel poverty to those enjoyed by new homes. Our research shows that the proposed improvement programme will have major economic benefits, important at a time of economic recession, and would provide 35,700 “green” jobs.⁸⁶ This is an eight fold increase in direct jobs compared with current “fuel poverty” programmes (Warm Front and the priority group element of CERT).

7. This is before considering the jobs created indirectly as householders spend some of the money they save on additional goods and services. The Impetus report for Greenpeace reviewed previous energy efficiency programmes and found that over twice as many jobs were created indirectly than were created directly—in some cases up to 7.5 times as many were created. We would therefore expect hundreds of thousands of indirect jobs to be created as a result of the adoption of the Fuel Poverty Bill.

8. Our research also shows that the additional benefits of this energy efficiency programme would lift over 80% of fuel poor households out of fuel poverty, reduce energy bills (with some of the financial savings being spent elsewhere in the economy), cut carbon emissions and have considerable economic benefits—putting around £6.6 billion back into the economy. This programme represents a very cost effective way of addressing the current recession and protecting the fuel pool from any price increase linked to climate change initiatives.

9. ACE therefore strongly recommends that Government support the Fuel Poverty Bill and ensure that it becomes law in this Parliamentary session.

⁸⁰ Energy White Paper, Our energy future—creating a low carbon economy, DTI, February 2003

⁸¹ The case for including energy efficiency investment in the fiscal stimulus package, A report for Greenpeace by Impetus Consulting Ltd, 30 March 2009

⁸² An outline of the case for a “green” stimulus; Alex Bowen, Nicholas Stern, Dimitri Zenghelis, Policy Brief February 2009

⁸³ A New Green Deal, New Green Deal Group, New Economics Foundation, July 2008

⁸⁴ A Simms, V Johnson & S Nissan, Green Stimulus or Stimulus? New Economics Foundation, 2009

⁸⁵ The End Fuel Poverty Coalition consists of Age Concern and Help the Aged, Association for Charity Officers, the Association for the Conservation of Energy, Barnados, the Centre for Sustainable Energy, Child Poverty Action Group, Compass, Consumer Focus, Counsel and Care, Disability Alliance, Federation for Private Residents Associations, Friends of the Earth, GMB, Macmillan Cancer, National Childbirth Trust, National Pensioners Convention, National Federation of Women's Institutes, National Right to Fuel Campaign, Royal College of Nursing, the Sustainable Energy Partnership, Tenants and Residents Organisations of England, UNISON, WWF.

⁸⁶ Raising the SAP—tackling fuel poverty by investing in energy efficiency, Report to Consumer Focus by the Association for the Conservation of Energy (ACE) and the Centre for Sustainable Energy (CSE), May 2009

SECTORAL TARGETS

10. In order to protect existing jobs, create opportunities and encourage investment the UK needs a mixture of policies that will tackle the current global economic slowdown as well as help us to meet our targets to reduce carbon emissions and ensure that we achieve energy security.

11. To this end ACE is promoting the *Climate Change (Sectoral Targets) Bill* which requires the Secretary of State to set long term targets for energy efficiency in the domestic and non domestic sectors, for renewable energy, microgeneration and other low carbon sources of energy generation in order to satisfy all of the UK's energy needs, provide for security of supply and also help achieve carbon reduction targets. Setting targets for these sectors will give industry the certainty it needs to start investing and this in turn will create jobs and help to regenerate the economy.

12. ACE therefore urges Government to support this Bill and urges the early setting of energy efficiency and sustainable energy targets in all sectors.

FINANCIAL INCENTIVES

13. One of the major barriers to installing energy saving measures in homes is high upfront costs. Setting up a comprehensive package of financial incentives to encourage homeowners to install energy saving measures will create more demand for energy saving materials and thus provide a much needed stimulus to the energy saving materials market. This will expand the market and create direct and indirect green jobs.

ACE therefore calls for a comprehensive package of economic measures to encourage homeowners to upgrade the energy efficiency of their homes. These could include Stamp Duty rebates on the cost of energy efficiency improvements; Treasury funding for a national scheme of Council Tax rebates; and cutting VAT on many more energy-saving products.

26 May 2009

Memorandum submitted by the Association of Colleges (AoC)

INTRODUCTION

The Association of Colleges represents and promotes the interests of Further Education Colleges and their students.

Colleges provide a rich mix of academic and vocational education. As autonomous institutions they have the freedom to innovate and respond flexibly to the needs of individuals, business and communities.

The following key facts illustrate Colleges' contribution to education and training in England:

- Colleges have three million students.
- 737,000 of these students are aged 16 to 18 which compares to 471,000 in schools.
- Half of all entrants to higher education come from Colleges.
- Colleges teach over 60,000 students from outside the UK.
- Colleges provide half of all vocational qualifications.

Colleges are acutely aware that many of these students will be faced with the impact of climate change and will be in the forefront of dealing with it when they become the managers of tomorrow in 20 or 30 years time.

The sector is therefore responding positively to the green agenda and they are well placed to do this because they are centres of excellence and quality—84% of employers training through a College are satisfied with the service provided and 97% of colleges inspected in 2007–08 were judged satisfactory or better by Ofsted for the quality of their provision.

AoC also has a number of relevant strategic skills groups made up of skills champions from FE Colleges including:

- Construction and the Built Environment.
- Engineering, Manufacturing and Product Design.
- Land-based and Environmental.

For more information on Colleges please see www.aoc.co.uk

THE ROLE OF COLLEGES

1.0 Colleges have roles in two aspects of encouraging green jobs and skills; supporting those starting up new companies in order to take advantage of increased demand for actively-green products, and supporting existing organisations intending to reduce their environmental footprint for any of a number of reasons.

1.1 For the start-up companies, Colleges can provide:

- Technical training in environmental technologies such as renewable energies, recycling and waste treatment, low-carbon transport, energy efficient buildings, etc.
- Business and management skills in establishing new businesses in rapidly-changing business environment, including “environmental” accounting, marketing etc.

1.2 For the existing organisations and new organisations alike Colleges can provide:

- environmental management tools and systems;
- environmental auditing;
- life cycle analysis and similar assessment tools; and
- Awareness training and motivation-building for employees.

RESPONDING TO THE GOVERNMENT AGENDA

2.0 Many of the new green and sustainable technologies are in sectors where Government controls are evolving alongside or even slightly behind the technology (eg bio fuels, genetic manipulation and even nuclear). It is important that Government consults and works with Colleges and stakeholders involved in the development of these technologies and skills required to utilise them at all levels. We recommend consultation with sector skills councils on the sustainability aspects of their curriculum advice to awarding bodies and Government particularly in relation to apprenticeships.

2.1 There are a number of degree level qualifications in renewable energy at both undergraduate and graduate level, for example at the University of Exeter.⁸⁷ Currently there are not many equivalent “green” qualifications at level 2 and level 3. Anecdotal evidence within Colleges suggests that there is a demand for qualifications at levels 2 and 3 and also at foundation degree level, however without support and flexibility Colleges find it difficult to offer these.

If the nation needs skilled people in these areas to fulfil the green collar jobs then the curriculum needs to have the necessary tools to provide the skilled workers needed. The current set of qualifications on offer only reflects the professions available now rather than what might be available in 5 or 10 years.

2.2 We ask for flexibility in funding to allow Colleges to develop innovative programmes that will not only respond to emerging sustainable practices and technologies, but allow Colleges to develop courses that will anticipate and encourage new trends. We also ask for Government support for both Colleges and industry to ensure that such innovation is seen as a worthwhile investment.

There are already many examples of the positive response being made by Colleges to the development of green jobs as can be seen by their entries to national competitions such as the Green Gown Competition in which Colleges are currently winning many of the prizes in competition with the Universities sector.

28 May 2009

CASE STUDY: AoC STRATEGIC SKILLS GROUP FOR CONSTRUCTION

The AoC Strategic Skills Group for Construction recognises the importance of the Sustainable Construction Agenda to the environment, the economy and ultimately skills development and has begun the process of informing its membership of the issues involved whilst engaging in a wider dissemination. It has been agreed that the Group will use seminars—at each alternate meeting—to raise priority issues—and to establish a way forward for colleges.

The first seminar was held in the College of North West London and focused specifically on housing and the implications for existing housing stock and new housing. Gavin Killip, Oxford University, presented and raised issues around the eco-refurbishment of the housing stock. He suggested that this was the priority, rather than concentrating on new housing that would simply reduce the addition to emissions rather than reducing emissions as whole.

Key issues identified by Gavin Killip and members were:

- As stated above, concentrating on new build issues will not reduce emissions—it will simply reduce the rate of increase.
- There are few incentives for existing home owners to invest in green technologies and therefore the demand for such technologies and services is minimal—at this point in time home owners do not see it as a worthwhile investment and are seeking support.
- Construction service providers and manufacturers do not see the urgency to “create the market” for whilst consumers acknowledge the “green agenda” they do not believe the investment worthwhile when finance is difficult to obtain and there is no government support.
- Training providers (colleges) are enthusiastic about taking the lead in terms of creating the demand for skills but are floundering in terms of what should be the priorities and equally they are concerned that they may not have the correct focus for investment and any future employment opportunities for their trainees.

⁸⁷ http://www.exeter.ac.uk/cornwall/academic_departments/csm/undergraduate-study/renewable-energy/index.shtml

- Government steer is seen to be critical—particularly through building regulation mechanisms in relation to the existing housing stock.

At the last meeting of the group attended by Iain Wright MP, Parliamentary under Secretary for Communities and Local Government (with responsibilities for housing and sustainable development) he acknowledged the importance of “retro-fit” of the existing housing stock to the agenda.

The next meeting of the AoC SSG for Construction will focus upon developing qualifications for the sustainable construction agenda and will use information drawn from a recent survey of colleges on supply and demand.

Memorandum submitted by EEF

SUMMARY

- The current policy framework must be complemented by a more proactive and focussed industrial policy if the UK is to capture the maximum economic benefit from the transition to a greener economy.
- To date, policy has focused creating financial incentives to consume less, or lower carbon, energy, create less waste, and recycle more. Consistent and long-term price signals are necessary to stimulate markets for green goods and services but not sufficient to stimulate development of the industries which supply them.
- Failure to implement a pro-active green industrial strategy could see the UK miss out on skilled manufacturing jobs in industries supplying major global markets and put at risk employment in R&D.
- Government must set out a clear industrial strategy which signals to potential investors what it is trying to achieve, how it will achieve it and over what timescales.
- The strategy should be to focus on two main objectives: (1) creating a world-class business environment for manufacturing and (2) identifying and supporting the most promising low-carbon industries for the UK.
- Developing a strong industrial base and attracting inward investment in green manufacturing will require an appropriately skilled workforce. A steady flow of school and university leavers with STEM skills, a strong apprenticeship system to teach the practical and technical skills on which manufacturing depends, and a continuous commitment to upskilling from employers, employees and government will be critical.
- Where requirements for new specialist skills emerge, Sector Skills Councils will need to collaborate to develop new qualifications frameworks. The skills and training landscape is already crowded and complex. So the emphasis should be on collaboration between existing bodies rather than the creation of new institutions.

INTRODUCTION

1. EEF is the representative voice of manufacturing, engineering and technology-based businesses with a membership of 6,000 companies employing around 800,000 people. A large part of our representational work focuses on the issues that make a difference to the productivity and competitiveness of UK manufacturing, including regulation, investment, innovation, skills and tax issues.

2. This memorandum is a submission to the Environmental Audit Committee’s inquiry into the prospects for green jobs and policies aimed at increasing employment in environmental industries.

EXISTING POLICY FRAMEWORK

3. The current policy framework must be complemented by a more proactive and focussed industrial policy if the UK is to capture the maximum economic benefit from the transition to a greener economy. Failure to do so will mean that the UK risks missing out on developing industries which could generate substantial wealth and become major sources of high-quality jobs.

4. Government has already done much to encourage and cajole the transition to a low-carbon and resource-efficient economy in the UK. Extremely ambitious long-term targets for renewable energy generation, recycling and emission reductions have been set and backed up by a battery of financial incentives and regulations.

5. Policy has focused on sending “price signals”—ie creating financial incentives to consume less, or lower carbon, energy, create less waste, and recycle more. Prominent examples include emissions trading schemes, subsidies for renewable energy, the Climate Change Levy, the Landfill Tax and the linkage of Vehicle Excise Duty to carbon dioxide emissions.

6. The price signals these policies create, when they are consistent and maintained over time, are very important because they help stimulate demand for low-carbon goods and services. However, financial incentives to consume low-carbon products, be they cars, energy or domestic appliances, will not be sufficient to ensure that the UK develops the industries which supply them. Products can, obviously, quite easily be developed and manufactured in one country and supplied into another. Investors will favour locations with the best business environments, the best expected returns on investments and the lowest risk.

7. The wind energy industry provides a perfect example. Despite having some of the most generous wind energy subsidies in £/MWh terms, the wind turbines now being deployed at an increasingly rapid rate in the UK are mainly manufactured overseas.

8. The expansion of low-carbon energy supplies and growth in markets for green goods and services will undoubtedly create significant employment in wide range of professional, technical and financial services. However, unless industrial development is encouraged in parallel, the UK will miss out on the opportunity to develop skilled manufacturing jobs in sectors with major export potential such as low carbon vehicles and clean coal technologies. Failure to cultivate manufacturing could also place employment in R&D at risk. There is evidence to suggest that in the long-run companies favour locating R&D close to manufacturing activity.

LOW CARBON INDUSTRIAL STRATEGY

9. The industrialisation of new and emerging technologies is costly, lengthy and risky. A frequent criticism of UK industrial policy, compared to that in other countries, is that it lacks a clear agenda. Government must set out a clear strategy which signals to potential investors what it is trying to achieve, over what timescales, and how policy will be used to deliver the desired outcome.

10. The strategy should be built around two main objectives: (1) creating a world-class business environment for manufacturing and (2) identifying and supporting the most promising low-carbon industries for the UK.

11. Shaping the business environment and nurturing the development of emerging industries are not trivial exercises. To have credibility and make an impact, the strategy must be positioned as a long-term undertaking and should set out a broad plan for at least the next five to 10 years. This will reduce the perceived political risk of making costly long-term investments in the UK against the strategy.

Creating a world-class business environment for manufacturing

12. The business environment of a country is created by the complex interplay of a number of factors such as taxation, access to finance, innovation policy, the skills of the workforce and infrastructure. Manufacturing will tend to focus, all other things being equal, in countries with the most conducive business environments. So government's first priority must be to ensure that the UK is amongst the most attractive locations for high-value manufacturing and the investments in plant, capital equipment, training and R&D that it depends on.

13. The strategy should set out a plan for reviewing and improving the business environment for manufacturing. Government should commit to undertaking a comprehensive audit and making any necessary reforms over the medium-term. The tax system's treatment of capital investments is an example of an area in urgent need of reform.

Identifying and supporting priority industries

14. The strategy should identify the most promising low-carbon industries and make a long-term commitment to support them. Constraints on resources, international competition and the fact that the UK is significantly better placed in some industries than others, mean that support will need to be tightly focused.

15. Government has typically had an aversion to "picking winners" based on the belief that it is more efficient to let the market alone decide which technologies to back and that any intervention risks supporting the wrong technology and becoming a costly mistake. However, the risk runs both ways, especially when dealing with early-stage technologies. Failure to back technologies which are potential winners means the UK could miss out on being at the forefront of some of the major industries of tomorrow.

16. Rather than managing risk by avoiding taking any chances or making strategic decisions, government should develop a more sophisticated approach to risk management in industrial policy. Identifying priority industries on the basis of the markets they serve rather than specific technologies and focusing support on a portfolio of industries selected through robust criteria will help minimise the risks. Market potential, UK competitive advantage and clear evidence of market failure should be important criteria when identifying priority industries.

17. Funding should be focused on priority industries and targeted at market failures not adequately addressed by existing support. A greater share of existing R&D funding should be allocated to low-carbon technologies. New funding, like the Low Carbon Investment Fund, should be directed exclusively at priority industries and targeted at issues such as setting up low-volume manufacturing facilities and supply chain development.

18. Policy should focus on stimulating demand in industries in which the UK has the opportunity to create early and significant domestic markets. Signals to private consumers must be clear and reliable (eg replace the Renewables Obligation with feed-in tariffs for marine renewables) and public procurement should be leveraged wherever possible (eg replicate the Low Carbon Vehicles Procurement Programme for renewable heating).

SKILLS BASE

19. Developing a strong industrial base and attracting inward investment in green manufacturing will require an appropriately skilled workforce. STEM skills, a strong apprenticeship system to teach the practical and technical skills on which manufacturing depends, and a continuous commitment to improving skills from employers, employees and government will be critical.

20. The fundamental requirement for developing a strong green industrial sector ensuring a flow of people with STEM qualifications from schools and universities. These core science and engineering skills will continue to provide the foundation for research, design and development activities. Government, employers and society in general must seize the opportunity to encourage young people to study STEM qualifications by promoting the skilled and exciting jobs opportunities that addressing climate change provides.

21. STEM qualifications need to be combined with the practical and technical skills crucial to a successful career in the manufacturing sector. Therefore, a strong apprenticeship system will also be crucial to creating and sustaining the workforce required to develop a green industrial base.

22. Technologies, markets and industries constantly evolve and workforce skills will need to keep pace. UK manufacturers have achieved considerable success in this area in recent years. Despite often quite challenging trading conditions, the manufacturing sector has grown employment in professional and technical occupations have grown. To develop strengths and capabilities to gain/maintain competitive advantage in “green industries” this emphasis on upskilling will need to continue.

23. Inevitably, in some areas a need will emerge for a new range of specialist skills specific to environmental industries. The breadth of activity and skill requirements across the UK’s diverse manufacturing base means that employers already source training solutions (eg bespoke short courses and recognised qualifications) from a similarly diverse range of providers—(eg in house training, FE and HEIs).

24. Responding to the need for new specialist skills will require collaboration and coordination across Sector Skills Councils to develop new qualifications frameworks. The skills and training landscape is already crowded and complex. So the emphasis should be on collaboration between existing bodies rather than the creation of new institutions (eg Sector Skills Councils and Skills Academies).

