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Environmental Audit
Committee

Green Jobs and Skills

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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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Contents

| Report | <i>Page</i> |
|---|-------------|
| Summary | 3 |
| 1 Introduction | 5 |
| A Green New Deal | 5 |
| Skills Gap | 6 |
| Our inquiry | 6 |
| 2 Current Policy | 7 |
| Fiscal Stimulus | 7 |
| Low Carbon Transition Plan | 9 |
| Activism and selecting for stimulus | 10 |
| Wider financial incentives | 11 |
| 3 Where are the green jobs? | 13 |
| Job Displacement | 14 |
| Fair transition | 15 |
| Quick Wins | 16 |
| 4 Skills for the Transition | 18 |
| A Simpler Skills System | 19 |
| A Green Skills Leader | 20 |
| A Targeted Approach | 21 |
| Skills Forecasting | 21 |
| A Low-Carbon Skill Set | 22 |
| 5 Conclusion | 24 |
| Conclusions and recommendations | 25 |
| Formal Minutes | 27 |
| Witnesses (Volume II) | 28 |
| List of written evidence (Volume II) | 29 |
| List of unprinted evidence | 30 |
| List of Reports from the Committee during the current Parliament | 31 |

Summary

Action is being taken across the globe to stimulate low-carbon and green industry during the current economic downturn. The US have a range of detailed policy proposals which aim to make it a world leader in environmental industries. In January the US President stated that his 2009 Economic Stimulus Plan will spend over \$50 billion to create half a million new green jobs. Other governments including Germany, Japan and Korea have taken similar action.

We recognise that the UK Government has allocated a significant amount of money for delivery of its Low Carbon Industrial Strategy and its Low Carbon Transition Plan. This includes the first investments from the £405 million for low-carbon industries and advanced green manufacturing announced in the 2009 Budget. The scale of this investment is not enough to meet the Government's emissions targets nor is it enough to provide the economic advantage needed for the UK to compete at an international level.

Employment opportunities in low-carbon industries are significant. To take advantage of these in the face of global competition the Government must move quickly to identify those sectors in which the UK can take a lead. It must develop a strategy that encourages investment both by reducing barriers to growth and by ensuring a stable demand for low-carbon products and services. The Low Carbon Industrial Strategy goes some way to achieving these two aims. It is actively targeting the renewable energy sector but does not effectively address a transition across the whole economy. There has been discussion and some activity, but the transition is not yet happening. Industry leaders and investors must be reassured that the Government is committed to long-term support for low-carbon industries. Businesses must be encouraged to take the low-carbon route to growth and a strong carbon price is best way to do this.

The Climate Change Act 2008 provides for legally binding carbon reduction targets. The Committee on Climate Change has identified key sectors in which energy savings must be made. The Government's strategy on green jobs must be directly linked to these sectoral targets and green industries developed to achieve these. In particular a 'quick win' street-by-street programme of energy saving measures for households must be developed as a priority.

Relying exclusively on the market to address skills gaps is causing delays in greening the economy. The demand-led approach to skills has not worked because employers are unable effectively to articulate their needs to the skills delivery bodies. The Government's new skills strategy must prioritise the skills needed drive the economy through the low-carbon transition. A body to lead the green skills agenda must be found and low-carbon skills need to be integrated through the whole skills delivery system to encourage behavioural change across the entire economy.

1 Introduction

1. The Committee on Climate Change's first three carbon budgets were broadly accepted by the Government and became law in May 2009.¹ The budgets require an emissions reduction of 34% in 2020 and 80% in 2050 relative to 1990 levels.² To achieve these targets the UK will need massively to reduce its dependency on carbon. This will have huge implications across all sections of society. Industry will have to de-carbonise; homes will have to become more energy efficient; transport must become more sustainable.

2. On July 15 2009, the Government launched the Low Carbon Transition Plan. This is a strategy to make the UK a low-carbon nation. Alongside it the Government also published a Low Carbon Industrial Strategy, a Renewable Energy Strategy and a Low Carbon Transport Plan.

3. The Government predicts that the effects of the recession will be less severe in the low-carbon sectors. As economic uncertainty is reduced a significant proportion of growth could be generated by renewable energy activities and other low-carbon industries (these include: low-carbon transport, energy efficiency, nuclear energy, carbon capture and storage, and carbon finance). The UK has a chance to gain comparative advantage in key areas of the environmental supply chain through developing internal capacity and maximising export markets.³ Developing a sustainable low-carbon economy is the only way to meet our climate change commitments while maintaining a healthy economy and high levels of employment.

A Green New Deal

4. Governments over the world have moved to implement their own forms of green fiscal stimulus to tackle current economic instability. These are programmes designed to inject spending and demand for labour into environmentally friendly sectors.

5. Proponents of a green fiscal stimulus for the UK argue that investment in green infrastructure will stimulate employment and economic growth in the short-term and will ensure the UK workforce gains the necessary skills and expertise to compete in a low-carbon economy in the medium- and long-term. 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 transition to a low-carbon economy. 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.⁴

1 Committee on Climate Change, *Building a low carbon economy: the UK contribution to tackling climate change*, December 2008

2 Carbon Budgets Order 2009 (SI 2009/1259)

3 Ev 101

4 Aldersgate Group, *Commission Statement: Driving Investment and Enterprise in Green Markets*, June 2009, p28

Skills Gap

6. The Government will not be able to deliver the Low Carbon Transition Plan without the right skills and human capital. The Commission on Environmental Markets and Economic Performance (CEMEP) was established to ensure that the UK is able to seize the new opportunities of the low-carbon economy. CEMEP noted that one in three firms in the environmental sector is being hampered by a shortage of skilled staff.

7. Government has responded to a similar challenge in the energy sector by creating a new National Skills Academy for Power and a new Sector Skills Compact, to deliver more highly skilled and qualified workers in the nuclear, oil and gas industries. The Government published Skills for Growth, its new national skills strategy on 11 November 2009. This provides a commitment to invest further in skills for the sectors on which future growth and jobs depend.

8. The evidence we have received suggests the skills gap still represents a major barrier to UK success in environmental markets. We have also received evidence that a more general green skills set will be required to provide the entire economy with resource efficiency and leadership skills needed as the economy moves to more sustainable patterns of production and consumption.

Our inquiry

9. This inquiry builds on our recent work into the green fiscal stimulus aspects of the 2008 Pre-Budget Report and considers how the UK can maximise the environmental opportunities from changes in public spending to tackle the recession.⁵ Our report provides an assessment of the Government's cross-departmental approach to developing a low-carbon economy and providing the investment and skills base for this.