CONCLUSIONS

25. Government must set out an ambitious green industrial strategy backed up by a world-class business environment, focused funding and creative use of policy tools such as public procurement. Failure to do so will mean the UK runs the risks of missing out on the growth industries of tomorrow and the skilled employment opportunities that they provide.

26. Developing a strong industrial base and attracting inward investment in green manufacturing will require an appropriately skilled workforce. A steady flow of school and university leavers with STEM skills, a strong apprenticeship system to teach the practical and technical skills on which manufacturing depends, and a continuous commitment to upskilling from employers, employees and government will be critical.

27 May 2009

Memorandum submitted by the Association of Chartered Certified Accountants (ACCA)

1. INTRODUCTION

1.1 The Association of Chartered Certified Accountants (ACCA) welcomes the opportunity to respond to the Environmental Audit Committee’s inquiry into the prospects for green jobs and policies aimed at increasing employment in environmental industries. Our global footprint and expertise puts us in a strong position to comment on these issues.

1.2 ACCA is the global body for professional accountants. We aim to offer business-relevant, first-choice qualifications to people around the world who seek a rewarding career in accountancy, finance and management.

1.3 ACCA has its headquarters in London and 141,330 of our members, students and affiliates are based in the UK. Globally, we support our 131,500 members and 362,000 students throughout their careers, providing services through a network of 82 offices and centres around the world.

1.4 We have been actively involved in the unfolding debate on corporate social responsibility since 1990, helping businesses and organisations realise the growing importance of sustainability to them. In particular, we have promoted transparency and best practice by championing the extension of corporate reporting to include the social and environmental aspects of a business.

1.5 In 2002 ACCA became the first professional body to be awarded the prestigious Queen's Award for Sustainable Development. We are also members of the advisory group of the Climate Disclosure Standards Board and of the Executive Board of the "Accounting for Sustainability" project launched by HRH the Prince of Wales.

1.6 Figures show that the UK green goods and services sector is already the 6th biggest in the world, worth £107 billion per annum and employing over 880,000 people in the UK.⁸⁸

2. SUMMARY OF KEY POINTS

2.1 The move to a low carbon economy should be done as quickly as possible and with collaborative international effort unseen on a global scale before.

2.2 The "green" component of the UK's stimulus package should be at least 20% of the total, consistent with the recommendations of Lord Nicholas Stern. The announced stimulus has not therefore taken advantage of the opportunity to reinvigorate the economy with green growth and jobs.

2.3 ACCA believes that the Treasury should publish an assessment of the net impacts of its fiscal stimulus package on the environment.

2.4 ACCA welcomes the 2009 Budget as the first low-carbon budget, and supports the government on the adoption of an ambitious emissions target for 2020. Investing in the green economy is an effective way to stimulate economic recovery, boost investment and create jobs. The Government must continue this momentum.

2.5 ACCA believes that funding pledges will need to be sustained over time and backed by coherent policy if the Government's long-term targets are to be met. While many of the measures announced in the Budget are a step in the right direction, they are not yet enough to achieve the announced 34% greenhouse gas reduction target by 2020. For example, unless financial support for renewables announced in the 2009 Budget is accompanied by policies and measures aimed at improving both the planning system and the grid, the UK is likely to miss its renewable energy goals of 15% by 2020.

2.6 The UK has a significant opportunity to become a world leader in low carbon technologies such as wind, tidal, carbon capture and storage and clean vehicles. However, this cannot be achieved without clearer, stronger and longer-term commitments and policies from Government.

2.7 ACCA believes that the Low Carbon Industrial Strategy (LCIS) represents the Government's greatest commitment so far to making a low carbon economy happen, but that it does not yet contain enough concrete proposals.

2.8 ACCA believes that the Government has to provide industry with the right set of regulations, Government grants and other incentives, and to create the investment climate that will encourage the investment of private capital required to build a low carbon economy. This means consistency, clarity and certainty in the implementation of policy and legislation. This is the only way we can green the economy in the midst of a recession.

2.9 Many of the points in the LCIS focus on the longer term, such as the establishment of new nuclear power plants. ACCA believes that there needs to be a greater focus in the LCIS on policies that make a difference immediately, and that the Government needs to ensure that it is agile enough to ensure that the planning system and the incentives enable developments to take place.

2.10 The UK will not be able to take advantage of the emerging environmental industries market unless we have the right skills base and policies to promote future growth in the country's environmental industry. We recommend that the Government outline its plans to develop the skills base for the UK's environmental industries in the form of an environmental industry growth strategy.

3. *How can the UK maximise the environmentally positive opportunities arising from changes in public spending intended to help tackle the recession?*

3.1 While politicians struggle to retain votes and work economies out of recession, it is crucial that they acknowledge the climate crisis as well. Acting early, as key policy documents, economic forecasts and project proposals are urging, will raise our chances of diverting catastrophe at a reduced financial and environmental cost, while building a strong green economy.

3.2 To have any chance of reversing climate change, moving to a low-carbon economy is key. A low carbon economy—one that relies very little on fossil fuels and energy sources with high greenhouse gas emissions—will improve the planet's success rate of tackling the climate predicament. It can be done. Masdar City in Abu Dhabi is under construction and aspires to be the world's first zero-carbon, zero-waste

⁸⁸ <http://www.berr.gov.uk/files/file50254.pdf>

city powered entirely by renewable energy sources. Britain has set the pace by setting a legal target of 80% reduction in carbon emissions by 2050 (1990 baseline). The move to a low carbon economy should be done as quickly as possible and with collaborative international effort unseen on a global scale before.

3.3 HSBC has published a report⁸⁹ ranking 17 countries by the green elements of their economic-stimulus packages. South Korea has set aside 81% of its fiscal stimulus to investing in a green economy. China has allocated 38% and the US 12%, behind Germany and France. The UK, however, is investing just 7% of its stimulus in green areas.

3.4 April 2009 saw the UK's first low carbon Budget. The Chancellor committed over £1.4 billion of extra targeted support to the low-carbon sector, to help combat climate change and support low carbon industries and "green collar jobs". ACCA welcomes this and supports the government on the adoption of an ambitious emissions target for 2020. Investing in the green economy is an effective way to stimulate economic recovery, boost investment and create jobs. The Government must continue this momentum.

3.5 ACCA believes that funding pledges will need to be sustained over time and backed by coherent policy if the Government's long-term targets are to be met. While many of the measures announced in the Budget are a step in the right direction they are not yet enough to achieve the announced 34% greenhouse gas reduction target by 2020.

3.6 Of the various measures in the Budget 2009, ACCA particularly welcomes the additional boost for renewables supported by the boost for Renewable Obligation Certificates (ROCs) and new investment from the European Investment Bank (EIB) aimed at relieving project finance. However, unless this financial support is accompanied by policies and measures aimed at improving both the planning system and the grid, the UK is likely to miss its renewable energy goals of 15% by 2020.

3.7 Energy efficiency is a significant short-term opportunity for the UK to reduce emissions, but the £375 million to support energy and resource efficiency in businesses, public buildings and households over the next two years, and £70 million for decentralised small-scale and community low-carbon energy announced in the 2009 Budget is insufficient, especially in the absence of tighter fuel efficiency standards for vehicles and appliances.

3.8 More attention should also be focused on establishing the policies needed for renewable heat and micro-generation. These are not yet in place, and far greater funding is needed to make them viable for households and small businesses.

3.9 The UK has a significant opportunity to become a world leader in low carbon technologies such as wind, tidal, carbon capture and storage and clean vehicles. However, this cannot be achieved without clearer, stronger and longer-term commitments and policies from Government.

4. *To what extent will the Government's long-term policy framework, including environmental regulations, tax changes or new market instruments, encourage low-carbon investment and increase employment in environmental industries and their associated supply chains?*

4.1 The global financial crisis and spreading economic downturn, the associated volatile markets and extensive job losses, the unprecedented collaborative £3 trillion finance sector bailout have all led to the question: what type of future does the green economy have?

4.2 For pessimists, the current economic downturn has substantially delayed green economy plans, with governments now pre-occupied with the recession and focusing on fiscal stimulus measures. The phenomenal financial bailout has prevented any large scale investment in climate change mitigation and the green energy sector. The economic downturn will lead to a decline in direct investments and reduce the rigour of future climate change legislation and environmental taxes to protect the competitiveness of industry in the dire financial climate.

4.3 For optimists, the twin crunches of climate and finance has led to a unique and incredible opportunity to re-build the global markets with systems sympathetic to climate change, that value societal and environmental costs, and that are sustainable in the truest sense. The trillion dollar banking sector bailout is proof that governments can work together, quickly, to help resolve global catastrophes. The green labour market will thrive within the green economy, the future of the planet will improve, and equity among society will begin to become re-balanced.

4.4 One group of eminent optimists, the Green New Deal Group, has prepared a substantial and technically robust proposal to governments in order to "pull the world back from economic and environmental meltdown". Their work has been inspired by Roosevelt's New Deal that was launched to halt the Great Depression of the 1930's. Structural changes to international financial and taxation systems, together with calls to invest in energy systems, are comprehensively proposed. Their agenda, which requires action at local, national, regional and global levels, includes calls for:

- executing a bold vision for, and investing in, a low-carbon energy system;
- creating and training a "carbon army" of workers;
- ensuring more realistic fossil fuel prices that include the cost to the environment; and

⁸⁹ http://globaldashboard.org/wp-content/uploads/2009/HSBC_Green_New_Deal.pdf

- re-regulating the domestic financial system.

4.5 The UN and leading economists have recently launched a similar reform package—their Green Economy Initiative (GEI)—which aims to “mobilise and re-focus the global economy towards investments in clean technologies and natural infrastructure to combat climate change and trigger an employment boom in the 21st century”. The project has identified changing patterns of employment and investment resulting from efforts to reduce climate change and its effects are already generating new jobs in many sectors and economies, and could create millions more in both developed and developing countries.

5. *The economic and social benefits of planned green investments and the extent to which the changes in spending will contribute to sustainable development and environmental protection.*

5.1 The 2008 Pre-Budget Report announced a £535 million package of fiscal stimulus measures designed to tackle economic and environmental problems simultaneously. However, very little of the £3 billion total stimulus was focused on green technologies and most of the announced funding was already committed elsewhere. At the same time, a significant amount of it was used for road building and widening, rather than on investment in public transport. At the same time, the Government has taken the decision to go ahead with a third runway at Heathrow, something which calls into question the consistency and credibility of the Government’s policies on climate change and which will hamper the country’s ability to meet climate change targets. ACCA believes that the Treasury should publish an assessment of the net impacts of its fiscal stimulus package on the environment.

5.2 Through a purely economic lens, the Stern review—published in October 2006—estimated that “business as usual” would incur a 5–10% loss of global GDP. When taking into account other issues such as impact on the environment and human health, total estimated cost of climate change increases to a 20% reduction in consumption per head. Alternatively, taking some immediate drastic action to stabilise carbon emissions by 2050 was estimated to be at a cost of about around 1% of GDP—significantly less than the “business as usual” scenario.

5.3 The Stern Review found that, by 2050, investment in energy security and environmental clean-up technologies, a fundamental part of the fabric of a low-carbon economy, would be over US\$13 trillion. The proliferation of new industries and employment would be overwhelming.

5.4 Despite the recession, a number of governments and corporations are already harnessing the potential gains that green-collar investment can bring:

- In a bid to stimulate the Australian economy, its Prime Minister, Kevin Rudd, has called for a “solar revolution” and has provided an A\$500 million fund to promote renewable energy.
- The new US President, Barack Obama, has made an encouraging start. He has recruited Nobel prize-winning physicist Steve Chu as the next energy secretary. Chu promoted research on biofuels, solar power and energy efficiency in his previous roles. The President has also appointed one of the world’s leading climate change experts, John Holdren, as director of the White House Office of Science and Technology Policy.
- Portugal has emerged as an unexpected success story in terms of the transition to a low carbon economy. Using existing hydro technology and cutting edge wind, solar and tidal technologies, they confidently predict 31% of energy requirements coming from renewables by 2020.
- British Telecom plc (BT) is the UK’s biggest customer of green electricity. It has recently announced it will build its own wind farms which will be operational by 2012 and provide 25% of its UK electricity needs by 2016. BT has a comprehensive, detailed climate change strategy covering its operations, customers, employees and suppliers. In 2007, its chief executive pledged to lead in the business response to climate change.
- Wal-Mart Stores Inc. has established a partnership with many of its suppliers to facilitate the creation of green jobs in the United States. At an inaugural meeting of the Wal-Mart Green Jobs Council, participants identified their top catalysts for creating green jobs.

5.5 The Government should ensure that it looks at and learns from best practice from around the world.

6. *Will the green fiscal stimulus maximise employment opportunities in environmental industries, and what is the nature of the jobs that might be created?*

6.1 The “green” component of the UK’s stimulus package should be at least 20% of the total, consistent with the recommendations of Lord Nicholas Stern. The announced stimulus has not therefore taken advantage of the opportunity to reinvigorate the economy with green growth and jobs.

6.2 The United Nations has predicted an acceleration of green job creation in the years ahead, as well as the creation of a large number of jobs across many sectors. This coincides with Lord Stern’s calculation that a “massive shift towards low-carbon technologies will be accompanied a shift in employment patterns” and that “25 million people will be working in these sectors by 2050”.

6.3 The term “green-collar” has been described in various ways, but the clearest is perhaps this definition from the UN:

“Green jobs are those in positions in agricultural, manufacturing, R&D, administrative, and service activities aimed at alleviating the myriad of environmental threats faced by humanity. Specifically, but not exclusively, this includes jobs that help protect and restore ecosystems and biodiversity, reduce energy, materials, and water consumption through high efficiency and avoidance strategies, decarbonise the economy, and minimise or altogether avoid generation of all forms of waste and pollution.”

6.4 The typical green economy industries include renewables, energy efficiency in buildings, organic agriculture and sustainable transportation. Many jobs already exist in energy-efficiency, sustainability and corporate social responsibility sector.

6.5 As “green” investment continues, particular sectors where the UK is likely to benefit include, for example (this is not an exhaustive list):

- Specialist construction (for example, constructing wind farms).
- Construction (including building new, energy efficient or eco homes and retrofitting the UKs existing housing stock and places of business).
- Energy efficiency (such as installing solar panels, roofers, insulation installers, building inspectors).
- Research and technology, especially in terms of software, machinery and equipment (such as coming up with new ways to build efficient biofuel engines, smart metering and other green technology developments).
- Transport (including those required to expand and maintain public transport systems, eg civil engineers, building service engineers and electricians).
- Financial services (for example, accountants, to assist with carbon forecasting, accounting and management etc.).
- The same jobs as people are currently employed in (for example, machine operators in factories, people transporting goods etc.).

National Examples:

- *Germany* is a low-carbon, green economy success story, already employing a quarter of a million people in the renewables sector alone with a turnover of 24 billion Euros. Predictions push the renewables workforce figure up to 710,000 by 2030. A UNEP report in 2008⁹⁰ predicts that Germany’s renewable energy sector will be larger than the automobile and machine manufacturing in the next 10 years.
- *Australia’s* national science agency, CSIRO, has explored the skills, innovation and workforce dimensions of the transition in Australia to a low carbon society. The key results have found that achieving rapid transition to sustainability would have no detrimental impact on national employment. Employment in sectors with high potential environmental impacts will grow strongly, with increases of more than 10% over 10 years. This will add 230,000–340,000 new jobs in the transport, construction, agriculture, manufacturing and mining sectors.
- *The USA’s* House and Senate have recently approved Obama’s economic stimulus package. A healthy US\$100 billion will be allocated to energy efficiency and renewables’ programmes, including \$20 billion of tax breaks, \$30 billion for investing in smart grid technologies and \$10 billion to spend improving the energy efficiency of public sector buildings. A further \$16 billion has been pledged to be used on mass transit and high-speed rail link projects.
- The American Solar Energy Society has predicted as much as a quarter of the US workforce could have a “green job” by 2030.

7. What does the Low Carbon Industrial Strategy need to deliver, how, and by when?

7.1 BERR and DECC have published the LCIS. The document highlights a range of companies in the UK that are already taking advantage of low carbon opportunities, and sets out the scope and ambition of the Government’s plans. It aims for “step changes” in four key areas, namely: improved energy efficiency; the development of an energy infrastructure for a low carbon future; the establishment of the UK as a global leader in the development and production of low carbon vehicles; and the positioning of the UK as the best place to locate and develop a low carbon business by developing its skills, infrastructure, procurement, research and development.

7.2 ACCA believes that the LCIS represents the Government’s greatest commitment so far to making a low carbon economy happen, but that it does not yet contain enough concrete proposals. We acknowledge though, and welcome, that BERR and DECC are gathering input from businesses and other interested parties before a final strategy document is published in the summer.

⁹⁰ http://www.unep.org/PDF/UNEPGreenJobs_report08.pdf

7.3 ACCA believes that the Government has to provide industry with the right set of regulations, Government grants and other incentives, and to create the investment climate that will encourage the investment of private capital required to build a low carbon economy. This means consistency, clarity and certainty in the implementation of policy and legislation. This is the only way we can green the economy in the midst of a recession.

7.4 Many of the points in the LCIS focus on the longer term, such as the establishment of new nuclear power plants, which are unlikely to be built for at least 10 years, and which only begin to produce low carbon energy once they have been switched on (until that point in their construction release huge amounts of greenhouse gas emissions).

7.5 ACCA believes that there needs to be a greater focus in the LCIS on policies that make a difference *immediately*, and that the Government needs to ensure that it is agile enough to ensure that the planning system and the incentives enable developments to take place.

8. *Do you have any comment on the skills base for the UK environmental industries, and the effectiveness of Government policies to improve and enlarge it?*

8.1 The UK will not be able to take advantage of the emerging environmental industries market unless we have the right skills base and policies to promote future growth in the country's environmental industry. The Government outlined its views in its publication *Building a low Carbon economy Unlocking Innovation and Skills*,⁹¹ which acknowledges the need to develop a skilled workforce and create partnerships with businesses and education institutions, as well as stating that the Government has to set a long-term policy framework.

8.2 We recommend that the Government outline its plans to develop the skills base for the UK's environmental industries in the form of an environmental industry growth strategy.

8.3 ACCA further believes that there should be an increase in financial support to universities and scientific institutions for research and development into innovative environmental technologies. This would assist in developing the skills required.

8.4 ACCA would support the Government taking a formal approach to facilitating high-quality training, for example, in ensuring sustainable construction. We also note that many of the companies involved in the environmental sector are small, medium and micro companies, which are often among the most innovative. There should be a special focus on supporting these enterprises with training.

8.5 Further, ACCA believes that promoting career opportunities in the environmental sector, especially amongst young people in schools, colleges and universities, through support for industrial placements and developing vocational qualifications, would particularly assist in developing skills over the long-term.

8.6 The environmental sector, (apart from in the services sector), is in many cases a highly qualified sector in terms of technical and scientific skills (geologists, engineers, microbiologists etc). These areas would benefit from particular support.

28 May 2009

Memorandum submitted by the Commission for Architecture and the Built Environment (CABE)

CABE is the government's statutory advisor on architecture, urban design and public space, sponsored by the Department for Communities and Local Government and the Department for Culture Media and Sport.

The global environmental crisis we face is, in large part, a planning and design crisis. It is a consequence of how things are made, resources are used, land is developed, buildings are constructed, services are supplied and places are connected. So tackling climate change involves thinking hard about the design of towns and cities and how we live in them, and developing the knowledge, skills and jobs to respond, adapt and innovate. The UK's environmental industries can be a world leader in helping to reduce greenhouse gases without hampering economic growth.

KEY RECOMMENDATIONS

- The definition of "Environmental Industries" should include the built environment and green space sectors in recognition of the contribution they make to meeting the Carbon Reduction Commitment as stipulated in the Climate Change Act 2008.

Government has made commitments to delivering a low and zero carbon built environment. In addition, the Planning Act 2008 imposes a statutory duty on local authorities to deliver good design and sustainability, which has a direct impact on skills for both the built environment and green space sectors.

⁹¹ http://www.eauc.org.uk/file_uploads/cemep-response.pdf

- Skills in the built environment trades and professions need to be supported in order to ensure that the carbon reduction commitments outlined in the Heat and Energy Strategy and Low and Zero Carbon Building strategies are delivered.

In particular training for architects, builders, and engineers to take a “whole house” approach to retrofitting existing properties with low and zero carbon technologies, as well as efficiency measures.

- Green infrastructure is vital to mitigating and adapting to climate change through providing a natural systems approach to alleviating the urban heat island effect, reducing flood risk and other important functions.

The green space sector is facing a chronic shortage of people with the skills to deliver the well designed and maintained green infrastructure. The sector must be supported to provide further skills development and routes to entry into the industry.

- Financial instruments promoting uptake of low/zero carbon and efficiency technologies should be explored and implemented, these could include the reduction of VAT to 5% on all refurbishment costs and/or council tax rebates to property owners. This would create further certainty in the market for the development of these new technologies.

THE BUILT ENVIRONMENT AND GREEN SPACE SECTORS: ENVIRONMENTAL INDUSTRIES

It is important that the built environment and green space sectors are included in definitions of environmental industries in any low carbon economic strategy, as they are critical to delivering carbon reductions and adapting to the impacts of climate change. The construction and use of our homes and other buildings produces approximately 45% of the UK’s carbon emissions. Around 75% of the current building stock will still be standing in 2050. Progress on energy efficiency—the cheapest way to reduce carbon emissions—has been slow but the UK government is now moving fast to catch up with other northern European countries.

The Heat and Energy Strategy recently published by the Department for Climate Change and Energy (DECC) has set a target for a near zero carbon built environment by 2080. If this is to be achieved then we must create the skills base and industry certainty to support this objective.

CABE is committed to working with Government to find environmentally and economically viable solutions to creating a low or zero carbon built environment. This is one of the reasons why we have created www.sustainablecities.org.uk an online resource for local authority leaders to gain access to expert advice and guidance on creating a more sustainable built environment.

The built environment offer exciting new opportunities for energy efficiency, generation and distribution. The delivery of community energy systems can only be led from a wider town planning and masterplanning level and local authorities are therefore well placed to lead on thermal masterplanning. There are a number of northern European examples of such approaches including Hammarby Sjöstad, and Copenhagen, and all have been initiated and led by the local planning authorities. Individual site scale developments are normally too small to make these systems financially viable.

Green infrastructure ranges from parks to play spaces, from cemeteries to allotments. As well as being vital in creating healthy, cohesive and sustainable communities, providing recreational space and contact with nature, this green infrastructure encourages more sustainable travel, acts as a carbon sink, and can reduce energy use by buildings for heating and cooling. Green spaces help to manage the effects of extreme weather conditions caused by climate change.

Increasing tree cover by 10% can reduce the surface temperature of a city by between three and four degrees centigrade. The prediction of hotter, drier summers means that it is vital to protect existing trees and prioritise the planting of new ones. Larger tree canopies contribute hugely to the shading and cooling of streets and buildings.

It is not only heat that is a dangerous effect of climate change. Flooding too is a serious concern. The most economically damaging aspect of climate change to date has been extreme wet weather. The UK summer floods in 2007 caused 13 deaths, flooded 48,000 homes and 7,300 businesses, cost £3 billion and for a time left several urban areas without drinking water or power. Although the potential impacts of extreme weather are inherently uncertain, they can be substantially reduced.

One of the best ways to mitigate the impact of flood risk is by restoring flood plains. These spaces can be used for recreation and wildlife habitats. Creating green corridors along rivers on the flood plains, with storm water lakes for fishing and boating, picnic sites, trees, and cover for wildlife, are an efficient, environmentally sound approach to flood prevention. The Milton Keynes flood plains forest involves the restoration of a site adjacent to the River Nene to create a new landscape with much greater flood storage capacity.

Green assets, whether on or around buildings, must be managed at a strategic level in order to provide the best results. For developers and building owners it is important to recognise the benefits of using ecological processes to achieve a more economically and environmentally sustainable built environment.

THE JOBS AND SKILLS CHALLENGES

Proponents of the Green New Deal argue that massive public investments and fiscal incentives can lay the foundations for the private sector to develop new industries and create millions of jobs in the short term, and protect the environment in the medium term.

The Homes and Communities Agency Academy's *Mind the Skills Gap* (2007) report assessed the gaps in supply and demand of the skills required to deliver sustainable communities. The study concluded that there weren't enough people with the right skills in the right places to deliver the government's ambitious agenda for creating sustainable communities across England.

The report analysed skills gaps by occupation. Landscape architects, urban designers, and architects were considered together as being concerned with the design and management of buildings and the public realm. Labour shortages were forecast to increase significantly up to 2012 for urban design and landscape architecture as a reflection of the growing demand for design skills and the lack of increase in supply. This was, of course, before the credit crunch and the redundancies which have followed. An action plan to support skills development and address labour shortages in key occupations is currently being produced by the HCA Academy in partnership with key built environment and green space organisations.

Future skills development and training will need to be driven by technological advances, and ever tougher carbon/energy efficiency standards, and issues around place-making and community cohesion. There is evidence of some difficulty or resistance among education providers to get up to date experience and knowledge, and develop their work quickly enough, to keep pace with change. Students need to be prepared for the challenges they will face. As they move into professional life, they will find themselves in roles that involve delivering a step-change in the design quality and management of our towns and cities.

Achieving tougher environmental standards will form an important aspect of professional life. Practitioners are already expected to play a proactive role in achieving government objectives for reducing carbon emissions from the built environment, through the zero carbon homes programme (Building a greener future: policy statement, CLG, July 2007) and programmes relating to new non domestic buildings and existing homes and buildings, including historic environments (Climate change and the historic environment, English Heritage, 2008). The skills and learning gained at undergraduate and postgraduate level needs to provide a sound foundation to meet these challenges and proactive approaches to life-long learning. More effort and investment is needed to meet this challenge.

BUILT ENVIRONMENT SKILLS

The built environment sector will have an important role in laying the foundations for the emergence and mass roll-out of a set of resilient low carbon interventions—mitigations, adaptations and innovations—rich in new jobs and based upon independent sources of energy supply. However this requires an investment in the skills in the sector to ensure the right workforce is in place to deliver.

There are two main skills shortages within the built environment sector that we are primarily concerned with in the context of delivering a low carbon built environment: planning and implementation.

The CLG Planning matters inquiry (HC 517-I, July 2008) concluded that England's planning system underpins the country's economic growth and development, but there is a significant risk that that major Government targets for housebuilding and regeneration will be missed because the system is unable to manage the volume or variety of tasks required between now and 2020. Lord Stern's report on Climate Change also pointed to the strategic importance of planning in coordinating a response to climate change adaptation and mitigation.

Wider economic well-being and delivery of the Government's environmental priorities could well be hindered simply because the system cannot cope. Two linked and chronic problems need to be urgently addressed to prevent this. There is a drastic shortage of planning officers, estimated to affect 46% of local authority posts by 2012. There is also a significant and growing skills gap among those planners who remain within the system.

These problems have been recognised for more than a decade, but in spite of continued pressure for change, planning departments remain short of staff and likely to be so for the foreseeable future. The CLG committee concluded that government needs both to raise the general status of planning within local government structures and to provide means by which planners can widen and improve their skills to obtain the greatest benefit from developments for the localities they serve.

The independent report for the Department for Communities and Local Government (CLG) on *The credit crunch and regeneration: impact and implications* (January 2009) examines economic and financial impacts on the regeneration sector. The report notes concerns that if regeneration activity is halted now, a generation of skills and capacity which has been built upon during the last decade may be lost.

CABE and RIBA recently produced a briefing, *Skills for Low Carbon Building*. In the briefing we suggested that by developing their low carbon skills rapidly, practising architects and built environment professionals may gain competitive advantage from niche specialisation in low carbon design. Alternatively, simply having a stronger skills base and deeper knowledge of climate change and low carbon design issues will bring opportunities to build wider ranging relationships with clients and stakeholders who have an active interest in environmental issues.

The message emerging from CLG and CABE is that, despite pressures of reduced planning fee income and development activity, now is a time to retain planning and design skills, to focus on strategy and plan making, and to ensure the conditions are in place to expedite sound development decisions when the upturn occurs.

GREEN SPACE SKILLS

The successful planning, design and management of parks and the wider network of green infrastructure draws upon the skills of people working in a broad range of specialist occupations, from landscape architects to horticulturalists. The green space sector also requires management expertise, including skills such as advocacy and community engagement, in order to instil the public with motivation and confidence to use and enjoy green spaces and influence local authority decision making.

As we have seen above green infrastructure is vital in both mitigating and adapting to climate change, and so is likely to become an even more important sector in future. There are not enough people with the right skills to fill existing jobs, and at the same time green space departments are chronically under-funded and under-staffed.

We know from the research and consultancy that have informed our *Skills to Grow* strategy that there is some fantastically innovative and exciting work going on in the sector. There is, however, no single organisation that represents the full range of occupations that play a role in delivering high quality green space.

Local government is the principle employer for the sector, but green spaces management within local authorities is facing serious skills problems. CABE surveyed 54 green space managing departments in a range of local authorities. The findings highlight a number of common problems.

- 68% of authorities said a lack of skills in horticulture was affecting overall service delivery.
- 40% of departments said “lack of capacity to deliver” was the reason for not providing apprenticeships—however we also know from the survey that volunteering contributed an average of over 420 days per authority per year, or the equivalent of an extra two staff in person days. This demonstrates that there is significant interest in the sector and potential for growth.

People employed in the green space sector often have lower pay and status in comparison with other sectors. This is a key driver for the decline in green space skills which leads to poorer quality green spaces and low public expectations. In brief the issues facing the sector are:

- Problems with recruitment and retention of staff.
- Lack of workforce diversity.
- The existing range of skills is too narrow.
- The shortage of green space management and leadership skills.
- Lack of co-ordinated working across the sector.

Our *Skills to Grow* strategy outlines ways of meeting these challenges through an action plan. Already, in response to our strategy, the Government has committed to a £1 million “Green Apprentices” scheme. This will help with the costs of training and employing 60 new apprenticeships in deprived urban authorities across the country.

Similarly the Government has committed investment in developing new parks and green spaces. CABE is now seeking to ensure that we have the necessary people with the right skills to implement these ambitions.

4 June 2009

Memorandum submitted by the Engineering and Technology Board (ETB) and the Royal Academy of Engineering (RAEng) (with the support of the Institute of Marine Engineering, Science and Technology (IMAREST), the TWI (The Welding Institute), the Chartered Institution of Water and Environmental Management (CIWEM), the Chartered Institute of Plumbing and Heating Engineering (CIPHE), the Institute of Physics (IOP), the Institution of Chemical Engineers (IChemE), the Energy Institute, the Institution of Highways and Transportation (IHT), the Institution of Mechanical Engineers (IMechE), and the Engineering Council UK (ECuk))

1. The Engineering and Technology Board (ETB) and the Royal Academy of Engineering (RAEng) with the support of their partners welcome the opportunity to jointly respond to the Environmental Audit Committee’s Green jobs and skills inquiry. In our joint response to the inquiry, we have drawn on our experience and that of our partners as previously outlined.

2. The ETB is an independent organisation that promotes the essential role of engineers, engineering and technology in society. The ETB partners business and industry, Government and the wider STEM community. For more information about the ETB please visit www.etcuk.co.uk

3. The Royal Academy of Engineering (RAEng) brings together the country's most eminent engineers from all disciplines to promote excellence in the science, art and practice of engineering. The Academy's contribution to this response has been formulated from the views of a number of Fellows of the Academy with expertise and experience of relevant fields in both industry and academia. For more information about the RAEng please visit www.raeng.org.uk

4. EXECUTIVE SUMMARY

5. To provide the best prospects for the economy and consequently for green jobs the Government should make it very clear what forms of technology it will support and fund and the incentives that will be in place for businesses that deliver these solutions. Additionally, given the complexity and scale of meeting the climate change challenge, it is crucial that the ultimate goal is clear—namely decarbonisation of the energy system—and that the mechanisms put in place to achieve this goal are as straightforward as possible and consistently adhered to. This will only be achieved through effective dialogue and partnerships between government, professional engineering institutions and industry.

6. Three particular 2009 Budget proposals that could have a significant impact on carbon reduction and environmental protection are the £9 billion efficiency savings target, the £750 million Strategic Investment Fund and potentially part of the £1.7 billion support for job centres.

7. The national and global drive towards low carbon technologies and greener services will undoubtedly result in many opportunities for new industries and jobs. If the UK is to benefit from this, clear, consistent and durable policy frameworks are needed.

8. The aim of the green agenda within Government should not be to maximise employment in the sector but primarily to maximise carbon reductions. Once conditions are in place to achieve this then the contribution of these industries to the economy and the associated employment can be maximised in the long-run.

9. The Government's stated desire, as part of the DIUS's Science and Society programme, to increase societal engagement in science and engineering, particularly with young people, would have widespread social benefits in terms of technological literacy, opportunity, overcoming the digital divide, increasing the supply of engineers and scientists working on the climate change agenda and allowing people to engage in the political process in a more technologically aware manner.

10. Data from a number of sources indicate that there is significant potential for growth in the UK and global renewable energy markets. Additionally we have identified associated careers in photovoltaic power generation, micro wind energy generation, biomass and micro hydro generation systems, as being "electrical trades and installation," "plumbing," "heating and ventilation" and "air conditioning and refrigeration." There is also a rising demand for a skilled workforce for other low carbon technologies such as nuclear, carbon capture and storage, smart grid systems, and low-carbon transport.

11. Given the interim goal of the Climate Change Act is to achieve a 26% reduction in carbon emissions by 2020, we would advise that support be provided as soon as possible. An ideal opportunity for this would be the Pre Budget Report later this year. It should also be noted that it will require constant and considerable innovation to develop the necessary technologies and to keep the UK internationally competitive. This innovation depends upon the continued health of the UK science and engineering base and increased links between that base and UK business.

12. It should be noted that although the term "green jobs" is widely used by the Government, it does not have a common, accepted definition. This poses a problem, not just in responding to this inquiry, but more seriously, in trying to design policies with this as their objective.

13. FULL RESPONSE—ARRANGED BY KEY ISSUE

14. *Prospects for green jobs and policies aimed at increasing employment in environmental industries*

15. Before answering the questions posed by this inquiry, it should be noted that although the term "green jobs" is widely used by the Government, it does not have a common, accepted definition. This poses a problem, not just in responding to this inquiry, but more seriously, in trying to design policies with this as their objective. In terms of technologies, "green" covers all renewable forms of generation but also low carbon generation. Energy efficiency must also be included within the term "green" and this can cover both products and services. When it comes to occupations, a job that is entirely "green" is rare. Some jobs may be, but what is more common is a trend in professions to be less "brown". It is beyond the scope of this response to provide a definitive definition of "green jobs" but in general, we will consider any training, occupation or skill concerned with renewable or low carbon energy or energy efficiency to be included in the term.

16. Given the rate of expansion already taking place in the low carbon sector, together with the potential of the global market in low carbon technologies to be worth \$3 trillion by 2050⁹² and with the Government's ambitious proposals for reductions in carbon emissions, there is inevitably going to be a considerable increase in the number of jobs available in this sector, especially in the North East, North West and Scotland

⁹² <http://www.number10.gov.uk/Page13791>

in fabrication, engineering and manufacturing. We would however stress that employment in renewable technologies should not be regarded as an end in itself but rather as a beneficial corollary of the necessary expansion and diversification of energy system. If the right conditions are in place to promote research, development and investment in this sector, then more green jobs (of a permanent nature) are likely to result than if the emphasis had been on maximising employment on a short-term basis in this industry.

17. Government policies in this area such as the legal mandating of carbon targets through the Climate Change Act and the related introduction of carbon emissions quotas; the moves towards low carbon technologies and the newly announced Strategic Investment Fund are likely to have beneficial impacts on green business in the UK and consequently on green jobs.