⁵ Environmental Audit Committee, Third Report of Session 2008-09, *Pre-Budget Report 2008: Green fiscal policy in a recession*, HC 202

2 Current Policy

Fiscal Stimulus

10. The last Pre-Budget Report announced details of a ‘green fiscal stimulus package’. This formed part of a wider economic stimulus package, “bringing forward £3 billion of capital spending from 2010–11 into 2009–10 and 2008–09 for housing, education, transport and other construction projects, supporting industries and jobs across the country”.⁶ The ‘green’ element was only worth approximately one-sixth of this total and included:

- £405 million to help establish the UK as a market leader in renewables technology and advanced green manufacturing in the next two years;
- £50 million extra for the Technology Strategy Board to expand its work with business, developing innovation and new technologies;
- £375 million to help households and businesses with energy and resource efficiency;
- an uplift in Renewable Obligation banding for offshore wind for projects closing over the next two years. Under this, renewable electricity producers will receive an increased number of renewable obligation certificates for each MWh of electricity they generate. These are sold to electricity suppliers who to meet targets to get a proportion of their electricity from renewables; and
- £90 million more to fund engineering and design studies for Carbon Capture and Storage (CCS).

11. In our report on the Pre-Budget Report we noted that though the £535 million capital investment was welcome, it was not enough—especially given that most of this funding was already committed, and would be offset by reduced spending in 2010–11.⁷

12. The Environmental Industries Commission (EIC) recognised that the Government has allocated a significant amount of money for delivery of its Low Carbon Industrial Strategy but they argued that its scale was significant only in relation to previous levels of funding and to traditional Treasury thinking. In their view it was inadequate when compared to the conclusions of the Stern Report, the Government’s emissions targets, the recommendations of the Committee on Climate Change and the scale of low-carbon fiscal stimulus expenditure in many other countries. They believed that there was a need to recalibrate thinking in the Treasury and the Department for Business, Innovation and Skills in order to base policy-making on a realistic appraisal of the changes required.⁸

13. The US, for example, has a range of detailed policy proposals and plans to spend over \$50 billion to create half a million new green jobs.⁹ Germany, Japan and Korea have

6 HM Treasury, *Pre-Budget Report: Facing global challenges: Supporting people through difficult times*, Cm 7484, November 2008, p 7

7 HM Treasury, *Pre-Budget Report: Facing global challenges: Supporting people through difficult times*, Cm 7484, November 2008, Table 1.2, p.10

8 Ev 58

9 HSBC Global Research, *A Climate for Recovery: the colour of stimulus goes green*, February 2009

announced major growth plans for their domestic environmental industries. China's economic stimulus plan includes a \$142 billion programme of environmental measures. The Federal Germany Environment Ministry predicts that growth in environmental technology markets will outstrip traditional economic sectors, with a 4% annual growth rate, taking turnover in Germany to €1000 billion by 2030. Employment in the renewable energy industry in Germany has increased by almost 50% between 2004 and 2006 and is predicted to reach 400,000 by 2020.¹⁰

14. In the UK, despite the fiscal stimulus provided in the Budget, investment in green industries has been difficult to secure. BP has cut investment in its alternative energy and other non-core business units by almost 30%, and Shell says it will make no significant new investments in wind or solar power in the near future.¹¹ Both are maintaining steady investment in oil and gas exploration. The recent closure of the Vestas wind turbine factory on the Isle of Wight with the loss of 600 jobs received a lot of media attention. Vestas will maintain a research a development facility on the Island with the support of the UK Government which is expected to grow providing employment for 150 staff.¹²

15. The Sustainable Development Commission suggested to us that a fiscal stimulus in the range of £30 billion was required.¹³ The TUC suggested a stimulus of £25 billion, and the Environmental Industries Commission (EIC) has suggested it should be £45 billion. EIC said:

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 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.¹⁴

16. The 2009 Budget also announced access to a share of £4 billion of new capital from the European Investment Bank (EIB) through direct lending to energy projects and intermediated lending to banks. We have heard that this funding is not readily accessible and that the Government's estimates of its share to the UK may be optimistic. The EIC said that in 2008 the UK only received around 6% of European Investment Bank loans. When measured against the £4 billion this works out at £240 million.¹⁵ The Government believed that EIB capital would provide £1.4 billion for renewables projects in the UK. The

10 Federal Environment Ministry, *Ecological Industrial Policy. Memorandum for a "New Deal" for the economy, environment and employment*, 2006 and Federal Environment Ministry, *Renewable energy: employment effects*. Federal Environment Ministry, 2006

11 *ENDS Report 410*, March 2009, p 10

12 "Vestas closes blade factory on the Isle of Wight", Vestas press release 6/2009, 12 August 2009

13 Ev 25

14 Q176

15 Q182

Government have recently announced that three UK-based banks will start offering intermediated EIB loans to onshore wind farms.¹⁶

17. The money offered in the UK's green fiscal stimulus is not enough to compete internationally in environmental sectors worth £3 trillion.¹⁷ A priority to move quickly and gain a competitive advantage is essential. **The Government should urgently increase the amount of money that contributes to the overall green stimulus by 'greening' more of its current spending plans and ensuring access to European Investment Bank capital; by doing so it will help create home markets and develop first mover advantage.**

Low Carbon Transition Plan

18. However, if the UK is to develop competitive low-carbon industries, most of the investment will need to come from the private sector. Public spending is very likely to be reduced over the next five years to restore public finances to sustainable levels. To attract private investment the Government's transition policies must be clear and provide a sufficient degree of long-term predictability. CEMEP called for a framework that is "long, loud and legal".¹⁸ The SDC noted that doubts within industry about future policy and financing were a major impediment to action. They called for clearer signalling of future policy and said that industry is sceptical about the Government's intentions in the short- to medium-term and is unsure that either the regulatory or fiscal regime required to drive the low-carbon transition will be established.¹⁹

19. The Government has sought to provide clarity about its policy framework. Its Low Carbon Transition Plan was published in July 2009 to tie together energy, transport and economic policy. It sets out the pathway for meeting the 34% cut in emissions on 1990 levels by 2020 under the carbon budgets. The Transition Plan was accompanied by a Low Carbon Industrial Strategy, which sets out interventions to support industries critical to tackling climate change; a Renewable Energy Strategy which maps out how we will deliver the UK's renewable energy target by 2020; and a Low Carbon Transport Plan, which sets out how to reduce carbon emissions from domestic transport over the next decade. Together they provide a set of high level goals for 2020 across the UK economy. These include:

- More than 1.2 million people will be in green jobs.
- 7 million homes to will have benefited from whole house energy-efficiency makeovers, and more than 1.5 million households will be supported to produce their own clean energy.
- Around 40% of electricity will be from low-carbon sources, from renewables, nuclear and clean coal.
- The average new car will emit 40% less carbon than now.