18. The latest data shows significant increases taking place in both applications (8561) and acceptances (1640) for Chemical Engineering in Higher Education with 71% and 74% respective increases since 2001–02. These increases correspond to the launch of the Institute of Chemical Engineers' (ICChemE) careers campaign *Whynotchemeng?*⁹³ It should also be noted that non graduate positions will be equally important and while the situation within Further Education is also improving it is not showing the same rate of growth as Higher Education.

19. Where Government policy is clearest, it is easier for businesses and education providers to plan for their future requirements and to respond effectively. The relatively strong emphasis that has been given to nuclear power as a future source of energy makes it easier for the sector to project future prospects. This, coupled with a clear and consistent regulatory framework, has allowed more advanced planning to occur.

20. As a result, Cogent's Sector Skills Council Skills Report⁹⁴ has forecast the need for up to 11,500 new entrants into the nuclear industry by 2015, rising to 16,500 depending on early retirements.

21. The type of jobs generated by each form of technology will vary markedly. For example, most of the jobs in the nuclear sector are likely to be highly skilled jobs as will those employed in the installation of offshore wind turbines. However, much of the low tech manufacturing jobs are likely to be based overseas and therefore will not provide much UK based employment. This is also true of the majority of the high end design work. But there will be demand in the UK for mid level technician positions to operate and maintain the various forms of low carbon technology and this is a section of the workforce that should not be neglected.

22. To provide the best prospects for the industry and consequently for green jobs the Government should make it very clear what forms of technology it will support and fund and the incentives that will be in place for businesses that deliver these solutions.

23. *How can the UK maximise the environmentally positive opportunities arising from changes in public spending intended to help tackle the recession*

24. Amongst the public spending measures announced in the 2009 Budget were three particular proposals that could have a significant impact on carbon reduction and environmental protection—the £9 billion efficiency savings target, the £750 million Strategic Investment Fund and potentially part of the £1.7 billion support for job centres.

25. Amongst the measures that could be adopted to achieve efficiency savings would be the improved insulation and energy efficiency of the public estate and similar measures to increase the fuel efficiency of Government transport vehicles. In order to achieve this, the Government should allow tenders to fulfil these aims, setting ambitious minimum standards without specifying particular technologies that could fulfil them. This would provide an incentive for suppliers to innovate methods and technologies to meet these contracts that could have wider application in energy efficiency in the private sector.

26. In addition, we propose that it is possible to bring forward the environmentally positive progress that is intended to be achieved through major infrastructure projects, such as carbon capture and storage or a modern “smarter” grid system. Doing so would also provide some part of the supply-side impetus that the economy needs to help recover from the recession.

27. Given the scope that exists within the Government's budget, as a consumer of £175 billion of goods and services per year it is likely that a substantial part of the Government's desired savings could be achieved in this way. As such we would recommend that these forms of savings be given the highest priority in the Government's Pre Budget Review later in the year. In many cases it will be possible to deliver these savings whilst making use of the Government's procurement chain to support nascent green technologies and inject momentum into low carbon markets at a time when other sources of finance are likely to be lacking.

28. The £750 million Strategic Investment Fund has the potential to provide considerable support to parts of the low carbon economy. It remains to be seen how this will be administered in full but we welcome the additional £50 million funding that has been provided to the Technology Strategy Board which has made a key contribution in this sector in recent years.

⁹³ <http://www.whynotchemeng.com>

⁹⁴ <http://www.cogent-ssc.com/>

29. Furthermore, a particular area where the measures announced in the Budget could be used to benefit low carbon industry and employment in the UK would be to follow the proposals set out by the ETB⁹⁵ and apportion a significant part of the £1.7 billion funding for Job Centres to re-training in growth industries in the low carbon economy. As identified above, there is a need to develop the necessary skills throughout the UK and as early as possible to ensure that the carbon emission targets in 2020 and 2050 are met.

30. Apportioning part of the funding in this way would have the additional benefits of increasing interactions between the Job Centre, local businesses and Further Education colleges and of preventing skills being lost during the recession which may be required at a later stage.

31. *The degree to which the Government's long-term policy framework, including environmental regulations, tax changes or new market instruments, will encourage low-carbon investment and increase employment in environmental industries and their associated supply chains*

32. The prevailing difficult economic situation has made wealth creation and employment two priority issues for the Government, this has resulted in large sums of money being paid in the form of subsidies. This difficult economic situation comes in the midst of more long-term challenges already facing the UK, and the world, of climate change and security of energy supplies. It would therefore seem an obvious strategy to attempt to address both these issues simultaneously by expanding the low carbon industrial base and increasing the number of jobs in the sector.

33. The UK is already subject to both European and national long-term policy frameworks intended to reduce emissions of greenhouse gases and increase the proportion of renewable sources of energy. The EU's ambitious 20:20:20 package aims to dramatically reduce its carbon output by 20% over the coming decade. There are several strands to this policy, including the requirement of the UK to supply 15% of its total energy from renewable sources by 2020—from a level of less than 2% in 2005.

34. This is matched by equally challenging UK legislation. The Climate Change Act, which came into effect in November 2008, was the first to enshrine in law national greenhouse gas emissions reduction targets—80% by 2050. While the science of climate change indicates strongly that cuts of this level are needed from the world's developed countries, the engineering and socio-economic realities of how they can be achieved are far from being resolved.

35. In order to achieve these long-term policy goals, a number of regulations are already in place. These include European directives and mechanisms such as the EU Emissions Trading Scheme (ETS) which effectively levies a cost on around half of the carbon emissions of the UK, principally from large electricity generators and industry. The ultimate aim of this scheme is to set a price for carbon that would be sufficiently high enough to make low carbon technologies commercially competitive against the more traditional fossil fuel based alternatives.

36. In the UK there is a raft of regulations and mechanisms that either tax carbon emissions or subsidise carbon reductions in various sectors of the economy. There are, amongst others, the Renewables Obligation (RO) scheme which provides subsidises for renewable electricity generation, the Climate Change Levy that taxes non-domestic energy usage and the proposed Carbon Reduction Commitment that will introduce a cap and trade scheme into the business and public sector.

37. The major challenge facing the Government is matching the stated goals of the policy frameworks with the mechanisms designed to achieve them. If the goals are not clear it is likely that mechanisms will miss their mark. The goal of the Climate Change Act is clear enough—to reduce greenhouse gas emissions. But when this is considered alongside the EU targets to increase the proportion of renewable energy the ultimate target becomes less clear. Low carbon and renewable are not equivalent and a policy designed to increase the amount of renewable energy such as wind or solar electricity on the system may be at the expense of low carbon forms of generation such as nuclear or carbon capture and storage. Given the complexity and scale of the challenge, it is crucial that the ultimate goal is clear—namely decarbonisation of the energy system—and the mechanisms put in place to achieve this goal must be as straightforward as possible and consistently adhered to.

38. This clarity and consistency is of the utmost importance in terms of investment in low carbon industries and services. Moving into new areas of business or developing new technologies is fraught with risk, especially financial risk. In making decisions about the future direction a company may take, or which small businesses deserve to be lent money, the more certainty there is in the durability of the tax and regulation regime it will operate under, then the easier it is to make a proper assessment of the risk and potential return on investment and to create the confidence to commit. Several current factors, such as the increase in business rates from 5% to 20% for wind farms and the long delay in the decision on round 3 licenses for offshore wind farms are having the opposite effect and are adversely impacting on both confidence and stability in the industry.

⁹⁵ ETB: 22.04.09 Media Release—*Government must prioritise training and re-training to achieve budget goals in low carbon and emerging technologies.*

39. The current economic recession has highlighted the level of financial uncertainty business must contend with. In the course of less than a year the price of oil dropped from over \$140 per barrel to less \$40 per barrel, before rebounding to \$70 today.⁹⁶ This volatility has had a disastrous effect on low carbon technologies which had been reaching a point where they were becoming commercially competitive. Investment in low carbon technologies (such as wind turbines) has suffered as a result. Fuel prices will continue to fluctuate and credit and investment will remain difficult to obtain. A clear policy such as the 80% greenhouse gas reduction in the Climate Change Act will keep the Government's focus on supporting such technologies. This is crucial if businesses are to survive through a period of increased uncertainty and provide the continued expansion in low carbon industries, necessary to reach the designated targets.

40. The specific form of the mechanisms is also clearly important and many existing regulations are in urgent need of review. An example of this is the regulations governing biogas production by anaerobic digestion. Current legislation governing biogas production, by anaerobic digestion, is out of line with European states that are the most innovative in this technology such as Norway, Denmark and Sweden. This technology presents a clear opportunity to convert some wastes into bio-fertilisers and also into biogas (renewable, low emission, energy). The water industry already has digesters and the expertise to operate them. It also has the expertise to use digestate to good agronomic effect whilst protecting the environment from adverse effects. The digesters have the potential to be "turbo-charged" by simple retrofit to treat twice or three-times as much material in compliance with Animal By-Products Regulations to "enhanced treated" status. Unfortunately, as a result of legislation, the use on land of digestate from sewage sludge and digestate from food waste are regulated differently, so water companies are inhibited from co-digestion. As a consequence, the waste loses some of its biogas potential before it gets into the digesters and energy is squandered in treating disposed material. There is no difference in the environmental impact or function of these different digestates but UK policy remains wedded to the distinction. This presents a clear opportunity to reform regulation and improve environmental outcomes.

41. In other cases, the way in which the mechanism is managed is of greater importance than the specific form of the mechanism. For example, there are a number of alternative methods of subsidising renewable energy such as the RO scheme or feed-in tariffs. Adopting the right one is obviously pertinent and requires continued scrutiny to ensure it is functioning correctly and achieving the desired results. However, if a better mechanism is identified, switching from one framework to another too quickly, without giving industry and business time to adapt, is likely to cause as much damage as staying with the inferior scheme. A similar situation exists where necessary step-changes in performance, such as investment in renewable energy, require step-changes in financial incentives and market regulation. In that case, such radical changes need to be planned and implemented in a way that gives investors the maximum amount of information on which to base their investment decisions.

42. The national and global drive towards low carbon technologies and greener services will undoubtedly result in many opportunities for new industries and jobs. If the UK is to benefit from this, clear, consistent and durable policy frameworks are what are needed most.

43. *Economic and social benefits of planned green investments*

44. As outlined above, the expansion of the green technology sector will have the beneficial consequence of creating significant numbers of green jobs, especially in those sectors where the Government has clearly set out its intention to permit, support and incentivise the operation and development of a particular technology, such as nuclear power. This will itself provide significant economic and social benefits. The location of many likely sites for developments in those sectors of the UK suffering from a lack of inward investment would also deliver further social and economic benefits in those areas. Further to this is the fact that the green agenda is something that provides significant motivation to young people, and has been shown to increase their interest in science and engineering and potentially thereby increase societal engagement with wider scientific issues.

45. Given the strong geographical spread of engineers and technicians throughout the UK, with over 95% of engineers working outside Central London, it is possible for some of the areas that the Government is considering, such as sites in the North-West, South-West and Wales to benefit substantially from these kind of investments without being at a disadvantage in terms of skills. The ETB's Engineers Make It Happen programme,⁹⁷ which works with education providers and businesses in Wales to increase the supply of engineers, has found a strong willingness to engage and develop engineering and technology skills amongst Further Education students and lecturers in Wales.

46. The Government has stated a desire, as part of the DIUS's Science and Society programme, to increase societal engagement in science and engineering, particularly with young people. This would have widespread social benefits in terms of technological literacy, opportunity, overcoming the digital divide, increasing the supply of engineers and scientists and allowing people to engage in the political process in a more technologically aware manner. The Power Sector Skill Strategy Group's⁹⁸ study cited in Engineering UK 2008 found that amongst 15 year olds, genuine green work by businesses (rather than cosmetic "green washing") had a significant impact in motivating and encouraging young people in this way.

⁹⁶ 4.00 pm 29 May 2009.

⁹⁷ <http://www.engineersmakeithappen.co.uk/home.cfm>

⁹⁸ <http://www.euskills.co.uk>

47. The proposed investments could therefore have significant advantages in motivating young people throughout the country to increase their scientific engagement and to pursue careers in the engineering sector. This would in turn deliver significant economic advantages to the UK through resultant contributions to the science, engineering and manufacturing base and workforce.

48. *The nature of the jobs that might be created in green industries as a result of the green fiscal stimulus*

49. Data from a number of sources indicates that there is significant potential for growth in the UK and global renewable energy markets.

50. In order to meet the EU 2020 renewable energy target⁹⁹ the Government, in its Renewable Energy Strategy, expects a third or more of the UK's electricity to come from renewable sources by 2020. This would represent an increase from around 5 GW capacity at present to around 35–40 GW. The majority of this increase is expected to come from wind, both on and offshore, with a significant contribution from biomass and waste. For example, the Government's Renewables Advisory Board envisions an additional 13 GW of onshore wind, 18 GW of offshore wind and 4 GW of biomass with solid recovered fuels (waste) on the system by 2020. While it must be noted that the engineering realities of achieving such targets are extremely challenging, the aspirations in themselves will drive considerable investment in these technologies.

51. Increases in other renewable technologies are also expected over the coming decade. The UK already holds a leading position in the development of wave and tidal stream power and although the total installed capacity is only estimated to be around 1 GW by 2020 the potential for continued investment both in the UK and abroad is clear. In the case of tidal range power, much depends on what decision is taken concerning the Severn tidal power projects. Any of the proposed schemes would involve massive investment and result in a large number of jobs, however, there is less potential for this technology to be deployed around the globe.

52. This gives a strong indication that the jobs associated with these energy sources are likely to be the greatest growth areas for green technology in coming years, both to supply UK energy needs and ideally, as part of an export orientated UK industry in these fields.

53. Engineering UK 2008 identifies associated careers in photovoltaic power generation, micro wind energy generation, biomass and micro hydro generation systems, as being "electrical trades and installation," "plumbing", "heating and ventilation" and "air conditioning and refrigeration." There is also a rising demand for a skilled workforce in other low carbon technologies such as nuclear, carbon capture and storage, smart grid systems, and low-carbon transport.

54. In addition to these, welding and fabrication jobs from operator through supervisor to engineer level, are necessary to support growth in green industries. Additional supporting roles in inspection, quality assurance/control, and health and safety will also be generated. Offshore installations will require surface and air transport operations, and specialised operators for both topside and subsea construction, inspection and maintenance activities.

55. All of these specialised roles require accredited training and certification to assure staff competence in delivering the product to required levels of safety and quality. The role of the Government in this sector should be to ensure that there is no financial disincentive to train in advance of the emerging need by providing tax allowances to employers who provide such training to their workforces.

56. *The Low Carbon Industrial Strategy, what it needs to deliver, how, and by when*

57. The Low Carbon Industrial Strategy aims to meet the requirements of the Climate Change Act and reduce carbon emissions by 80% by 2050. As the strategy notes, this will require that by that date every unit of output in Britain will have to be produced with a fraction of the carbon used today.

58. In addition to this, the strategy calls for a much greater contribution by the low carbon economy to the UK's economic growth as a whole, seeking to put the UK amongst those countries which are researching and developing the technologies that the global economy will depend on in future. To achieve these goals it is necessary for the Government to work in concert with industry experts and the third sector. A good example of an initiative that the Government could replicate or support is the Chartered Institute of Plumbing and Heating Engineering's (CIPHE) GreenPlumb initiative.¹⁰⁰ The scheme is a voluntary scheme for CIPHE members (fully qualified plumbing and heating professionals), requiring certification in renewables technologies and a mandatory commitment to Continuing Professional Development.

59. Some of this reduction in carbon intensity will be achieved if the EU Directive target of 15% of energy being generated by renewables by 2020 is met. This will in turn require a well trained and specialised workforce. Engineering UK 2008¹⁰¹ sets out the need for a massive expansion of the workforce in renewables, based on the Government's most recent Energy White Paper. With amongst others, 147,193 workers needed in combined heat and power projects, 74,479 workers needed in micro wind energy and 110,046 needed in ground source heat pump technology.

⁹⁹ <http://www.publications.parliament.uk/pa/ld200708/ldselect/ldecom/175/175.pdf>

¹⁰⁰ <http://www.ciphe.org.uk/GreenPlumb/>

¹⁰¹ Engineering UK 2008, p121; the Engineering and Technology Board.

60. On a wider level, these requirements, as well as the other ambitions of the strategy, including carbon capture, low carbon vehicles and energy efficiency will require constant and considerable innovation to develop the necessary technologies and to keep the UK internationally competitive. This innovation depends upon the continued health of the UK science and engineering base and increased links between that base and UK business.

61. The UK is both geographically well placed and technically capable of implementing the Low Carbon Industrial Strategy and gaining a world-leading understanding of the related technologies. Early implementation of pilot plant projects in the USA and Germany is affording those countries technical and commercial advantage. With demographic trends retiring more competent engineers, especially metallurgists, out of the UK energy, oil, gas and chemical sectors each year than Higher Education can replace, carbon capture and storage projects must be accelerated to capitalise on existing expertise.

62. In addition, the ETB has in the past called for tax allowances for those businesses that invest in research and development or scientific enrichment programmes, to incentivise businesses to undertake such research in the UK and to invest in our science base. This could be augmented by further tax allowances for companies that are researching or developing green technologies in the UK.

63. The Government could also provide support to third sector attempts to reduce total UK emissions, thereby taking advantage of existing expertise in the field. The CIPHE's GreenPlumb initiative is an excellent working example of the sort of scheme the Government could support in this regard.

64. Increased protection for patents for small businesses through a "Green Patent Protection Scheme," whereby the costs of retaining patents for green technologies are supported by the Government would provide further incentive for research and development in this sector and provide the UK with a significant competitive advantage.

65. Given the interim goal of the Climate Change Act is to achieve a 26% reduction in carbon emissions by 2020, we would advise that this support be provided as soon as possible. An ideal opportunity for this would be the Pre Budget Report later this year.

1 June 2009

Memorandum submitted by Ceres Power Ltd

SUMMARY

1. Ceres Power welcomes this inquiry by the Environmental Audit Committee. The UK faces a number of energy and economic policy challenges over the next few decades, including green job creation, industrial up-skilling and encouraging low carbon investment in a recession. Fuel cell micro-CHP, as a low carbon microgeneration technology, should play an important role in helping Government rise to these challenges but, in order for this to happen, the policy conditions must be right.