16 "Up to £1.4 billion in new loans for onshore wind farms" DECC press release, 2009/131, 10 November 2009

17 Ev 101

18 Commission on Environmental Markets and Economic Performance, *Report*, November 2007, p6

19 Ev 26

20. In September 2009, the Government published *Jobs of the Future*, 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.²⁰

21. The Committee on Climate Change, published their first report to Parliament on progress towards the carbon budgets in October 2009. This concluded that the transition was not happening fast enough and that a ‘step change’ in emissions reductions was required if we were to have any hope of meeting our carbon budgets.

22. We recognise that the Low Carbon Transition Plan attempts to provide a clear signal about the move to a low-carbon economy. The evidence we have received, however, leaves us unconvinced that the Government is providing business and industry with enough detail about the changes that need to be made in a way that would enable them to secure sufficient investment against clearly achievable business plans. **The Government must provide industry with a clear and stable long-term policy framework to guide them through the low-carbon transition with enough detail to enable them to secure investment. Business needs to be confident that financial incentives and regulation designed to promote low-carbon industries will be maintained. In addition a bipartisan political approach should be sought wherever possible.**

Activism and selecting for stimulus

23. During the economic downturn it is essential that support is targeted at those areas of the economy that will provide the greatest advantage in terms of carbon reduction, job creation and international advantage. Policies that remove barriers and encourage investment are needed to develop industries and jobs in the low-carbon economy. This includes providing funding, encouraging markets and reducing the delays, risks and uncertainties posed by planning and other obstacles.

24. The Low Carbon Industrial Strategy identifies a number of low-carbon sectors in which the UK has the potential to take a leading global role. It sets out policies to make British industry more competitive in these sectors. A number of measures to address market failures or barriers are being used, including the first investments from the £405 million for low-carbon industries and advanced green manufacturing announced in Budget 2009. Grants totalling £6 million were awarded by DECC to wind turbine manufacturers on 16 September. The largest—£4.4 million—has gone to Clipper Wind Power to help develop 70-metre-long blades for its Britannia project, a 10MW offshore wind turbine.²¹ These market interventions form part of the Government’s industrial activism first advocated by Lord Mandelson in December 2008. This aims to bring together different strands of government policy to ensure low-carbon companies have access to the infrastructure, skilled workers, research and development. Government argues that policy should be

20 Cabinet Office, *Jobs of the Future*, September 2009

21 "Made in Britain: the world's biggest wind turbine blades Cutting edge offshore turbines bigger than the Blackpool tower", DECC press release 2009/100, 16 Sept 2009

activist in the sense that it recognises that government can and must complement market dynamics to get the best outcomes for the economy.²²

25. This activism is strongest for off-shore wind energy. BWEA told us that once the permission for the next round of developments has been awarded, there will be 565MW of operating capacity in UK waters, 1,240MW under construction and 3,600MW with consents but not yet being built. BWEA also state that the UK could achieve 20,000MW capacity in 2020, which would constitute half of the total European market for offshore wind according to the predictions of the European Wind Energy Association.²³ This amount of UK capacity will require an investment of about £50 billion. A strong home market would mean UK companies are 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 important opportunity they intend to pursue²⁴

26. We agree that stimulus for wind energy is vital if the UK is to develop a strong renewable energy capacity but the Government must also recognise that other parts of the low-carbon economy must receive a proportionate level of help. The first report of the Committee on Climate Change, *Building a low carbon economy*, identifies a range of other sectors that need to be grown. Their report sets out a number of priorities including:

- Decarbonising the electricity supply sector—renewable energy (wind generation; solar power; tidal range technologies; biomass power); nuclear power; and carbon capture and storage technology.
- Improving energy efficiency measures at home and at work, both through changes in behaviour and investment in new technologies.
- Reducing 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.

27. We support the Government's strategy of selecting areas of the economy for intervention but more support must be provided. The Committee on Climate Change has set out which areas of the economy need to be developed if the UK is to achieve its carbon budgets though many of these sectors are not receiving an adequate share of the Government's stimulus. **The Government must remove barriers and provide both financial and non-financial incentives for the faster development of all the low-carbon sectors of the economy highlighted by the Committee on Climate Change.**

Wider financial incentives

28. The Government's activism aims to correct market failures in targeted sectors. Most of the measures proposed in the Low Carbon Transition Plan do this by providing a positive

22 Lord Mandelson in a speech to The Royal Society for the Encouragement of Arts, Manufactures and Commerce, London, 17 December 2008, www.berr.gov.uk/aboutus/ministerialteam/Speeches/page49416.html

23 "Wind energy gives Europe a competitive advantage, says EU Energy Commissioner", European Wind Energy Association press release, 16 March 2009

24 Ev 69

financial incentive; either through direct funding or maintaining market prices (for example in the upgrading of Renewable Obligation banding for offshore wind for projects). Both the TUC and SDC argued that a higher and sustained carbon price would be the best incentive for industry-wide action. The EU Emissions Trading Scheme, through which carbon is traded and its price is determined, has so far been unable to provide this.

29. Some US analysis have also suggested that a combination of fiscal stimulus and high carbon prices are required. James K. Boyce, University of Massachusetts Amherst and director of the energy and environment program at the Political Economy Research Institute, has said:

Government stimulus alone isn't enough, especially over the long-term [...] They're going to need to energize investors and capital markets and that means sending strong, clear and consistent price signals to industry and market participants."²⁵

30. Carbon taxes fix the price of carbon making it more predictable and less volatile than carbon prices generated through a cap and trade schemes. Dieter Helm, Professor of Energy Policy at the University of Oxford, has argued that some of the certainty from carbon taxes could combine with a cap and trade scheme.²⁶

31. Increased investment in renewables and low-carbon industries depends on a stable carbon price at a sufficiently high level. The Government should take steps to ensure that a strong carbon price signal will encourage the investment needed to drive the low-carbon transition. We will deal with the issue of a strong and stable carbon price in more detail in our report on carbon markets.

25 Michael Livermore, *Unlocking the Green Economy How Carbon Pricing Can Open the Floodgates of Private Investment in Clean Energy*, December 2008, press conference, <http://policyintegrity.org/news/12.16.08CarbonPricingPressCallRecording.mp3>

26 Dieter Helm, *Caps and floors for the EU ETS: a practical carbon price*, October 2008

3 Where are the green jobs?

32. New employment opportunities will be created as the UK becomes a low-carbon economy, particularly in the sectors highlighted in the Low Carbon Industrial Strategy. Currently the workforce does not have the capacity to deliver the energy saving measures or changes to renewable energy supply or transport that will be needed.²⁷ The Government's understanding of where these jobs are needed is limited.

33. The UK environmental goods and services (EGS) sector is growing. In 2004 the sector had a turnover of around £25 billion, and accounted for around 400,000 jobs in some 17,000 companies. Government projections suggest that the UK EGS market will grow to £34 billion in 2010 and £46 billion by 2015 with employment growing by at least 100,000 over the same period.²⁸

34. Where this growth will occur is unclear. Targets have been established for generating renewable energy. These provide a basis for forecasting employment and growth in this sector. The TUC believes that in order to meet our 2020 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. In the period to 2020, onshore and offshore wind farms together are likely to generate over 80% of the 38.5GW of installed renewable electricity capacity. The TUC say up to 36,000 direct new UK jobs could be created in the wind energy sector. The Government's forecasts are more optimistic. They state that renewable energy could provide £100 billion worth of investment opportunities and up to half a million jobs in the renewable energy sector by 2020. A report published in March 2009, estimated that the wind power manufacturing sector was worth £11.5 billion in 2007/08 and employed almost 87,500 people. Dr Gordon Edge, director of economics and markets at the British Wind Energy Association, believed the value of the wind industry to be roughly a tenth of this estimate, employing just 5,000.

We are somewhat surprised at the level of activity ascribed to our sector in the UK[...] We are struggling to work out how they could come up with such a large figure.²⁹

35. The Minister for Further Education, Skills and Apprenticeships said that having a more industrial activist approach to low-carbon industry relies on having good intelligence and evidence of what is on the horizon.³⁰ The sectors that are expected to grow, and where jobs will be created, must be clearly signalled in order to plan for the low-carbon transition. Skills delivery bodies need this information to plan their strategies and investors want confident predictions about growth. The disparity between government estimates and those from other bodies creates uncertainty about the potential of new low-carbon industries and some distrust of the Government's policy. The Committee on Climate Change's report to Parliament and the Low Carbon Transition Plan provide a good

27 Ev 71, Q292, Q317

28 TUC, *A Fair and Just Transition—Research report for Greening the Workplace*, July 2005

29 *ENDS Report 411*, April 2009, pp 32–35

30 Q345

starting point for setting out clear expectations about where new jobs will be needed. **To inform its activist approach the Government should build on the work of the Committee on Climate Change and the Low Carbon Industrial Strategy to reassess the number of new jobs that will be created in the move to a low-carbon economy and provide more robust data on where these jobs will come from and why.**

Job Displacement

36. The transition to a low-carbon economy will inevitably affect existing jobs. The UK cannot base its future economic growth on activities that are carbon intensive. Jobs will have to move from carbon-dependent sectors to low-carbon sectors as economic growth shifts. Industries which will be most affected are the producers of carbon-dependent products or services, like car manufactures or non-renewable energy producers. Industries that produce products or services with high embedded emissions (e.g. steel making) will need to reduce the carbon footprint of their goods, while industries that produce carbon-dependent products (e.g. petrol car manufacturers) will need to diversify and change their products. In all sectors new jobs to help business adapt to a changing climate will be required. Job losses are not inevitable but the requirement for companies to be less carbon intensive is. Failure to do this will incur ever increasing costs as the carbon market and carbon reduction commitment take effect.

37. Certain parts of the UK are dependent on carbon-intensive industries. These communities could suffer a large net loss of jobs. The Government's strategy must take this into account as jobs might not be created in the same geographical location.

38. The German government recently published a report on the wider impacts of renewable energy policies on the German economy, which shows that the new jobs created in the renewables sector outweighed the jobs lost elsewhere in the economy.³¹ In the US, research in California has estimated that almost 1.5 million jobs were created across the economy between 1972 and 2007 as a result of household energy efficiency measures.³² In contrast, a study funded by the European Commission found that under some economic scenarios the net effect on jobs in the UK energy sector could be negative.

39. The TUC called for greater monitoring of this displacement of jobs.³³ Links can be drawn between different sectors or regions so that employment opportunities are made available to those areas that suffer greatest job losses. There are also links between the skills used in new and old industries that provide a route for redeployment of the workforce. The BWEA have noted similarities between the experience and skills required in the offshore oil and gas industry and the offshore wind industry.³⁴ This experience could be used to help develop new industries in areas where job losses could be expected.

31 Federal Ministry for the Environment, *Nature Conservation and Nuclear Safety, Renewable Energy: Employment Effects*, 2006

32 Roland-Holst, *Energy Efficiency, Innovation and Job Creation*, Centre for Energy, Resources and Economic Sustainability, University of California, 2008

33 Q100

34 Ev 69

40. It is not clear to us that Government has a coherent approach to how to deal with this economic displacement. It is important that they reflect on how employment in new and traditional sectors will be affected. Regional Development Agencies (RDAs) are in a position to provide some assessment of this regional and sectoral displacement. The Low Carbon Industrial Strategy makes reference to collaboration between RDAs and other partners but does not detail how this will happen. Strategic cooperation between RDAs is all the more important because by April 2010 the nine Regional Learning and Skills Councils will be dissolved and the work of developing regional skills strategies will be taken on by the RDAs. RDAs currently lead on a wide range of initiatives to secure environmental and social benefits together with economic development for regional communities. Typical examples of innovative approaches in low-carbon sectors include:

- Yorkshire Forward's carbon capture and storage partnership. The partners include a consortium of 25 energy and industrial companies, local agencies, the TUC and unions.
- The South West RDA's support for a Green Workplaces partnership in the region.
- Three Greater South East RDAs have established Low Carbon Economy as an established priority.

41. The Government has not yet carried out research in the UK to assess the likely impact of decarbonisation on existing industries and jobs. **The Government should undertake research in partnership with trades unions, employers and Regional Development Agencies to gain a broader understanding of the impact of any job displacement resulting from the move to a low-carbon economy and to develop strategies to mitigate these effects.**

Fair transition

42. Significant periods of economic restructuring in the past have often happened in a chaotic fashion. Many individuals and communities in the UK are still adapting to the shift away from industrial production over the last 30 years. Trades Unions have argued for a 'Just Transition' to a low-carbon economy that fairly distributes the costs and benefits of policies across the economy.³⁵

43. There is currently a very active debate on the prospects for green jobs in the United States of America. Here an emphasis is placed on ensuring green jobs contribute to the social and economic sustainability of low income groups and deprived communities. This is visible in the work of the Apollo Alliance ("a coalition of business, labour and environmental groups championing green employment"), the Blue-Green Alliance ("a coalition of unions and environmental groups, led by the United Steelworkers and Sierra Club"), and Green for All ("a national organization dedicated to building an inclusive green economy strong enough to lift people out of poverty"). Green for All was founded by Van Jones, author of *The Green Collar Economy*, and President Obama's "green jobs czar".