2. The Government must follow up on high level announcements with detailed measures that provide industry and investors with reassurance. Budget 2009 promised £1.4 billion of extra, targeted support in the low-carbon sector but lacks sufficient information on how it will be spent. Government should provide fiscal support and help to fill the investment gap resulting from the economic downturn fiscal support. This could be achieved through the existing R&D tax credit system or by allowing loss-making low-carbon companies to claim immediate cash funding against accumulated tax losses.

3. Ceres Power hopes that Government will provide the necessary policy support to products currently in the product development phase to help them reach the mass market, enabling UK plc to benefit from the resulting jobs and economic growth whilst remaining at the forefront of technological development. These include our proposed measures addressing a range of problems we face that highlight the need for Government policy intervention to improve and enlarge the skills base for the UK environmental industries.

WHO WE ARE

4. Ceres Power is a UK-based AIM-quoted alternative energy company that is developing a small scale combined heat and power unit for residential applications. This "micro-CHP" product uses fuel cells rather than engine technology such as a Stirling Engine and therefore has very different and beneficial characteristics. Ceres Power has secured major distribution agreements with British Gas and Calor which will enable their residential customers to enjoy convenient, low carbon, cost-competitive energy using environmentally friendly products. It is also developing a low-carbon energy security product for EDF Energy Networks. We would be more than happy to provide further evidence to the Committee on the potential of fuel cell micro-CHP.

5. We are proud of our place amongst world-leading alternative energy companies able to support UK competitiveness. Following our signaled investment commitment to building a high-value mass manufacturing plant located in the UK, Ceres Power wishes to avoid UK companies losing their competitive

advantage or relocating to more supportive countries. Our group will then be able to provide the material benefits to UK energy policy goals of reduced customer energy bills, major carbon savings and more secure energy supplies.

THE ECONOMIC AND SOCIAL BENEFIT OF PLANNED GREEN INVESTMENTS

6. Microgeneration products, such as fuel cell micro-CHP, could provide 30–40% of the UK’s electricity needs according to a study informing the Government’s sector strategy from the Energy Saving Trust and could therefore make a vital contribution to reaching the Government’s target of an 80% reduction in carbon emissions by 2050.

7. The energy saving benefits of Ceres Power products include:

- Reduction in the home’s total energy costs (gas + electricity) of around 25% to help affordability and address fuel poverty.
- Carbon emissions reduction of up to 2.5 tCO₂ when replacing today’s boilers or 40–50% of a typical UK home’s footprint.
- A cost effective, mass market way to reduce emissions in as-built and new-build homes.
- Capable of significant impact on the UK’s carbon reduction targets, even by 2020 via linkage to boiler replacement cycle with 1.5 million units per year (ie 1Gw/yr potential for micro CHP deployment).

THE EXTENT TO WHICH THE CHANGES IN PUBLIC SPENDING WILL CONTRIBUTE TO SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL PROTECTION

8. Ceres Power believes that large scale infrastructure projects such as nuclear, renewables and successfully demonstrated Carbon Capture and Storage technology are only part of the solution, and only part of the opportunity in building a low carbon economy.

9. Fuel cell micro-CHP was not directly assigned funding under the Budget 2009 despite facing large funding challenges during its product development phase. However, following its volume market entry in 2011, it will start to reduce carbon emissions into the long-term as a result of displacing peaking plant which will be high carbon for decades to come. Its value is reinforced by the costs and difficulties of decarbonising the grid. It should also be born in mind that micro-CHP’s fuel type can also decarbonise (ie to biogas, H₂) on the same sort of timeframe as the electricity grid can decarbonise, therefore it has a role to play for decades to come (easily to 2030–50).

THE GOVERNMENT’S LONG-TERM POLICY FRAMEWORK

10. The Government’s long-term policy framework can encourage low carbon investment and increase employment in environmental industries and their associated supply chains. Environmental regulations, tax changes and new market instruments can create the conditions under which microgeneration companies such as Ceres Power can continue to lead in new low carbon products and services.

11. New market instruments rightly form a central element of the Government’s energy policy framework. The Government’s outlined plans for a feed in tariff in the Energy Act 2008 and restated its commitment to introduce them in its Heat and Energy Saving Strategy (DECC, 2009): “The new financial incentives planned to promote renewable heat generation (the RHI) and small-scale low carbon electricity generation (feed-in tariffs, or FITs) will help households who wish to generate their own low carbon energy to overcome some of the upfront costs of installations.” FITs for micro-CHP will help deliver the country’s energy policy goals through accelerating these products uptake in mass market volumes and should be designed with this objective in mind and aim to deliver cost-effective CO₂ savings. Micro-CHP offers the potential for excellent value for money in terms of £ per tonne of carbon saved and technology cost assumptions rightly form a key input into the FIT model when determining its level of support for individual technologies.

12. Tax changes can encourage low carbon investment through use of the existing corporation tax systems to bridge funding gaps and meet added supply chain demands created by the credit crunch. In the case of Ceres Power as well as many other environmental industries this could assist in making available the necessary funding to support the product development phase through to market launch.

13. The following are examples of how this could be achieved:

- Extend the existing R&D tax credit system to enable claims to be made against a much broader range of expenditure and against part-funded development programmes.
- Allow loss-making low carbon companies to claim immediate cash funding against accumulated tax losses rather than offset these tax losses against future taxable profits. This could be achieved by the companies issuing an environmental industry bond secured on the accumulated tax losses and to sell these green bonds to the Bank of England as part of the current quantitative easing programme. The bond could be repaid by the company at any time (eg through an equity/debt refinancing when markets recover) or out of the future taxable profits of the business.

14. When Government considers further changes to the long-term policy framework it should not stifle deployment of new technologies simply because the policy has not caught up. Several potential instances of this potential risk relate to DECC's Heat and Energy Saving Strategy and are concerning to Ceres Power:

- Design of the extended CERT (Carbon Emissions Reduction Target) and CESP (Community Energy Saving Programme) should not prohibit or discourage the introduction of new and innovative products which may come on line before December 2012. CERT and CESP must plan to actively support and incentivise product innovations that are highly likely to become available during the lifetime of these policies.
- Greater uplifts for microgeneration technologies are needed to incentivise uptake in CERT and CESP. Failure to increase the uplifts, or at the very least provide a more accurate comparison of the carbon benefits of microgeneration with respect to more traditional CERT measures, will extend the poor uptake of microgeneration technologies under the current CERT arrangements.

15. Coordinated support across the Government policy framework is vital. Should the Government decide to use the enabling legislation and introduce FIT reward for micro-CHP, it is imperative that this is integrated and works in tandem with any obligation on energy suppliers through CERT and CESP or its successors. Promotion of an integrated approach will ensure that fuel cell micro-CHP is effectively supported across a range of policies.

THE GREEN FISCAL STIMULUS

16. Government fiscal support is required to support technologies in their product development phase such as fuel cell micro-CHP. A significant proportion of the investment required during this phase is normally provided as investment from supply chain partners. The credit crunch has eliminated the availability of such investment-in-kind due to a collapse in funding for their core operating businesses starving the new technologies of resources. Equity funding is also not available to finance the product development phase of new technologies.

17. The 2009 Budget built on existing Government policies by promising £1.4 billion of extra, targeted support in the low carbon sector, including £70 million for decentralised small-scale and community low carbon energy and £405 million to support low carbon industries and advanced green manufacturing. Little detail on the stimulus package has been provided on this however, giving little reassurance to industry and investors.

18. As unemployment in the UK rises, the economy is desperate for the new jobs that low carbon technologies can provide. For example, Ceres Power has already created nearly 100 jobs in the UK and plans to create further employment. The nature of these jobs that could be accelerated by green fiscal stimulus measures are in high-value R&D manufacturing and engineering, fuel science, product innovation, energy and applied science, and the enabling industry geared to providing innovative products and services. In the case of Ceres Power, this latter category will include electricians and gas appliance fitters whose new green jobs will build on our fuel cell scientists when our micro-CHP product reaches market entry in 2011.

THE LOW CARBON INDUSTRIAL STRATEGY

19. Conditions in the UK need to be right in order that UK plc should benefit from a Low Carbon Industrial Strategy rather than other countries with a more attractive economic climate and approach to regional development funding.

THE SKILLS BASE FOR UK ENVIRONMENTAL INDUSTRIES

20. Ceres Power has faced a range of problems that highlight the need for Government policy intervention to improve and enlarge the skills base for the UK environmental industries. Government spending has concentrated on the three R's and basic IT skills—an "educational recovery" plan that contrasts with a pressing need to tackle professional scientific development and facilitate science in a commercial setting. Ceres Power faces the ongoing challenge of specialists not matching our position within the environmental industries—our innovative product is not matched by a human resource whether as an energy scientist or a combined heat and power installer.

21. To enhance the skills base for UK environmental industries Ceres Power suggests the following policy measures are considered:

- Support policies addressing the management development of scientists and engineers to widen their roles and assist their corporate development.
- An international conference bursary scheme to foster UK environmental leadership through learning from international best practice.
- Encouragement of professional support networks.
- NVQ 3+ focussed support.
- Support for environmental industry initiatives to development in-field support infrastructures eg the use of equivalent schemes to the existing Microgeneration Certification Scheme to cover new technologies such as fuel cell micro-CHP.

- Creating programmes to encourage multi-skilled tradespeople (eg gas fitters and electricians).

22. Ceres Power hopes that such measures could be considered within the remit of the forthcoming DIUS Active Skills paper detailing how the wider skills system will support the Low Carbon Industrial Strategy. We also hope that the Government will respond without delay as was stated in New Industry, New Jobs (April 2009) to the UK Commission for Employment and Skills when it publishes its recommendations for delivering a simplified and effective skills service for business.

2 June 2009

Memorandum submitted by Unite

Unite is the UK's largest trade union with almost two million members across the private and public sectors. The union's members work in a range of industries including manufacturing, transport, construction, financial services, media, local government, education and health services.

EXECUTIVE SUMMARY

- Unite welcomes recent government announcements on the importance of industrial activism, the fact that the free market cannot solve the problem of climate change, and budgetary support for key low carbon industries.
- Unite believes that a low carbon industrial strategy must include the following key measures to protect both environment and employment concerns:

ACCESS TO CAPITAL

- A clear remit and duty for banks and pension funds to invest in "green jobs";
- A greater use of procurement to support the green supply chain, including renewable energy on public sector land;
- Greater use of Local Authority bonds and "green bonds";

ENERGY

- More investment in skills;
- More investment in infrastructure, particularly the aging grid;
- The introduction of broader feed in tariff;
- The use of local content requirements in public procurement to support the renewable energy supply chain; and
- Addressing blockages in the planning system for renewable energy.

TRANSPORT AND VEHICLES

- More direct state investment in public transport, particularly buses, and use of quality contracts to support better bus services and UK bus manufacturing;
- A scrappage scheme for buses like that introduced for cars;
- More active state investment in electric car infrastructure; and
- Faster aid for the motor industry to make a low carbon transition, and a much more ambitious green vehicle procurement programme.

CONSTRUCTION

- Far greater investment in energy efficiency retrofitting, ideally using directly employed labour, to quickly create jobs, tackle fuel poverty, and save public sector money.

SKILLS

- More funding for "green" training, the right to paid leave for training, and statutory rights for union environmental reps, to facilitate environmental up-skilling and improved workplace energy efficiency.

1. INTRODUCTION

1.1 For Unite, there is no question that the jobs of the future will be “green jobs”. A 2009 survey of Unite members showed that 39.7% of members were *more* concerned about climate change than they had been a year ago, and only 7.5% were less concerned.¹⁰² A general move towards fuel efficiency would also have wider economic benefits, freeing up money to be spent in other, more job rich sectors. It would also free us from our over-reliance on fossil fuel energy from unstable regions.

1.2 Broadly, Unite agrees with the priority industries identified by Lord Turner and the first report of the Committee on Climate Change,¹⁰³ and echoed by Sir Nicholas Stern¹⁰⁴ dramatically upscaling investment to decarbonise energy supply and transport, and increased energy efficiency in buildings and industry. Both Stern and Turner are in agreement that these sectors are ready to create green jobs *now*, and essential to delivering the binding targets on carbon reductions by 2020. Stern points out that there has never been a better time for such activity and investment, with low interest rates. Turnover in the low carbon and environmental goods and services sector, *could* rise to over £150 billion and employment *could* rise to 1.3 million by 2020.¹⁰⁵ But as Lord Mandelson acknowledged, “we need a smart strategic approach from government” to deliver this “job revolution”. Gordon Brown has called climate change “the greatest market failure in history”.

1.3 We need industrial activism as well as words if we are to ensure that both existing and emerging environmental technologies deliver UK jobs, amid competition for early mover advantage. President Obama’s \$50 billion spend to create half a million green jobs (as the first stage in his pledge to spend \$£150 billion and create five million new green jobs by 2020), is matched by 14 billion euros green jobs investment in Germany, and China’s stated intention to lead the world including a \$142 billion green stimulus. Such moves are welcome but without similar intervention in the UK, Gordon Brown’s welcome commitment to one million green jobs at Warwick, is in danger of slipping overseas—with Vestas being a recent prominent example.

1.4 Such intervention needs to be as drastic as that which saved the banks, including a re-thinking of the balance between market and state.

2. ACCESS TO CAPITAL

2.1 The low carbon sectors highlighted in this paper face the same credit squeeze as other industries, so it is crucial for government to ensure that the credit being made available to industry flows rapidly. The banks that have been saved through a massive investment of taxpayer cash must now show responsibility towards both workers and the environment, and be given a clear remit and duty to support manufacturing, particularly low carbon jobs—as recommended by this Committee and already statutorily required in Ireland, and as called for in Unite’s A New Deal for the Real Economy.¹⁰⁶

2.2 The £4 billion of new European Investment Bank loans for renewables needs to be expedited.

2.3 Another way of leveraging investment could be for a duty for socially and environmentally responsible investment to be placed on pension trustees¹⁰⁷—such investments would also be safer homes for our pension funds, as pointed out by (amongst others) the New Economics Foundation.¹⁰⁸

2.4 Unite has already called for use of Local Authority Bonds for infrastructure, housing, and environmental investment, and notes with interest recent calls from FOE, REA, NEF and others for “green bonds” and “green banks” to fund up to £50 billion a year for a “green recovery” which transforms the energy efficiency and renewable capacity of the UK.¹⁰⁹

2.5 Both the existing £175 billion annual public sector expenditure on procuring goods and services, and additional stimulus investment coming through, must be targeted through greater use of procurement clauses, to support employment and environmental policy objectives. There is also a need for longer term procurement contracts. Government should also do more to install renewable capacity on public sector land—the current “Partnership for Renewables” scheme is limited and beset by the same problems as other PFI schemes.

2.6 The benefits of this type of investment are clear. In the US, the Apollo Institute estimates that every \$1 million invested in energy efficiency projects creates 21.5 jobs (compared to 11.5 in new natural gas generation).

¹⁰² Data included in Unions, Greening the Workplace and Climate Change—Labour Research Department, June 2009

¹⁰³ Building a Low Carbon Economy, Committee on Climate Change, December 2008

¹⁰⁴ An outline of the case for a “green” stimulus, Sir Nicolas Stern et al, Grantham Research Institute on Climate Change and the Environment/Centre for Climate Change Economics and Policy, Feb 2009

¹⁰⁵ Low Carbon Industrial Strategy: A Vision, BERR, March 2009

¹⁰⁶ A New Deal for the Real Economy, Unite, November 2008

¹⁰⁷ As recommended in, for example, DTI’s Innovation and Growth report—“Enabling Business in Resources Management”—2002

¹⁰⁸ The Green New Deal, New Economics Foundation, July 2008

¹⁰⁹ Friends of the Earth is calling £15 billion of government money to be invested in a Green Bank over the next two years, and a further £15 billion to be raised through green bonds (raised on the private markets and underwritten by government). The Renewable Energy Association calls for a Green Bond issue of £10 billion. New Economics Foundation has called for a more ambitious programme of £50 billion per year.

3. ENERGY

3.1 The budget announcement on up to four new carbon capture and storage plants is welcome but clarity is needed over the funding mechanism. A market based approach to connect offshore energy infrastructure is likely to result in a wasteful system of parallel, competing connections. There is also much work to be done on skills in the CCS market as well as the rest of the energy sector.

3.2 To meet the government's 2020 Renewable energy targets, jobs in renewable energy will need to grow from 16,000 at present to around 150,000 by 2020.

3.3 Investment in nuclear new build and cleaner coal with carbon capture—coal and nuclear closures mean that the UK will need to replace about 1/3 of its baseload power supply by 2015, and 2/3 by 2020.

3.4 A report to BERR's Renewable Energy Strategy stated that around 44,000 manufacturing and construction jobs will need to be created by 2020 in wind energy to deliver on the government's renewables targets, but that the majority of these jobs—nearly 39,000, or about 85% of them— will not be UK jobs, without considerable UK government support for skills, infrastructure, the UK supply chain and domestic market.¹¹⁰ Unite considers BERR's response—that such matters would essentially be dealt with by RDA's—to be inadequate. RDAs do not set national policy which could support the supply chains and markets.

3.5 Unite recognises that the government has taken some steps, for example the £525 million in the budget to improve the subsidy regime for offshore wind, and the recent announcement on the London Array, and working with the EIB to channel £4 billion of additional investment. However, such steps are clearly not enough.

3.6 Those countries such as Spain and Germany that have come from behind to successfully develop domestic wind industries (estimated to employ 900,000 in Germany by 2020), have done so through industrial activism, and a funding mechanism (feed in tariffs) that developed a stable, sizeable domestic market, at lower cost to the energy consumer than our current system. Spain has also used local content requirements which require local assembly/manufacture of turbines before wind farm permissions are granted, as well as a tax credit that is only granted on turbines that meet these requirements.¹¹¹

3.7 Despite the ambitious targets set by the EU and UK to increase from 5% of electricity being generated renewably, to at least a third, in eight years, investors are still sceptical that sufficient UK projects will proceed. Unite notes the SKM and Douglas Westwood reports to the Renewable Energy consultation which cited turbine shortages (particularly blades) and a lack of UK manufacturing capacity as key obstacles in delivering on Renewable Energy targets. The SKM report also cited a lack of a pipeline of domestic projects certain to proceed, as a key obstacle for investment in wind turbine manufacturing. Therefore, Unite believes a government strategy is urgently needed which unblocks finance as outlined above, and also:

- Introduces a feed in tariff which also applies to large scale renewables;
- Follows the Spanish example of using local content requirements for wind farm planning permission;
- Addresses the planning blockages for both small and large scale projects that make the UK the “hardest country in the world to get planning permission” according to Ditlev Engel, CEO of Vestas;
- Ensures sufficient investment in grid expansion and offshore infrastructure such as port capacity.