44. One of the aims of focussing green jobs on low income groups is to build support for environmental policies among ordinary working people. Van Jones has said:

35 TUC, *Touchstone Pamphlet 3, A Green and Fair Future: For a Just Transition to a Low Carbon Economy*, 2008

The green economy is not just a place where affluent people can spend money. It is fast becoming a place where ordinary people can earn money. In fact, the only part of the U.S. economy that is growing—the only part of the economy that can grow, long-term—is the green part. So the green wave’s new products, services, and technologies could mean something important to struggling communities: the possibility of new green-collar jobs, a chance to improve community health, and opportunities to build wealth in a sustainable way. [...] Working people will have a powerful incentive to support a green-growth agenda as long as green partisans embrace broad opportunity and shared prosperity as key values.³⁶

45. Kevin Brennan MP, Minister for Further Education, Skills, Apprenticeships, said the Government is putting together a Just Transition forum to address the provision of jobs during economic transition.³⁷ **The Government needs to do more to link its policies on tackling poverty and unemployment with the green agenda. The forthcoming DWP White Paper provides an opportunity for the Government to embed this thinking within its employment policy.**

Quick Wins

46. The Aldersgate Group, a coalition of businesses, environmental groups and individuals, call for a street-by-street home insulation programme for social housing that would “create thousands of jobs, develop low-carbon skills and re-invigorate the construction sector during the recession”.³⁸

47. The Committee on Climate Change stressed the importance of improving energy efficiency in homes and recommends that the Government begin a more comprehensive programme. They provided estimates of the benefits:

Energy efficiency in homes could be improved by 35% by 2020 with an ambitious program of improved insulation (e.g. covering 10 million lofts, 7 million cavity walls and 2 million solid walls), the installation of 12 million energy efficient condensing boilers, and major improvements in electrical appliance efficiency.³⁹

48. The Federation of Master Builders drew on research carried out by the Environmental Change Institute at the University of Oxford to show that building firms, product manufacturers and suppliers could stand to tap into a new market worth between £3.5 billion 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.

49. We have consistently called for greater investment in a national retrofitting programme to make homes and buildings more energy efficient. Such a programme could sustain employment in local communities throughout the country, and could develop the skills

36 Van Jones, *The Green Collar Economy*, New York: Harper Collins, 2008, pp 54-5

37 Q393

38 Ev 14

39 Committee on Climate Change, *Meeting carbon budgets: the need for a step change: Progress report to Parliament*, 12 October 2009.

and supply chains required in what will be a long-term growth sector.⁴⁰ The UK 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. At the same time this is an opportunity for the construction sector to tap into this market and bring about up-skilling and new job opportunities. This is particularly important for small businesses during an economic downturn. The Kirklees Council's Warm Zone, an energy saving refurbishment 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.⁴¹

50. The Government's Heat and Energy Saving Strategy focuses on retrofitting existing housing stock, but while it is a step in the right direction we fear it is unlikely to achieve the full potential of combining carbon emissions reductions with employment growth. There are 26 million homes in the UK and 85% of those will still be in use in 2050 (when the Government has set the target to cut emissions by 80%). The FMB estimated that to achieve these targets 24,000 homes would need to be converted per week until 2030. At the present there is not sufficient capacity in the workforce to do this.⁴²

51. We recommend that the Government immediately and substantially increases the scale and speed of its programmes to improve the energy efficiency of existing buildings, and make this the UK's number one priority for green fiscal stimulus. The Government must ensure that a workforce is developed to enable the work on energy saving to be carried out and that it is equipped with all the necessary skills.

40 Environmental Audit Committee, Third Report of Session 2008-09, *Pre-Budget Report 2008: Green fiscal policy in a recession*, HC 202, para 21

41 Ev 38

42 Q316

4 Skills for the Transition

52. The Commission on Environmental Markets and Economic Performance (CEMEP) was 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. The final report from the Commission was published on 19 November 2007. In it CEMEP noted that one in three firms in the environmental sector was being hampered by a shortage of skilled staff, from those needed to install new technology to scientists and engineers.

53. In response to the CEMEP report on 1 May 2008 the Government published *Building a low carbon economy: unlocking innovation and skills*.⁴³ This set out how the Government plans to reduce the skills gap. The Sustainable Development Commission noted that at the Windsor Consultation on low-carbon skills (an event held with leading employers at Windsor Castle on 18–19 May 2009) there was little sense of government progress or action on the CEMEP recommendations and there was no sign of clear accountability or ownership. They note that business participants at the event felt frustrated.⁴⁴

54. The Aldersgate Group expressed concerns about skills restricting low-carbon growth. CEMEP Commissioner Frances O’Grady, Deputy General Secretary at TUC, (when interviewed by the Aldersgate Group) 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.⁴⁵

55. Since then Government has published the Low Carbon Industrial Strategy in which it committed itself to work proactively with industry to ensure that skills gaps are filled before they become a barrier to job creation or business growth. We recognise that some progress is now being made. Low Carbon Economic Areas (LCEAs) have been established as part of the Government’s Low Carbon Industrial Strategy. Skills Demonstration Projects are being developed in these to support the demonstration and commercialisation of new technologies.

56. On 11 November the Government published *Skills for Growth*, a national strategy for skills delivery.⁴⁶ This aims to give businesses more power to shape skills training through programmes like Train to Gain. In addition it will actively target those sectors and markets on which future growth and jobs depend. Sectors chosen for this increased support include advanced manufacturing, engineering construction and low-carbon energy. In April 2010 the Skills Funding Agency will be set up to assess demand and divert skills funding into these sectors. The Strategy states £100 million of funding will be provided to fund 160,000

43 Defra, *Building a Low Carbon Economy: unlocking innovation and skills*, May 2008

44 Ev 27

45 Ev 13

46 DBIS, *Skills for Growth*, November 2009

training places in priority sectors. For the Government's new strategy to be effective it must deal with four problems with the current skills system:

- encouraging employer participation by simplifying the skills framework;
- establishing a leader to take the green skills agenda forward;
- targeting the skills shortages in sectors needed to drive the transition to a low-carbon economy; and
- forecasting those skills that will be required in new and emerging sectors.

A Simpler Skills System

57. Skills provision for the UK economy is currently 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 SSCs are directed by employers' needs and changes in the national skills curriculum are triggered when employers perceive a need—it is a demand-led system. National Occupational Standards are written by SSCs and define the individual qualifications (S/NVQs) awarded by bodies such as City & Guilds and Edexcel. These S/NVQ courses are taught at further education colleges and, for apprentices, through work based training.