3.8 Such steps, if taken, could address problems like the proposed closure of England's only wind turbine manufacturing capacity, the Vestas blades plant in the Isle of Wight, which plans to offshore production to China and the US.

4. PUBLIC TRANSPORT

4.1 The deregulation of public transport has been a disaster for passengers and the environment. Improving and integrating public transport is critical to any serious environmental strategy, to make it a realistic, comfortable and safe alternative to private car use. More state investment in public transport infrastructure and services is needed, maximising the benefits of the new quality contracts in the immediate term, and re-nationalisation/municipal ownership may also be necessary.

4.2 It is not the question of car ownership that is the main challenge, but of car usage. In Germany higher levels of car ownership still result in lower levels of car use because of good public transport.

4.3 It is clear that the economic downturn (as well as environmental concerns) is affecting transport demand. In 2007–08 there was a decrease in car mileage (for the first time since the 70s), shrinking demand for larger vehicles, and an increase in bus usage. Of all the measures considered to reduce emissions from transport, spending more on buses is the most popular.¹¹²

4.4 However, bus drivers and manufacturers are already facing redundancies, as the bus companies seek to maintain profit margins that are squeezed due to the impact of the recession on their rail revenue, by withdrawing services and cancelling orders with UK bus manufacturers.

¹¹⁰ Supply Chain Constraints on the Deployment of Renewable Energy, Douglas Westwood/BERR, June 2008

¹¹¹ Green Jobs: Prospects of Creating Jobs from Offshore Wind in the UK, IPPR, April 2009

¹¹² DfT Attitudinal Polling, 2009

4.5 Passengers and workers could be safeguarded through public funding where necessary, for purchasing buses and operating services. Alternatively, the government could clamp down on bus companies and transport authorities attempting to delay their obligations to purchase newer, less polluting buses and run decent levels of service. A scrappage scheme like that introduced for cars would be hugely helpful.

5. CARS

5.1 A recent Government study showed that there could be some 1.2 million electric vehicles (EVs) on the roads by 2020,¹¹³ subject to a “high level” of Government commitment.

5.2 However in the UK, the transport secretary’s stated aim to be “technology neutral” in relation to low carbon vehicles, and his statement in March that he expects the market to take the lead on delivering electric car infrastructure, with only £20 million of government investment, risks repeating the same mistakes as with renewable energy, and failing to deliver the green jobs we so need.

5.3 Unite believes this makes it likely that the UK will lose car production to the US, Europe, and the far East, who have already assessed the technology provided support for production and infrastructure.

5.4 Finally, the UK won’t have a green vehicle industry unless current provision is sustained whilst we re-tool and re-train. Given the current crisis in the industry, assistance is too little, and too slow, whether in relation to the current public sector fleet electric van programme (limited to only 200 vans this year), or more generally in expediting EIB and Automotive Assistance Programme funding.

5.5 To deliver this and support manufacturing jobs in the UK there also needs to be more R&D, training and capital investment support for existing UK based battery manufacturers (such as Excede, currently facing job losses) to develop greener alternatives.

6. CONSTRUCTION

6.1 The budget’s additional £375 million for energy efficiency (in homes, public sector building and industry) is welcome but falls well below what is required.

6.2 Around a third of the UK’s greenhouse gas emissions come from housing.¹¹⁴ According to Consumer Focus, with the average household electricity bill now over £1,000 per year, over five million people are now struggling to afford to heat their homes.¹¹⁵ Insulating buildings also protects against summer heatwaves and so is a measure both to mitigate, and to adapt to, climate change.

6.3 The European experience shows that every £1 million invested in energy efficiency creates between eight and 14 person years of direct employment, and a further nine to 40 years indirect employment.¹¹⁶ Lord Stern¹¹⁷ points out that “implementing energy efficiency measures for buildings and industry are among the most effective ways to combine environmental outcomes with a fast economic stimulus... spending on energy efficiency measures... directed towards domestic construction sector activity... [has] a low rate of leakage into imports, increasing the domestic fiscal multiplier”.¹¹⁸

6.4 This is also decentralised employment that could be initially targeted at those areas most suffering from loss of construction jobs.

6.5 This combination of factors has meant there is a growing political alliance¹¹⁹ around Government dramatically upgrading and hastening its existing “green” retro-fitting programme, and creating up to 250,000 net additional jobs a year in so doing.¹²⁰

6.6 Investment in energy efficiency retro-fitting of public buildings would also save a typical school over £2,000 a year, and a health care trust around £25,000 a year.¹²¹

6.7 Government could also consider reducing VAT on refurbishment to 5%, to encourage more energy efficiency work, and rating properties below a certain SAP rating or energy efficiency band as officially “uninhabitable”, to lift a large number of families out of fuel poverty and establish refurbishment standards on private landlords.

¹¹³ Investigation into the potential for the transport sector to switch to electric and plug in hybrid vehicles, CENEX/BERR, October 2008

¹¹⁴ <http://www.berr.gov.uk/energy/whitepaper/page39534.html>

¹¹⁵ http://www.consumerfocus.org.uk/en/content/cms/Campaigns/End_Fuel_Poverty/End_Fuel_Poverty.aspx.

Consumer Focus was formerly energywatch, Postwatch and the National Consumer Council.

¹¹⁶ The case for energy efficiency investment in the fiscal stimulus, Impetus Consulting, Feb 2009

¹¹⁷ Sir Nicolas Stern et al “An outline of the case for a ‘green’ stimulus”

¹¹⁸ As above

¹¹⁹ 2020 group, compass, Shelter, CIH, CAB, Crisis, backbenchers (eg Cruddas, Burgon), DCH, Nat. Housebuilding, Fed of Housebuilders etc

¹²⁰ For example, Unite has called for this in our “New Deal for the Real Economy”, the Local Government Association (LGA) have argued for a national programme of basic home insulation for the 10million homes that don’t currently have it, at a cost of £500 million a year, creating 20,000 jobs, as well as saving households an average of at least £180 a year on bills. A recent Greenpeace report “Energy Efficiency and Fiscal Stimulus” backed by the Federation of Master Builders and the TUC called for such a scheme plus a larger scale £5 billion a year construction scheme to meet our climate change targets and to create over 250,000 net additional jobs a year.

¹²¹ Using Carbon Trust figures

6.8 Unite would also argue the need for these jobs to be directly delivered by councils, to ensure economies of scale, initial focus on streets and wards of greatest need, and to overcome the lack of trust of unknown providers which has hampered uptake according to the Energy Saving Trust.

7. SKILLS

7.1 Unite wants to see an immediate release of funds to provide skills training for “green jobs” training, for all workers but particularly those in the sectors highlighted above, who will be most affected by the transition to a low carbon economy. Rights for union environmental reps could help workers access the skills needed to free up an additional £5.6–£7.4 billion of potential energy savings for UK businesses and the public sector, including up to £2.5 billion in the next 12 months alone,¹²² thus helping to secure jobs. The government could introduce a right to training (including paid time off), rather than a “right to request”.

7.2 The majority of Unite members are not benefitting from employer led green training initiatives. A recent survey of Unite members¹²³ showed that only 6.8% reported their employer had made opportunities available to them for green upskilling.

8. CONCLUSION

8.1 This response has touched on key possibilities. There are other areas that need investigation and action, from “green finance” initiatives to agriculture,¹²⁴ and construction jobs in flood prevention and climate change mitigation.

8.2 The challenges are clear. Everyone should have the right to work in a way that provides for their needs without damaging their environment. But recent research suggests that greater reductions in greenhouse gas emissions than previously thought are necessary to keep within the crucial 2 degree limit.¹²⁵ It cannot be assumed that the economy that emerges from the recession will be sustainable—the recessions of the last 30 years have hastened the drive to a socially, economically and environmentally *un*-sustainable system, with workers and goods having to travel ever greater distances to chase globalised, deregulated capital.

8.3 Unite welcomes the steps in the right direction the Government has taken so far in to support “green jobs”. But actions have not gone far enough or fast enough in addressing the scale and breadth of needs, outlined in this evidence. New priorities for these new times require careful planning and transition measures, with union involvement crucial. A response to the economic crisis that includes proper planning, industrial activism, and a shift in subsidies and financing, would allow huge scope for sustainable growth and sustainable employment.

5 June 2009

Memorandum submitted by the Association for Public Service Excellence (APSE)

The Association for Public Service Excellence (APSE) represents officers and members involved in the management and provision of quality public services. APSE’s mission statement positions the organisation as “networking organisation which consults, develops, promotes and advises on best practice in the delivery of public services”. APSE is currently working with almost 300 authorities within the United Kingdom. APSE is also one of the 15 national organisations involved in developing the national strategy on Skills to Grow led by CABE Space.

APSE believes that continued support and investment in the public sector infrastructure (such as affordable housing, transport, play and recreational facilities, a high quality public realm and creating sustainable communities) should be the foundation for tackling the recession. As the recession will be experienced differently in different regions, local authorities should have a key role to play in developing local jobs needed at their local level. Councils throughout the UK have a critical role, more especially at a time of economic uncertainty, in valuing and investing in the local workforce, which in turn supports the local economy. The public sector is a vehicle for delivering skills and training and equipping the workforce to cope with structural changes in the economy in the long term. APSE believes that the emphasis on skills development should be on front line skills, which is where they will have most impact as the interface with members of the public.

At a time of budget constraints, with 50% of local authorities expecting cuts in their park budgets next year (APSE state of the market survey 2008), APSE would like to see further clarity on the role that national government are going to play in funding skills development. APSE welcomes the pre-budget statement in November 2008 and Budget 2009 making available resources for 200,000 new apprentices, as well as the recent investment by the Department for Communities and Local Government of £1 million available for

¹²² Creating the Environment for Change, Impetus/Greenpeace 2009

¹²³ Unions, Greening the Workplace and Climate Change, as above

¹²⁴ The Soil Association has suggested 350,000 jobs could be created through a switch to organic—Centre for Agricultural Strategy, University of Reading, November 2008 (cited by the Soil Association)

¹²⁵ See for example a recent paper published by the Royal Society http://www.tyndall.ac.uk/publications/journal_papers/fulltext.pdf

up to 60 additional local authority horticultural apprenticeships. APSE also welcomed the Apprenticeship Bill 2008 with the regulations to encourage more employers to offer apprenticeship, although APSE would like to see the promotion of new apprenticeships being targeted through local authorities. APSE would like to see more emphasis by government on high quality apprenticeship schemes, as well as identifying and promoting areas of good practice that already exist within local authorities. The benefits of apprenticeships accrue not only to the local authority who is able to maintain its workforce but also to the staff themselves who acquire skills and quality training, the citizens receiving the services supplied by skilled workers and the wider community benefiting from a local skilled labour force and demand for local training colleges and teachers.

APSE is undertaking research for the TUC on the impact of the recession on public services. This research will examine the social and economic role of public services both in terms of the trade off between spending money on public sector jobs and services rather than benefits and also the long term cost of social breakdown on crime, education, housing, health and cycles of poverty and unemployment, health inequalities and improving life chances, improving educational attainment, addressing social exclusion and poverty and creating more sustainable communities.

APSE agrees with the need for a focus on green jobs and skills development and believes that investment can be targeted for not only economic benefits but also to address social and environmental concerns. Local authorities have a pivotal role in achieving the climate change and energy targets and meeting the Carbon Reduction Commitment, including waste management through energy from waste and anaerobic digestion; effective energy management and reducing carbon emissions in council buildings such as education, leisure, housing and community buildings; street lighting; transport; and local authorities' role in raising awareness and educating the public on energy efficiency and reducing carbon footprint. Local authorities can also act as a catalyst for new industries to address key challenges around sustainability and climate change. The challenge to reduce CO2 emissions by 80% by 2050 will require investment in public sector jobs and skills. There are opportunities for new skills development and training including the use of new green technology, fitting energy efficiency equipment such as microgenerators and solar panels. In addition, there is an opportunity to develop a set of "green" or "environmental" skills and careers on a holistic basis, across services as a result of new challenges such as the Carbon Reduction Commitment, as opposed to a narrowly defined set of skills for one department or service. This could ultimately support skills development as well as new career paths.

APSE believes that investing in skills brings real benefit to local communities. In addition, investment in public services can provide maximum value for the public pound through procurement such as the use of community benefit clauses, which can include issues such as local employment, training and supply chains. APSE is conducting research into community benefit clauses with the Centre for Local Economic Strategies (CLES). Our recent research report on the economic footprint of local councils based on a study of Swindon's streetscene services highlighted the strategic argument for local authorities to be employers and it revealed the impact on the local economy; for example, 98% of streetscene's employees lived within the locality and 64p of every pound invested/spent stayed within that community.

Enclosed is a copy of APSE's research on the Economic Footprint of Public Services.¹²⁶ APSE will also send through a copy of the research into the Community Benefit Clauses when this is completed.

5 June 2009

Memorandum submitted by the Greater London Authority and the London Development Agency

The Greater London Authority (GLA) and the London Development Agency (LDA) welcome this opportunity to give evidence to the Environmental Audit Committee's inquiry into Green Jobs and Skills. Our response to the Committee's lines of inquiry are set out below.

A. THE DEGREE TO WHICH THE GOVERNMENT'S LONG-TERM POLICY FRAMEWORK, INCLUDING ENVIRONMENTAL REGULATIONS, TAX CHANGES OR NEW MARKET INSTRUMENTS, WILL ENCOURAGE LOW-CARBON INVESTMENT AND INCREASE EMPLOYMENT IN ENVIRONMENTAL INDUSTRIES AND THEIR ASSOCIATED SUPPLY CHAINS

1. The transition to a low carbon economy is urgent, and the targets to reduce UK carbon emissions by 85% by 2050 shows a long-term commitment.

2. Yet we believe that the scale of support proposed, while a positive step, does not reflect the scale nor the urgency required; both to deliver significant carbon reductions and, importantly, to maximise the opportunities for UK companies to benefit from expanding global markets.

¹²⁶ Not printed.

Need for greater coordination of governmental low-carbon activities

3. It is critical that the government sends the right signals and creates the framework and incentives to support a low-carbon economy. To be most effective, greater co-ordination is needed as political interventions can make the already sporadic landscape more confusing.

Establish a business-led taskforce to map fiscal and regulatory barriers

4. While seeking to maximise new measures to encourage low carbon investment and promote employment in environmental industries (EI), the government should assess the negative impact of existing measures, which may constrain the transition to a low carbon economy.

5. Therefore, government should consider establishing a business-led taskforce to map fiscal and regulatory barriers to the development of EI.

Provide coordinated, market-oriented training and employment support aligned to 2050 carbon reduction targets

6. We need to have a clear perspective on the broader UK skill requirements for driving growth in EI and its supply chain and would like to see this firmly embedded in future strategies, directly linked to the proposed changes in public spending.

7. Whilst skills and training funding is becoming available, often it does not match up with rapidly-evolving industry requirements and can be further compounded by government departments being too slow to respond, therefore forcing the private sector to “fix” the problem themselves. If so, the wider UK population will not be able to fully capitalise on potential opportunities within EI.

8. It is important that there is a coordinated, market-oriented programme of training and employment support in place to deliver the skills to attract and retain EI, and to ensure the UK’s competitiveness. We look forward to the Skills Strategy White Paper later in 2009.

9. Actions to be considered:

- Undertake skills audit of all new policies, environmentally focused or not.
- Use 2050 carbon reduction targets and match actions, financial and human resources required to meet this goal.
- Task the Commission for Employment and Skills to review all sector skills councils (SSCs) for implications of moving to a low carbon economy.

Promote greater awareness of potential markets at home and abroad beyond the EI sector

10. There is the need to promote awareness among the investment community of the potential scale of EI markets here and globally, and the existing strengths within the UK to maximise this opportunity.

11. An Ernst & Young report¹²⁷ in March 2009 estimates that if London merely took its share of expected global low carbon investment, it would lead to £3.7 billion annually of opportunities. However, as GLA Economics found that for every job created in London, another job is created elsewhere in the UK, the long-term prize could be considerably higher if this investment improves UK business competitiveness in sectors where London is strong.

12. Of the five key sectors identified in the Low Carbon Industrial Strategy, London and the Greater South East region (GSE) has particular strengths in carbon capture and storage (CCS), offshore wind generation, nuclear and low carbon vehicles. However, sub-sectors where growth potential has been identified should be given greater priority and support:

- *Renewables and building technologies and materials*—these will form a major part of the focus for the Thames Gateway Institute for Sustainability.
- *Carbon finance*—London is a world leader with over 75% of all carbon market trading desks and 90% of the 34 venture capital clean technology companies with £186m investments.
- *Waste management technologies*—should be identified as an important low carbon sub-sector, specifically around waste to energy and processing/reprocessing technologies.

13. Research by the LDA in July 2008¹²⁸ found that other sectors are often key enablers for a low-carbon economy. Sectors where London is a market leader includes R&D, legal services, clean technology, environmental consultancy and business services such as engineering, architecture and project management.

14. It is important for the UK to act fast and decisively as other global cities are positioning themselves to win a leading share of this market.

¹²⁷ Prospectus for London, the “Low Carbon Capital”, prepared by Ernst & Young for the London Development Agency, March 2009.

¹²⁸ The Commercial Opportunity for London Businesses in the Environment Sector, prepared by UK CEED for the London Development Agency, July 2008.

Reinforce support for business, especially SMEs, to support commercialisation of new environmental technologies

15. The GLA welcomes the government's incentives, including the £405 million package allocated to support low carbon and green technologies and the Low Carbon Investment Fund.

- Increased £50 million funding through the TSB should encourage innovation in areas of high growth potential such as EI technologies.
- £90 million to fund CCS engineering and design studies is welcomed as the GSE region has the ability to implement these studies and act as a test bed.
- Expansion of the Carbon Trust small scale loan scheme for SMEs to take energy efficiency measures and the increase in Salix funds could have spill-over benefits to EI.
- New £4 billion capital through the European Investment Bank to access debt and early stage finance will be of particular importance to EI.

16. While the UK has a good record in developing innovative environmental goods and services, it does not have a particularly good track record in commercialising them. In addition, market failure often prevents the rapid adoption of new and environmentally better technologies. Growth in already strong sectors relies on effective access to venture capital. This is not as developed as it could be, particularly at the lower end for "angel" investment under £1 million or at the upper end for large scale, transformative schemes.

17. Therefore, we believe that even in the current economic climate, the government could have gone further as many environmental activities contribute directly to stimulating economic activity and maximise employment opportunities.

18. The GLA sees access to finance, new vehicles for delivering this access, and new sources of investment as critical to EI success. We are committed to working closely with the government to maximise EI business support in London.

Align the tax regime to be a market leader in EI investment

19. The Ernst & Young report¹²⁹ in March 2009 found that for EI investment, the tax regime is the sixth most important factor after transport and communications infrastructure, productivity, labour costs, and political and economic stability. It also identified various countries which have tax incentives for EI investments. The US, in particular, is moving fast and may become attractive to existing UK expertise unless similar tax incentives are put in place.

Ensure public procurement supports environmental technologies through the Sustainable Procurement Taskforce

20. The public sector has a major opportunity through its procurement to encourage the development and adoption of environmental technologies. For example, the Mayor of London will help to stimulate the market for electric vehicles through plans to procure 1,000 electric vehicles across the GLA fleet by 2015.

21. However, it is recognised that short-term, risk averse and uncoordinated approaches to public procurement can stymie opportunities for new technologies and services.

22. The Sustainable Procurement Taskforce at the Office of Government Commerce could lead more effective public procurement to encourage new technologies.

Support Low Carbon Economic Areas in the GSE region

23. We would welcome discussions on Low Carbon Economic Areas in the GSE region, as it has the research strengths and industry base to help the UK become a market leader in CCS, offshore wind, nuclear and low carbon vehicles. Its projects around decentralised energy, district heating, energy efficiency and waste management sectors can provide the scale of intervention needed to create a step change in the approach being taken by the UK. In particular, a Low Carbon Economic Area in building technologies would be recommended.

B. WHETHER THE CHANGES IN PUBLIC SPENDING INTENDED TO HELP TACKLE THE RECESSION WILL MAXIMISE EMPLOYMENT OPPORTUNITIES IN ENVIRONMENTAL INDUSTRIES

Address key structural issues to maximise employment opportunities

1. The Ernst & Young report¹³⁰ of March 2009 identified key factors to transform into a low-carbon UK and maximise EI employment opportunities:

- access to stable, affordable finance and incentives for businesses and investors;

¹²⁹ Prospectus for London, the "Low Carbon Capital", prepared by Ernst & Young for the London Development Agency, March 2009.

¹³⁰ Prospectus for London, the "Low Carbon Capital", prepared by Ernst & Young for the London Development Agency, March 2009.

- a competitive tax regime;
- long-term planning commitments and removal of barriers within the planning system;
- a single point of contact for private enterprise to engage with government instead of the current fragmentation of public bodies involved with EI; and
- greater predictability, collaboration and consistency in governmental policies to give investors confidence in emerging EI businesses.

2. The GLA would be keen to work with government to develop the appropriate policies and ensure that the UK remains competitive with the right skill sets to attract ongoing EI investment.

Use London's innovative low-carbon work to benefit the UK

3. The Mayor has made a commitment to reduce carbon dioxide emissions by 60% by 2025. London's key programmes align with the Low Carbon Industrial Strategy.

- Waste-to-energy.
- Retrofitting.
- Electric vehicles.
- Decentralised energy.

4. The GLA is working to transform London into a low carbon, resource efficient city and would be pleased to share this work with the Committee. Its work includes:

- *Buildings Energy Efficiency Programme*—capital funding for retrofitting of public buildings for energy efficiency. Phase 1 is underway to deliver 25% energy savings worth £1 million per annum with wider roll-out from late 2009.
- *Decentralised energy networks*—District Heating Networks support the Renewable Energy Strategy as they provide energy infrastructure which maximises the effectiveness and efficiency of renewable heat technologies. The GLA plans a programme of work so that 25% of London's energy will be delivered by decentralised energy by 2025.
- *London Thames Gateway Heat Network*—the GLA is looking to set up a heat transmission network to connect sources of low cost, low carbon heating to properties in the Thames Gateway.
- *Better access to energy efficiency investments*—London is lobbying for a fair share of the £2.8 billion energy supplier investment in energy efficiency/CERT funds.
- *Green Enterprise District*—the GLA is exploring the opportunity to create a green industry showcase district, including higher education, clean technology cluster, and a green industrial park.
- *Green 500*—has identified nearly 120,000 tonnes of CO₂ savings across 200 members.
- *Better Buildings Partnership*—these companies hold 15% of London's property assets, and are working on key issues such as green leases.
- *10 new low carbon zones*—funding to catalyse development of 10 low carbon zones to reduce CO₂ emissions by 20%.
- *Green Investment Fund*—LDA is exploring a Green London Investment Fund, using public and private funds, to make investments in environmental programmes.
- *JESSICA*—Progression of the JESSICA mechanism to help fund initiatives supporting carbon reduction for businesses and support environmental infrastructure projects.
- *Homes Retrofit programme*—to retrofit 60% of London's homes by 2015 and save 1 million tonnes of CO₂ in collaboration with London boroughs.
- *Retrofitting Academy*—the LDA is looking to set up a Retrofitting Academy to help deliver fit-for-purpose skill sets.
- *Commercial waste and recycling*—The London Waste and Recycling Board funds improvements in waste management, especially commercial, through the creation of new waste facilities in London. Priorities are waste-to-energy, advanced thermal technologies, and waste processing/reprocessing facilities.
- *Electric vehicles*—our aim is to become the European electric car capital with plans to procure 1,000 electric vehicles across the GLA fleet and deliver 25,000 charge point across London by 2015.
- *Mayor's Green Procurement Code*—drive greater resource efficiency procurement behaviour in the private and public sector.
- *Mayor's Parks and Trees programme*—over four years, the Streets programme will deliver 10,000 trees in 40 priority areas while the Parks programme will improve the public realm offering of 11 parks.

C. THE NATURE OF THE JOBS THAT MIGHT BE CREATED IN GREEN INDUSTRIES AS A RESULT OF THE GREEN FISCAL STIMULUS

Job creation will be widely distributed across sectors and skills

1. The “green economy” agenda is proving to be a lever for job creation and economic growth. The types of jobs that may be required range from higher-level engineers and designers to jobs requiring lesser qualifications such as installation and maintenance of emerging EI technologies. There is also the recognition of potential for transformation of current jobs to lower carbon activities.

2. The Ernst & Young report¹³¹ of March 2009 estimates a “most likely” scenario 14,000 gross jobs per annum from the Mayor’s proposed carbon mitigation initiatives as below:

<i>Scheme</i>	<i>R&D</i>	<i>Finance</i>	<i>PM/ legal</i>	<i>Manuf</i>	<i>Install</i>	<i>FM/ Ops</i>	<i>Total</i>	
Waste plants	100	22	228	75	229	606	1,260	9%
Decentralised energy plants	52	22	101	27	599	47	848	6%
Retrofitting—basic	7	43	55	1,252	1,252	65	2,674	19%
Retrofitting—extra	10	61	79	2,399	1,190	46	3,785	26%
Retrofitting—micro generation	45	27	35	998	507	63	1,675	12%
Public building energy efficiency	12	8	38	258	316	215	847	6%
Commercial building retrofitting	35	23	112	785	930	551	2,436	17%
Electric vehicles	114	32	6	19	352	309	832	6%
Total	375	238	654	5,813	5,375	1,902	14,357	
	3%	2%	5%	40%	37%	13%		

3. Further investigation into “green” jobs and skills for London is currently being scoped. The LDA Retrofit Academy, which is currently under development, also aims to build the evidence base on such “green skills” and test a number of approaches to meet their needs, thereby opening up jobs and skills opportunities. We would be very pleased to share this data as it becomes available.

Identify effective stakeholder frameworks to maximise local job creation

4. There is a real need not only to create jobs, but also to identify effective stakeholder frameworks to ensure co-ordination with a range of partners to maximise this job creation and ensure that these meet identified local needs.

D. THE LOW CARBON INDUSTRIAL STRATEGY, WHAT IT NEEDS TO DELIVER, HOW, AND BY WHEN

1. While the Low Carbon Industrial Strategy makes reference to regional commitments to collaboration between Regional Development Agencies and other partners, and also highlights support for new Low Carbon Economic Areas, the GSE RDAs are not cited. (GSE includes East of England Development Agency, the LDA and South East England Development Agency).

2. Each of the GSE organisations is already working in its region and also across the GSE, to enable the transition to a low-carbon economy:

- The Low Carbon Economy as an established priority across GSE, including making the most of the GSE’s shared assets and opportunities.
- Existing strengths in a number of sectors related to the low carbon economy including the presence of university and research leaders, international relationships, major and emerging companies along with associated supply chains.
- A number of real “on the ground” projects which are being aligned more effectively across the GSE to deliver the greatest benefit to the UK economy.
- Experience and inclination to working across boundaries which will be essential to deliver the government’s agenda at the scale and in the time needed to achieve significant results.

3. Our RDAs work effectively with each other and we would be pleased to offer learnings from this relationship. Given our important role in regional economic development, the GSE RDAs look forward to strengthening our direct involvement in the development and delivery of national low carbon policy.

¹³¹ Prospectus for London, the “Low Carbon Capital”, prepared by Ernst & Young for the London Development Agency, March 2009.

E. THE SKILLS BASE FOR THE UK ENVIRONMENTAL INDUSTRIES, AND THE EFFECTIVENESS OF GOVERNMENT POLICIES TO IMPROVE AND ENLARGE IT

London is working on a fit-for-purpose Retrofit Academy

1. Research suggests that there will be a skills shortage through the introduction of “green” jobs and that without intervention, London will lack the skills to fulfil the jobs being created. While the market is likely to adjust, it may need time to do this (which could impact on delivery) and workless Londoners may not benefit fully.

2. The LDA is developing a virtual Retrofit Academy that will address a potential skills shortage and ensure that London’s workforce is “fit for purpose”, and enable to access jobs in this rapidly growing market. To aid in the development of this subject area, identify approaches and ensure strategic mainstreaming, the LDA is establishing a Low Carbon Skills Group, which will draw together a wide range of key stakeholders and will help to guide policy, project development and implementation.

Skills base—Upskilling vs. new jobs—ascertain what is really required

3. The Skills Strategy White Paper later in 2009 is critical to determining specific skills shortages.

4. It is expected that many of the skills required for the expansion of EI will not be new. Green skills may often be simply additional skill-sets to those which people already possess, and may involve some additional technical training.

5. However, specialist skills may need to be created and cross-sectoral, effective stakeholder participation will be required in establishing effective frameworks for skills development. Some aspects of this are being tackled with the Office for Nuclear Development and The Office for Renewable Energy Deployment working to identify specific skills sets. There is also work in progress for the development of a National Skills Academy for Power.

6. Larger companies are already providing “green skill” training to their own staff in areas which they see they are lacking, in order to stay competitive in their markets,¹³² rather than hiring additional “green” staff. This appears to be supported by anecdotal evidence with larger employers when asked about skills gaps in their own companies.

7. While there is undoubtedly new job creation in EI, these jobs may actually be spread across a wider number of people who work part-time in the “green economy”.

8. This will have implications for formal training programmes:

- Wider provision of green skilling training.
- Additional upskilling short courses/modules should be considered in future Train to Gain and Skills for Jobs funding.
- A speed-to-market system to develop new market-relevant NVQs and higher education courses.

Ensure cross-sectoral consistency to skills provision across EI

9. According to a 2006 report for the LDA, *Green Skills in London*,¹³³ there are 15 out of the 25 SSCs which cover EI and there appears to be an opportunity for greater consistency. Also, green skills are not consistently embedded into National Occupational Standards or workplace training, which means that they may not be part of new training.

10. There is a range of tailored solutions in place to cope with the vocational training programmes which specific industries have identified. However, concerns remain over the ability to mainstream such training to ensure the widest involvement from as many industries and sectors as possible.

11. The GLA would welcome strong guidance from the government to ensure cross-sectoral consistency to skills provision across the EI.

Enhance third sector involvement across EI for social equity purposes

12. According a July 2008 report,¹³⁴ the waste management sector in London has a prevalence of third sector organisations, and these initiatives employ socially-excluded groups in innovative projects which have often led to subsequent deployment on a larger scale.

13. However, as many of the jobs in the green economy are likely to evolve from upskilling of existing private sector resources, socially excluded groups may not benefit from the opportunities arising in other EI sectors without intervention.

¹³² Impacts of Climate Change on European Employment and Skills in the short to medium-term: Company Case Studies—prepared by GHK Consulting for the European Commission, May 2009.

¹³³ *Green Skills in London*, prepared by SE² for the London Development Agency, August 2006.

¹³⁴ *The Commercial Opportunity for London Businesses in the Environment Sector*, prepared by UK CEED for the London Development Agency, July 2008.

14. Considerable effort should be directed to enhance third sector involvement so that employment opportunities across the EI are accessible to all.

31 July 2009

Memorandum submitted by the National Grid

INTRODUCTION

1. National Grid owns and operates the high voltage electricity transmission system in England and Wales and, as Great Britain System Operator (GBSO), we operate the Scottish high voltage transmission system. National Grid also owns and operates the gas transmission system throughout Great Britain and through our low pressure gas distribution business we distribute gas in the heart of England to approximately eleven million offices, schools and homes. In addition National Grid owns and operates significant electricity and gas assets in the US, operating in the states of New England and New York.

2. In the UK, our primary duties under the Electricity and Gas Acts are to develop and maintain efficient networks and also facilitate competition in the generation and supply of electricity and the supply of gas. Our activities include the residual balancing in close to real time of the electricity and gas markets.

3. Through our subsidiaries, National Grid also own and maintain around 18 million domestic and commercial meters, the electricity Interconnector between England and France, and a Liquid Natural Gas importation terminal at the Isle of Grain.

4. National Grid is committed to playing its part in addressing climate change, alongside others. In order to reach the Government targets of 80% emissions reduction by 2050, and 15% renewable energy sources by 2020 we will need Government, industry and consumer collaboration to determine a route-map or masterplan for meeting targets. A joined-up approach is essential to get the right legislative and regulatory frameworks in place and ensure necessary infrastructure investment is available in a timely manner for the connection of new renewable sources of electricity generation, and development of technologies such as biogas production, and linking smart meters into smart grids.

5. It is important to stress that the low carbon economy cannot be achieved if we do not get the right skills, in the right places, at the right time and in the right quantities to enable business to take advantage of the growing markets in this area. Engineering expertise is critical to maintain security of supply through the operation of the electricity and gas systems.

6. Consequently, looking ahead to 2020 and beyond there is both a challenge and an opportunity in ensuring we can recruit and retain staff with the skills and expertise to manage our future networks. Given the age profile of our workforce, and given the scale of the challenge we face, National Grid is going to need to retrain or recruit approximately 1,000 new engineers within the next 12 years to support its UK transmission business. These people will be vital to run the gas and electricity networks and therefore to deliver a low carbon energy future.

LOW CARBON ENERGY AND EMPLOYMENT

Smart grid trials

7. In order to achieve our renewable energy ambitions and to maintain historical levels of security of supply we will need a diverse mix of generation, investment in large scale transmission networks to facilitate new generation as well as investment in smart grids. In our US business we plan to run a number of smart grid pilots—in Massachusetts and New York.

8. The pilot in Massachusetts will cover 1% of our customer base and include a wide variety of customers from urban, suburban and rural settings with variable electricity usage. The pilot will test the addition of distributed generation and will build in options for adding renewables and plug-in hybrid vehicles (PHEV) to the system. More than 100 National Grid employees, contractors, vendors will be involved in the pilot.

9. In New York we have recently applied to build and operate two 40,000 customer smart grid demonstration projects in the Syracuse area and the Capital District. Under the programmes, all customers will receive a smart meter, and as an option, customers can have additional equipment installed in their homes that include special programmable thermostats and other devices that provide data and support energy management. Participating customers will be asked how they prefer to receive their energy information—via text message, from the Internet, or on a PDA—and arrangements will be made for them to view and monitor energy consumption on a real-time basis. Additionally, customers will have the option to receive a new rate plan that allows them to save money during periods when electricity use is at its highest across the region.

10. We estimate that the two New York projects could create 200 jobs. Some will be directly related to the pilot's implementation and others will be indirectly related. All can be considered "green jobs." We will share findings from our US experience of smart grid trials with UK policy makers.

Carbon Capture and Storage

11. When looking at individual low carbon technologies, it is apparent that their application can have a wide impact on the economy—both through direct employment and throughout various supply chains and their associated multiplier effects.

12. National Grid is currently looking at Carbon Capture and Storage as we feel that it represents an opportunity to significantly reduce CO₂ emissions from fossil fuelled power stations, and could be the largest contributor to meeting global emission reduction targets. As experts in managing networks with a strong record of delivering large scale investment in energy infrastructure we hope that there may be a role for National Grid in the future deployment of CCS in the UK.

13. As outlined recently by Government, there is the potential to create CCS clusters in the Humber, Firth of Forth, Teeside and the Thames Estuary. Creating a cluster in the Humber region (Yorkshire) looks to be the most significant, in terms of initial benefits to Britain, as 40% of UK power stations would be within reach of a CCS network.

14. Over the construction period of a Humber CCS cluster, the RDA “Yorkshire Forward” estimate that 55,000 new jobs in the region could be created with the cluster network underpinning several thousand more key jobs in the power generation, heavy manufacturing and coal industries in the region.