58. The provision of green skills under this is difficult for a number of reasons. From outside, the training landscape and funding structure is too complex for effective engagement with all the stakeholders. Sector Skills Councils tell us that employers are confused in terms of funding available, how to obtain the funding and routes to training.⁴⁷ There is a need to remove bureaucracy and simplify funding mechanisms so that employers better understand the options available. This situation is more difficult, 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.⁴⁸

59. In the Skills for Growth strategy the Government recognised that complexities in the skills delivery framework deterred employer's engagement. It set out a wide range of measures to simplify the system including a pledge to remove over 30 publicly funded skills bodies over the next three years, plans to reduce the number of Sector Skills Councils and the abolishment of Regional Skills Partnerships and a transfer of their powers to RDAs.

60. We welcome the Government's attempts to simplify the skills delivery system, although this must be done in a way that does not lose the focus on existing environmental skills. This simplification will only be meaningful if it encourages business engagement. EU Skills argued that it was essential that skills delivery continues to be led through discourse with industry. For this to happen employers must be provided with a clear understanding of

47 Ev 83 and Ev 170

48 Ev 83

what is required of them during the low-carbon transition. **The Government must put employer participation at the heart of its changes to the skills system.**

A Green Skills Leader

61. We were told of examples of conflicting targets within the skills system and misalignment with external policies. Energy and Utility Skills (the Sector Skills Council for energy, waste and water industries) raised the example of smart metering: the Government has announced it intends to mandate smart meters for all households, with a timetable for completion by the end of 2020, and this will involve changing 23,000 meters per week for the next eight years. The workforce does not presently have the skills to do this, but delivering training to provide these skills does not fit with the current targets or the qualifications that the LSC and RDAs are directed to achieve.⁴⁹

62. There is little evidence of ownership of the low-carbon skills agenda within the skills system. CEMEP envisaged a leadership role for the UK Commission on Employment and Skills (UKCES), the body set up to see that employment and skills systems contribute to the highest levels of productivity. 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.⁵⁰

63. The SDC noted that at the Windsor Consultation the feeling was UKCES would be the appropriate body to lead this agenda leadership role, 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.

64. Across the skills framework there are good examples of co-ordination. A number of Sector Skills Councils have convened to form the Renewable Energy Skills Group, which comprises AssetSkills, Cogent, ConstructionSkills, ECITB, Energy and Utility Skills, Lantra, SEMTA and SummitSkills. The group has been set up to provide a forum for co-ordinating a Renewable Energy Skills Strategy. Their proposed Renewable Energy Skills Strategy aims to take account of the requirements across the supply chain from initial research, to installation and maintenance and disposal at the end of life. Such an approach needs to be broadened to include all industries.⁵¹

65. The delivery of green skills needs to be reviewed across the skills system so that processes and skills bodies are able to deliver green skills as a priority. Leadership is required to take an overview of green skills delivery and remove existing barriers. This is particularly important to respond to a part of the economy that is very fast moving and requires a flexible here and now response. **The Government must establish a leader for the green skills agenda to deliver the skills needed for the low-carbon transition, to coordinate on removing barriers in the current system and to maintain a focus on the current environmental skills.**

49 Q284

50 Ev 13

51 Ev 84-85

A Targeted Approach

66. The demand-led skills framework has failed for two reasons; the employer's inability to articulate their skills needs to the skills delivery bodies and the inability of skills bodies to accurately forecast where demand for new skills will emerge. A targeted skills approach will need to solve both these problems. Research commissioned by Defra has found 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".⁵²

67. The TUC argues for the urgent development of an active skills strategy.⁵³ They believe the current level of skills training capacity is inadequate to meet the needs of a low-carbon, resource-efficient economy. Furthermore they say that relying on the market to identify skills gaps is causing delays in moving towards a green economy. The SDC told us that there is a lack of appropriate demand for some of the skills that are required for the low-carbon transition:

[...]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.⁵⁴

68. A more strategic approach to skills supply is needed, which specifically targets the delivery of skills in those sectors highlighted by the Committee on Climate Change and the Low Carbon Industrial Strategy as being important in the low-carbon transition. **In its role to assess demand and prioritise sectors for extra funding, the new Skills Funding Agency must take account of the need to develop skills in sectors recognised as vital in the low-carbon transition.**

Skills Forecasting

69. In the Low Carbon Industrial Strategy the Government announced that it will do more to forecast and identify skills needed in low-carbon industries. It would do this by developing a capacity to collect skills intelligence in key sectors with employers, Sector Skills councils and the UK Commission for Employment and Skills (UKCES). This is now being taken forward in the new Skills Strategy, as part of which UKCES will produce an annual National Strategic Skills Audit. The first of these is to be published in 2010 and will involve the Sector Skills Councils and Regional Development Agencies. The Skills Strategy makes clear that skills to adapt to climate change are of strategic importance.

70. ConstructionSkills has already set up a specialist Future Skills Unit to make sure the industry has the training and qualifications it needs. Skills audits should build on the best practice and lessons learned from current forecasting programmes.⁵⁵

52 HM Government *New Industry, New Jobs: Building Britain's future*, April 2009, p15

53 Ev 34

54 Ev 25

55 Ev 157

71. The skills needed for the transition to a low-carbon economy must be part of the first skills audit. It should take as its starting point recommendations of the Committee on Climate Change report to Parliament and identify what skills are required to meet their recommendations and to what extent the workforce already has these skills. The results of this audit should form the basis of the strategic investment for targeted skills delivery under the Skills Funding Agency.

72. The skills audit should also consider the long-term affects of job displacement and determine those sectors where reskilling will be required to ease industrial change or to ensure continuous employment for those workers in sectors at risk. A skills audit would also provide the basis for a strategy for the new green skills leader and could be used by RDAs to develop a collaborative approach to skills sharing. **Government must use the first National Skills Audit to provide a comprehensive assessment of current and future gaps in low-carbon skills. The results of this could provide the basis for any future development of the green skills strategy.**

A Low-Carbon Skill Set

73. Along with targeting specific skills gaps the IEMA believes that mainstreaming environmental knowledge and skills across all sectors will be essential to achieving a low-carbon economy. 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.⁵⁶ A key finding of the research was the lack of a clear structure and framework for environmental and sustainability skills. The EIC call for a similar mainstreaming of green skills and that all existing Sectors Skills Councils should develop programmes relevant for green jobs.⁵⁷

74. Reducing emissions or adapting to climate change are not seen as a strategic priority for many organisations, and many small businesses and public sector organisations do not yet understand how they need to change. Until technologies are familiar and proven, people and businesses are often reluctant to use them, or are unaware how well developed, robust and cost-effective ‘new’ technologies have become. As the price of carbon rises businesses will have to become more environmentally aware. They need to develop the skills to deal with these changes now.

75. We recognise that the Government is working to encourage business to become more resource and energy efficient. The Carbon Reduction Commitment 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.⁵⁸ The Government also 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. Despite this further effort is required to mainstream green skills across industry and develop the confidence at board level and below to manage

56 Ev 51

57 Q221

58 Ev 123

carbon reduction in business. **By establishing a leader for the green skills agenda the Government could provide an opportunity to deliver green skills across all sectors. This will be important as green skills must eventually be mainstreamed throughout the whole economy.**

5 Conclusion

76. Developing low-carbon industries is vital if the UK is to meet its carbon budgets. The Committee on Climate Change has set out sectors of the economy where effective carbon reductions should be made and provides deadlines for these changes to occur. The Government must stimulate all these areas of the economy by removing barriers to growth and by providing financial and non-financial incentives to investment through policy that is clear and long-term. To develop the workforce to do this the Government's new skills framework must be used to gather skills intelligence and provide targeted assistance to these sectors now.

77. Low-carbon industries provide significant employment opportunities and present sustainable business options in global markets and growing sectors. The Government must act now to give the UK an advantage against its competitors in these areas.

Conclusions and recommendations

Current Policy

1. The Government should urgently increase the amount of money that contributes to the overall green stimulus by ‘greening’ more of its current spending plans and ensuring access to European Investment Bank capital; by doing so it will help create home markets and develop first mover advantage. (Paragraph 17)
2. The Government must provide industry with a clear and stable long-term policy framework to guide them through the low-carbon transition with enough detail to enable them to secure investment. Business needs to be confident that financial incentives and regulation designed to promote low-carbon industries will be maintained. In addition a bipartisan political approach should be sought wherever possible. (Paragraph 22)
3. The Government must remove barriers and provide both financial and non-financial incentives for the faster development of all the low-carbon sectors of the economy highlighted by the Committee on Climate Change. (Paragraph 27)
4. Increased investment in renewables and low-carbon industries depends on a stable carbon price at a sufficiently high level. The Government should take steps to ensure that a strong carbon price signal will encourage the investment needed to drive the low-carbon transition. (Paragraph 31)

Where are the green jobs?

5. To inform its activist approach the Government should build on the work of the Committee on Climate Change and the Low Carbon Industrial Strategy to reassess the number of new jobs that will be created in the move to a low-carbon economy and provide more robust data on where these jobs will come from and why. (Paragraph 35)
6. The Government should undertake research in partnership with trades unions, employers and Regional Development Agencies to gain a broader understanding of the impact of any job displacement resulting from the move to a low-carbon economy and to develop strategies to mitigate these effects. (Paragraph 41)
7. The Government needs to do more to link its policies on tackling poverty and unemployment with the green agenda. The forthcoming DWP White Paper provides an opportunity for the Government to embed this thinking within its employment policy. (Paragraph 45)
8. We recommend that the Government immediately and substantially increases the scale and speed of its programmes to improve the energy efficiency of existing buildings, and make this the UK's number one priority for green fiscal stimulus. The Government must ensure that a workforce is developed to enable the work on energy saving to be carried out and that it is equipped with all the necessary skills. (Paragraph 51)

Skills for the Transition

9. The Government must put employer participation at the heart of its changes to the skills system. (Paragraph 60)
10. The Government must establish a leader for the green skills agenda to deliver the skills needed for the low-carbon transition, to coordinate on removing barriers in the current system and to maintain a focus on the current environmental skills. (Paragraph 65)
11. In its role to assess demand and prioritise sectors for extra funding, the new Skills Funding Agency must take account of the need to develop skills in sectors recognised as vital in the low-carbon transition. (Paragraph 68)
12. Government must use the first National Skills Audit to provide a comprehensive assessment of current and future gaps in low-carbon skills. The results of this could provide the basis for any future development of the green skills strategy. (Paragraph 72)
13. By establishing a leader for the green skills agenda the Government could provide an opportunity to deliver green skills across all sectors. This will be important as green skills must eventually be mainstreamed throughout the whole economy. (Paragraph 75)

Formal Minutes

Tuesday 8 December 2009

Members present:

Mr Tim Yeo, in the Chair

Colin Challen
Martin Horwood

Mark Lazarowicz

The Committee considered this matter.

Mark Lazarowicz declared an interest as an unpaid board member of Edinburgh Community Energy Cooperative.

Draft Report (*Green Jobs and Skills*), proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 77 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Second Report of the Committee to the House.

Ordered, That the Chairman make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

Written evidence was ordered to be reported to the House for printing with the Report, together with written evidence previously reported and ordered to be published.

Written evidence was ordered to be reported to the House for placing in the Library and Parliamentary Archives.

[Adjourned till Tuesday 5 January at 4.30 pm]

Witnesses (Volume II)

Tuesday 16 June 2009

Page

Mr Simon Retallack, Associate Director and Head of Climate Change, **Ms Jennifer Bird**, Climate Change Research Fellow, and **Ms Kayte Lawton**, Social Policy Researcher, Institute for Public Policy Research (ippr) Ev 6

Mr Peter Young, Chairman, and **Mr John Edmonds**, Member, Aldersgate Group Ev 18

Tuesday 30 June 2009

Ms Tess Gill, Commissioner for Work and Skills, and **Mr Charles Seaford**, Senior Engagement Analyst, Sustainable Development Commission Ev 28

Ms Sue Ferns, Member of the TUC General Council, and **Mr Philip Pearson**, Senior Policy Officer, Trades Union Congress (TUC) Ev 41

Mr Martin Baxter, Acting Chief Executive of IEMA Ev 53

Tuesday 7 July 2009

Mr Adrian Wilkes, Chief Executive, and **Mr Danny Stevens**, Policy Director, Environmental Industries Commission (EIC) Ev 60

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 Ev 73

Tuesday 20 October 2009

Mr Tim Balcon, Chief Executive, Energy & Utility Skills Ev 85

Mr Brian Berry, FRSA, Director of External Affairs, and **Mr Richard Diment**, Director-General, Federation of Master Builders Ev 94