NATIONAL GRID’S SKILLS BASE

15. The demand for engineering professionals is set to rise in the UK in the next 10 years due to advances in technology and changes in industry and consumer demands. National Grid face a challenge to attract, recruit and retain engineering talent at the NVQ level and beyond, in order to ensure continuity of our business operations, and to facilitate future innovation in the engineering sector.

16. The skills of National Grid employees are at the heart of our success in reaching world class safety and operating and financial performance. Many of our organisation’s roles are complex, requiring a wide range and depth of skills—for example we require commercial expertise in order to forecast supply and demand of gas and electricity; engineering apprentices to build and maintain overhead powerlines and gas pipelines; finance graduates to manage accounts and a range of other skills and expertise in power systems, IT, Safety, and Supply Chain Management.

17. We take the training and development of our staff seriously, upgrading their skill sets, developing competencies and working to ensure that we meet future engineering skills shortages through training. Various Apprenticeships are offered by National Grid ranging from 24–36 months, all of which contain substantial elements of on the job training. At any one time National Grid has up to 200 Apprentices training and studying to gain qualifications. National Grid was awarded Beacon status for its apprenticeships in 2009 by the LSIS, placing us in the top 5% of learning providers. On average it costs National Grid up to £75k to train an apprentice.

18. Through a partnership approach with EU Skills and Aston University, National Grid has developed an Electrical Technology Foundation Degree. The qualification consists of a number of modules, some of which are centred on developing core skills to be utilised across the engineering sector, other modules are specific to National Grid’s electrical transmission business. The Foundation Degree is designed to combine academic study with work place learning to equip students with relevant and practical knowledge and skills.

19. To date the Electrical Technology Foundation Degree has been very successful with over 20 students already working with us and taking up accredited qualifications at Aston, and we plan to roll Foundation Degrees out to 35 students in 2010. In addition to Level 5 recruitment we will be recruiting 25 graduates onto our UK graduate programme during 2010 and will continue to sponsor more than 10 graduates on a full engineering scholarship throughout their university course and summer placements working with the IET Power Academy.

National Grid research—encouraging future engineers

20. We believe that up to 33% of our current UK transmission engineers will retire between now and 2020. National Grid will be looking to create over 1000 new engineering roles to resource our UK gas & electricity transmission business, keeping the lights on and the gas flowing, but we recognise that the work we are currently doing to “grow our own” talent and invest in training will not be sufficient to meet our own future engineering needs. To assist our future workforce planning we have conducted a piece of research to address why the engineering talent pool was shrinking and how we could encourage more young people to take up STEM subjects and think about careers in engineering.

21. The early qualitative research focussed on asking teachers, parents, school children, and our own engineers about their perceptions of engineering. Initial findings indicated that people found it hard to define the role of an engineer. Both parents and teachers felt that the term “engineer” was too vague and they associated a career in engineering with a menial role—fixing something, physically demanding and low paid. In addition, we found that a number of children couldn’t visualise what an engineer does every day—or even name a recent engineering achievement (even those studying STEM).

22. We also found that there was an element of snobbery and prejudice surrounding take up of a career in engineering. A number of parents felt that engineering was a male orientated career, and was about “fixing” problems rather than “creating” and design. STEM academic parents and Black and Minority Ethnic parents felt that taking up a career in engineering may be settling for a lesser option. A positive finding from the research was that people who knew engineers are best placed to see the benefits of the career, such as good salaries, and the ability to work around the world. Interestingly a significant proportion of our own National Grid engineering workforce that were surveyed had a family connection to engineering—this had influenced their decision to take up an engineering career.

23. In terms of tackling the issues raised we appreciate that as an engineering organisation, we have a key role to play in making the link between engineering, creativity and technology. In order to achieve this we envisage that we will focus on making early interventions with children of school age and organising opportunities for young people to have greater exposure to engineers, perhaps through more open days, talks in schools and after school clubs; and there is a need to engage with teachers and parents to demonstrate the practical and aspirational side of engineering.

24. After completing the quantitative research we held a series of roundtable workshops with the Royal Academy of Engineering (RAE) to share our research findings with, industry groups, representatives from schools and universities and other organisations who seek to promote engineering and STEM. Our participation in the debate was welcomed by industry groups. Having shared the data from our research we are currently in the process of working out the best interventions to make with young people, teachers and parents in order to make engineering a profession of choice.

25. In addressing the public policy agenda we are clear that there is a significant role for industry to play in communicating more clearly the link between STEM subjects and the careers available in engineering, science and technology. However we also feel that although Government has made major strides in tackling skills issues, bringing in the Level 2 Skills Pledge; rolling out Foundation Degrees at Level 5 and in the last six months, nationwide roll out of the new Engineering Diploma; much more needs to be done to focus and hone skills and training investment specifically to STEM related subjects.

26. The general consensus from our roundtable workshops with the RAE and industry groups was that science, engineering and technology skills must be made an educational priority and funding needs to be underpinned by foresight of the needs of the UK as a whole with a 20–30 year outlook.

27. National Grid will continue to work with RAE to address how UK industry can deliver more STEM students and how to change the current perception of engineering. We hope to share some of our thoughts and solutions with policy makers and industry during the summer (2009).

28. As UK plc we must act now to invest in the future UK engineering talent base and encourage more young people to take up STEM subjects, in order to ensure that we have the future skills we need to innovate, design and manage a low carbon energy system.

3 June 2009

Memorandum submitted by Acre Resources Ltd

SUMMARY

1. Being a leading green recruitment firm, Acre has a strong interest in the emergence of a significant green job market in the UK. We follow the market closely through our own placements, surveying the market with our partners, and following press reviews. We remain hopeful but concerned about the position that the UK government is taking. We hope that the Environmental Audit Committee will find this submission valuable, and that it will be used to spur the government into capturing lost ground in the green job market.

In this submission we hope to make the following points;

- (i) The thinking around legislative solutions to climate change has now reached a point where we can see an emerging solution, against which current government policies can be judged.
- (ii) The UK government can claim genuine leadership in a number of important areas, for which we applaud them;
 - Making long term commitments to reduce carbon emissions;
 - Enacting these commitments into law;
 - Putting cap & trade at the heart of their legislative solution;
 - The imminent introduction of the Carbon Reduction Commitment (CRC).
- (iii) Cap & trade schemes will not start to sufficiently influence decision making or green job markets for at least three years, which makes the supporting local sector policies of prime importance.

- (iv) We look at the example of the energy sector, which is arguably the most important sector from a green jobs perspective, and we compare the performance of the UK government to that in Germany. We find that as a result of different policies, the UK's renewable job market is 10% of the size of Germany's.
- (v) We are concerned that the UK is failing to deliver leading local sector policies, and as a result we are not preparing these sectors for the emergence of a global cap & trade scheme. We believe there will be a real cost in terms of jobs and exports of not establishing this knowledge in the UK.
- (vi) Putting in the right climate change legislation is a commercial imperative, not something we ought to be doing on moral grounds.

ABOUT ACRE RESOURCES

2. Acre is widely regarded as the leading green job recruitment firm. There are no surveys to back this up, but we were one of the first entrants to the market (2003), and we place a wide spectrum of roles from Energy Managers to Heads of Sustainability at major firms. Acre has placed jobs with over 20% of the FTSE100, and we have over 30,000 CVs registered on our database of "green" professionals.

3. Acre is committed to sustainable business, with an equal emphasis on both words. We collaborate with the legislators (for example, we are supporting and actively raising awareness within UK commerce of the CRC scheme, we do this with full encouragement from DECC), but we also believe the market, and the profit motive, is the only way we can solve the problem in the timeframes we have. We do not come at this from the viewpoint of most environmentalists or campaigners.

WHAT DOES ACRE MEAN BY THE "GREEN JOB" MARKET?

4. It may help the Committee if we explain what we mean by "green jobs". Whilst the word "green" is generally used in a broad context, including more traditional sectors such as Contaminated Land, we are using it here in a narrow sense to refer to sustainability or climate change. We then divide "green jobs" into two sub-categories;

(i) *Bright Green jobs*

These are people who are hired for their knowledge of sustainability or climate change. They are likely to have a qualification in sustainability, and may have the role of "Sustainability Consultant" within a consultancy firm, or be an in-house expert such as "Head of Sustainability" or "Energy Manager". This is a small and specialist market that we expect to remain a tiny fraction of the national job market.

(ii) *Pale Green jobs*

Acre uses "Pale Green" to define those who are primarily employed for their knowledge of a profession, but where the issue of climate change underlines their job prospects. For instance, in the renewable energy sector, a role might be advertised as an "engineer", but the position may have been created in response to legislation. Energy efficiency is also a big component of this market—an illustration would be a salesperson who works for a firm that develops intelligent technology for managing energy usage in fridges.

Pale Green jobs are hard to measure, but we estimate that these jobs could account for over 500,000 new UK jobs over the next five years, assuming appropriate legislation is put in place. At least half of these should come from renewable energy jobs. We expect the following main Pale Job categories;

- Engineers—renewable energy & energy efficiency.
- Environmental lawyers.
- Carbon Traders.
- Accountants (including carbon auditors).
- Scientists (especially for Nuclear).
- Management (including Non-Exec Directors).
- Sales people.
- Support roles (HR, admin etc).

ACRE'S VIEW OF THE APPROPRIATE LEGISLATIVE SOLUTION

5. In this section we will outline what we regard as an appropriate legislative solution to climate change, as it is from this viewpoint that we will go on to judge the UK government's performance. We base our position on that laid out by Sir Nicholas Stern in his "Blueprint for a Safer Planet" (April 2009), as we believe it represents the least cost solution and the one that most Western countries seem poised to adopt. For the sake of this paper we briefly summarise this position.

The main plank—cap & trade

6. Stern noted in his 2006 Stern Review that climate change is the greatest and widest-ranging market failure ever seen. The market is failing to correctly price the environmental consequences of carbon-emitting products and services. By identifying the problem in these terms, the natural solution is to account for all the carbon that is emitted in getting goods or services to market, and put a price on them through a cap & trade scheme. The advantages of this solution are as follows:

- (i) Cap & trade has a history of solving environmental problems cheaply, with the main example being the abatement of Sulphur Dioxide emissions in the 1970's in the US. Prior to its introduction, the major polluters commissioned a report that estimated it would add \$12 million to their costs. The actual cost turned out to be \$500k, as the polluters found ways of avoiding the emission of SO₂.
- (ii) It spurs the market to deliver energy efficiency. Acre recently surveyed 1,200 climate change professionally (result will be published on 3 June), and found that their biggest focus at the moment is on improving energy efficiency. If energy prices increase because a carbon price is added, the market will focus on ways of improving efficiency.
- (iii) It is likely to attract entrepreneurs to the issue, who otherwise may not engage. Not only does it attract clean tech and energy efficiency entrepreneurs, but it also creates a return for entrepreneurs who invest in technology that sequesters carbon out of the atmosphere. It opens the door for the richest person in the world being the person who can sequester carbon at a cheap price, and sell it into the market. The right solution should reward this person.

7. It is no surprise, therefore that an increasing number of governments are committing to cap & trade schemes, and in the long run the solution will be to join these schemes up and create a global price for carbon.

Supplementary legislation

8. Stern is clear that only when a credible global carbon price has emerged will businesses use it as a major decision driver, and that this will take years to come into effect—probably five to 10 years from now. The price of a tonne of sulphur on the US Sulphur Dioxide market fluctuated from lows of \$70 to highs of \$1,550, before eventually settling at \$150 / tonne. Until certainty is achieved, businesses will struggle to factor the carbon cost into their long term planning.

9. As a result, it is vital that the government initiates sector-based legislation to encourage the low carbon development of these sectors. There are a number of key sectors that currently account for significant amounts of emissions, some of which are listed below. A failure to prepare these sectors effectively will give them a painful and expensive transition to a low carbon environment, particularly because of their long investment cycles,

- Transport—improving efficiency of cars, encouraging switch to grid-based solutions.
- Built environment—over 40% of emissions are lost through buildings, and they represent some of the lowest abatement costs. BREEAMS, EPCs and building regulations are a step in the right direction, but have not been effective in taking the issue into the board room.
- Energy—discussed below.

ASSESSMENT OF THE UK GOVERNMENT'S POSITION

Overall stance

10. There is little doubt that this government is a leader when it comes to setting aggressive future targets, and enacting these targets into law, but there is a well-documented disconnect when it comes to introducing the policy that will allow the targets to be met. This could be argued to be the worst of all worlds, as it makes the voters feel that progressive action is being taken, but it is storing problems up for the future. We would applaud the introduction of key performance indicator targets to be reached at short term intervals to impose accountability and a responsibility to immediate action.

11. This disconnect would seem to stem from two core beliefs. Firstly, that the costs of mitigating climate change are high, and secondly, that the costs of not mitigating climate change will only become significant beyond the end of the next term of government. On this basis, an election-winning strategy would be to recognise the extent of the climate change problem, and set aggressive targets, but be in no hurry to introduce the economic costs. It would support the Climate Change Bill and back a 3rd runway at Heathrow Airport.

12. If this is a correct representation of the government's stance, we believe it is strategically flawed. It is based on delaying meaningful legislation, in the belief that it is more expensive than it is likely to turn out to be, and in doing so it will build up a long term adjustment cost for the UK. A more commercial strategy would be to pursue stringent legislation, creating technological advantages and a vibrant green job market.

Cap & trade

13. With the UK Emission Trading Scheme, introduced in 2002 and rolled into the EU ETS in 2006, the UK government has been a leader in cap & trade and should be applauded for this. The expected introduction of the Carbon Reduction Commitment in April 2010, extending this to a further 5,000 businesses, is another major step in the right direction.

14. It is hard to tell how many jobs will be directly created by the UK's leadership stance on cap & trade. The majority of the companies covered by the Carbon Reduction Commitment will need an Energy Manager, if they do not already have one, and our discussions with companies in this area suggest that around 500–800 Bright Green jobs will be created by this legislation.

15. The number of Pale Green jobs will come down to how onerous the market deems the price of carbon to be. It is fair to say that the effective price of carbon for the first three years of any new scheme is weak in order for it to be adopted. On this basis, it is hard to see how the CRC will generate more than three jobs per participating company, which would make a generous 15,000 new Pale Green jobs.

Energy sector—in comparison with Germany

16. Germany provides an example of how effective energy sector green legislation can create new jobs and new export income, and therefore provides a good yardstick for UK energy legislation. In the mid 1990's Germany had virtually no renewable energy sector, but the introduction of the Feed-in Tariff in 1999 with a guaranteed buying price for a 20-year period immediately ignited the market. Some current statistics about the German renewable energy market;

- 9% of energy consumption comes from renewable energy.
- 23,000 MW capacity as at the end of 2007.
- 20,000 turbines, more than any other country.
- German manufacturers have a 37% market share in the global turbine and components market.
- Earned Euro 6 billion in exports in 2007.
- By 2020, wind capacity is expected to be 55,000 MW.

17. This success has translated in a sharp growth of Pale Green jobs. According to the World Future Council (March 2009), at the end of 2008 Germany had 285,000 jobs in the Renewable Energy sector; Wind (34%), Biomass (39%) Solar (20%), Hydropower (4%), Geothermal (2%) and other (2%). 35,000 of these were new jobs created during the course of 2008.

18. The UK introduced its alternative, Renewable Obligation Certificates (ROCs) in 2002, which obliges electricity supplier to source a minimum amount from renewable sources. One gets an immediate feel for the relative effectiveness of this legislation by looking at the fact that only 2% of the UK's energy needs are met by renewables, compared to Germany's 9%.

19. The UK picture is even bleaker when it comes to jobs. It is hard to find reliable renewable energy job figures in the UK, which is meaningful in itself, but the BERR website estimates that around 8,000 people were sustained by the renewable energy industry in 2003. The BERR website goes on to say that the UK government expects its policy to generate an additional 17,000 to 35,000 new renewable energy jobs by 2020—hardly an aggressive policy, and it points to the current renewable energy job market being less than 20,000 today.

20. In order to make a comparison with Germany, we need to reduce the German figure by 27% to reflect the population differential, arriving at 209,000 jobs. This very basic maths would suggest that the UK's energy policy has created less than 10% of the green jobs that Germany's Feed-in-Tariff has created.

Summary of UK policy

21. Our view is that the UK government is getting the overall legislative strategy right by putting a cap & trade scheme at the heart of the legislative solution and extending it to smaller businesses. It can still claim to be amongst the global leaders in this regard, and it is likely to find that other countries will increasingly adopt a similar stance.

22. However, we note that it is unreasonable to expect these early stage schemes to have a significant impact on business decision-making over the coming years, so we cannot expect them to be a short term driver to a sustainable economy nor a significant pale green job market. The responsibility for this has to fall to sector-based legislation.

23. Acre has not analysed the green job markets to come from the Built Environment or Transport sectors, but it is likely that similar patterns would emerge. It is Acre's opinion that the supporting legislation needs to be looked at in earnest, with a view to nurturing the technologies and skills needed to lead in a sustainable economy. UK PLC could be at a major disadvantage if it has to import technology and knowledge, when it could have created an extensive job market and a major boost to exports.

CONCLUSION

24. Acre is a major beneficiary of a fast-growing Bright Green and Pale Green job markets, but so is UK PLC. We are now at a point where it is more likely than not that the world is going to collaborate on green legislation, led by negotiations between the US and China. Climate change policy is likely to be a major disruptive force in the global economy, and therefore be a major generator of new jobs.

25. Where these jobs and technologies are created will be determined in large part on the supporting legislation that is introduced in each country. Early adopters will be exporters with vibrant job markets; late adopters will be importers and have smaller job markets. Whilst some vested interests will lobby against legislation, good policy makers will make balanced decisions which will in most cases come down in favour of nurturing industries of the future.

26. This represents a huge opportunity for the UK, which has had a deep understanding of climate change and policy. It feels to us that we are losing our opportunities to be leaders in the new paradigm because of our political stances. We hope that the Environmental Audit Committee fulfils its mandate of auditing the government's performance effectively, and pressurises it to seize the opportunities that remain for the taking. The window is closing.

27 May 2009