Tuesday 3 November 2009

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 Ev 108

List of written evidence (Volume II)

| | | |
|----|---|--------|
| 1 | Acre Resources Ltd | Ev 213 |
| 2 | Aldersgate Group | Ev 12 |
| 3 | Association for Public Service Excellence (APSE) | Ev 204 |
| 4 | Association for the Conservation of Energy (ACE) | Ev 177 |
| 5 | Association of Chartered Certified Accountants (ACCA) | Ev 183 |
| 6 | Association of Colleges (AoC) | Ev 179 |
| 7 | British Waterways | Ev 134 |
| 8 | Carbon Capture and Storage Association (CCSA) | Ev 165 |
| 9 | Ceres Power Ltd | Ev 197 |
| 10 | Commission for Architecture and the Built Environment (CABE) | Ev 188 |
| 11 | ConstructionSkills | Ev 154 |
| 12 | Department for Business, Enterprise and Regulatory Reform (BERR), Department of Energy and Climate Change (DECC), Department for Innovation, Universities and Skills (DIUS), and Department of Environment, Food and Rural Affairs (Defra) | Ev 100 |
| 13 | Department for Business, Innovation and Skills (DBIS), Department of Energy and Climate Change (DECC) and Department of Environment, Food and Rural Affairs (Defra) | Ev 106 |
| 14 | Department for Business, Innovation and Skills (DBIS) and Department of Energy and Climate Change (DECC) | Ev 122 |
| 15 | Department of Environment, Food and Rural Affairs (Defra) | Ev 125 |
| 16 | Eaga | Ev 152 |
| 17 | EEF | Ev 181 |
| 18 | Energy & Utility Skills | Ev 82 |
| 19 | 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)) | Ev 191 |
| 20 | E.ON UK | Ev 146 |
| 21 | Environmental Industries Commission (EIC) | Ev 57 |
| 22 | Federation of Master Builders | Ev 92 |
| 23 | Greater London Authority and the London Development Agency | Ev 205 |
| 24 | Greenpeace | Ev 151 |
| 25 | Groundwork UK | Ev 131 |
| 26 | Institute for Public Policy Research (ippr) | Ev 1 |
| 27 | Institute of Ecology and Environmental Management (IEEM) and the British Ecological Society (BES) | Ev 138 |
| 28 | Kingspan Insulated Panels | Ev 159 |
| 29 | National Grid | Ev 211 |
| 30 | North East Chamber of Commerce (NECC) | Ev 150 |

| | | |
|----|---|----------------|
| 31 | Renewable Energy Association (REA) | Ev 161 |
| 32 | Rockwool Ltd | Ev 128 |
| 33 | SummitSkills | Ev 167: Ev 174 |
| 34 | Sustainable Development Commission | Ev 25 |
| 35 | The British Association for Shooting and Conservation (BASC) | Ev 127 |
| 36 | The British Wind Energy Association (BWEA) | Ev 69 |
| 37 | The Institute of Environmental Management and Assessment (IEMA) | Ev 50 |
| 38 | TUC | Ev 33 |
| 39 | Unite | Ev 200 |

List of unprinted evidence (Volume II)

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

List of Reports from the Committee during the current Parliament

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2009–10

| | | |
|--------------|--------------------------------------|-------|
| First Report | The work of the Committee in 2008–09 | HC 58 |
|--------------|--------------------------------------|-------|

Session 2008–09

| | | |
|---------------|---|------------------|
| First Report | Work of the Committee in 2007–08 | HC 108 |
| Second Report | Environmental Labelling | HC 243 (HC 861) |
| Third Report | Pre-Budget Report 2008: Green fiscal policy in a recession | HC 102 (HC 563) |
| Fourth Report | Reducing CO ₂ and other emissions from shipping | HC 528 (HC 1015) |
| Fifth Report | Reducing greenhouse gas emissions from deforestation: No hope without forests | HC 30 (HC 1063) |
| Sixth Report | Greening Government | HC 503 (HC 1014) |

Session 2007–08

| | | |
|-------------------|--|-------------------------|
| First Report | Are biofuels sustainable? | HC 76-I & -II (HC 528) |
| Second Report | Reducing Carbon Emissions from UK Business: The Role of the Climate Change Levy and Agreements | HC 354 (HC 590) |
| Third Report | The 2007 Pre-Budget Report and Comprehensive Spending Review: An environmental analysis | HC 149-I & -II (HC 591) |
| Fourth Report | Are Biofuels Sustainable? The Government Response | HC 528 (HC 644) |
| Fifth Report | Personal Carbon Trading | HC 565 (HC 1125) |
| Sixth Report | Reaching an international agreement on climate change | HC 355 (HC 1055) |
| Seventh Report | Making Government operations more sustainable: A progress report | HC 529 (HC 1126) |
| Eighth Report | Climate change and local, regional and devolved government | HC 225 (HC 1189) |
| Ninth Report | Carbon capture and storage | HC 654 (Cm 7605) |
| Tenth Report | Vehicle Excise Duty as an environmental tax | HC 907 (HC 72) |
| Eleventh Report | The Exports Credit Guarantee Department and Sustainable Development | HC 929 (HC 283) |
| Twelfth Report | Greener homes for the future? An environmental analysis of the Government's house-building plans | HC 566 (Cm 7615) |
| Thirteenth Report | Halting biodiversity loss | HC 743 (HC 239) |

Session 2006–07

| | | |
|----------------|--|---------------------|
| First Report | The UN Millennium Ecosystem Assessment | HC 77 (HC 848) |
| Second Report | The EU Emissions Trading Scheme: Lessons for the Future | HC 70 (HC 1072) |
| Third Report | Regulatory Impact Assessments and Policy Appraisal | HC 353 (HC 849) |
| Fourth Report | Pre-Budget 2006 and the Stern Review | HC 227 (HC 739) |
| Fifth Report | Trade, Development and Environment: The Role of FCO | HC 289 (HC 1046) |
| Sixth Report | The Voluntary Carbon Offset Market | HC 331 (HC 418) |
| Seventh Report | Beyond Stern: From the Climate Change Programme Review to the Draft Climate Change Bill | HC 460 (HC 1110) |
| Eighth Report | Emissions Trading: Government Response to the Committee's Second Report of Session 2006–07 on the EU ETS | HC 1072 |
| Ninth Report | The Structure of Government and the challenge of climate change | HC 740 (HC 276) |

Session 2005–06

| | | |
|-----------------|---|----------------------|
| First Report | Greening Government: the 2004 Sustainable Development in Government Report | HC 698 |
| Second Report | Sustainable Timber | HC 607 (HC 1078) |
| Third Report | Sustainable Procurement: the Way Forward | HC 740 |
| Fourth Report | Pre-Budget 2005: Tax, economic analysis, and climate change | HC 882 (HC 195) |
| Fifth Report | Sustainable Housing: A follow-up report | HC 779 |
| Sixth Report | Keeping the lights on: Nuclear, Renewables, and Climate Change | HC 584 (HC 196) |
| Seventh Report | Sustainable Development Reporting by Government Departments | HC 1322 (HC 1681) |
| Eighth Report | Proposals for a draft Marine Bill | HC 1323 (HC 1682) |
| Ninth Report | Reducing Carbon Emissions from Transport | HC 981 |
| Tenth Report | Trade, Development and Environment: The Role of DFID | HC 1014 (HC 197) |
| Eleventh Report | Outflanked: The World Trade Organisation, International Trade and Sustainable Development | HC 1455 (HC 354) |
| Twelfth Report | Transport Emissions: Government Response to the Committee's Ninth Report of Session 2005–06 on Reducing Carbon Emissions from Transport | HC 1718 |