



House of Commons
Innovation, Universities,
Science and Skills Committee

**Renewable electricity–
generation technologies:
Government Response to
the Committee's Fifth
Report of Session 2007–08**

Eighth Special Report of Session 2007–08

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The Innovation, Universities, Science & Skills Committee

The Innovation, Universities, Science & Skills Committee is appointed by the House of Commons to examine the expenditure, administration and policy of the Department for Innovation, Universities and Skills.

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Eighth Special Report

On 19 June 2008 the Innovation, Universities, Science and Skills Committee published its Fifth Report of Session 2007–08, *Renewable electricity-generation technologies* [HC 216–I]. On 15 September 2008 the Committee received a memorandum from the Government which contained a response to the Report. The memorandum is published as an appendix to this Report.

Appendix: Government response

Introduction

The purpose of this memorandum is to provide a response to the Innovation, Universities, Science and Skills (IUSS) Committee report on “Renewable electricity-generation technologies” published on 19 June 2008.

The Government welcomes publication of the Committee’s report and has noted the detailed conclusions and recommendations. The report makes a number of pertinent and constructive comments. The Government is already acting in many of the areas covered by the Committee’s recommendations and conclusions, in particular through our consultation on the Renewable Energy Strategy, seeking views on a wide range of potential measures that will enable the UK to meet its share of the EU 2020 target, and the changes through the Energy and Planning Bills.

Responses to conclusions and recommendations

The Government’s response to each of the Committee’s conclusions and recommendations is set out below. The responses are numbered as they appear in the report.

Targets

1. We are disappointed that the Government is seeking to lower the target of 15 per cent renewable energies by 2020, as proposed in the EU Draft Directive on the promotion of energy from renewable sources. (Paragraph 21)

The Government is not seeking to lower the proposed target of 15% renewable energy by 2020 as set out in the draft Directive; nor has it sought to do so. We are fully committed to meeting our share of the EU target, when it has been agreed. We believe the Commission’s proposal—including the 15% target for UK—is a good starting point for discussions. But in common with most other EU Member States, we don’t think it is appropriate to commit to a given figure until we have agreed the details of how the targets are to be met. Negotiations on the details of the directive are progressing well.

National targets for renewable electricity generation

2. We do not consider current UK targets for renewable electricity generation to be of sufficient scale or ambition. The Government's commitment to triple renewable electricity production by 2015 will equate to the production of approximately 15 per cent of total electricity supply. If the UK is to meet the proposed EC Mandated Target of 15 per cent renewable energy by 2020, it would then become necessary to more than double renewable electricity-generation capacity between 2015 and 2020. (Paragraph 29)

The UK has a target of 10% of electricity to come from renewable sources by 2010, and an aspiration to double this by 2020. We agree that a 15% renewable energy target is likely to require a significantly higher level of renewable electricity. Our Renewable Energy Strategy consultation document¹ published in June 2008 included a scenario of 32% renewable electricity by 2020, and seeks views on potential measures for delivering the overall 15% renewable energy target.

3. We find it highly unlikely that, given current progress, the UK will meet the Government's ambition for 10 per cent of electricity to be generated from renewables by 2010, let alone the EC Mandated Target for 15 per cent renewable energies by 2020. (Paragraph 30)

The Renewable Energy Strategy consultation acknowledges that the proposed target of 15% of our energy to come from renewables by 2020 is very challenging. However, we believe it is achievable.

In order to meet our 10% target, we estimate that we will need to generate just over 40 TWh of renewable electricity by 2010. Current estimates show that we have over 45 TWh of renewable generation that is operational, under construction or which is approved and awaiting construction. While we cannot yet predict what proportion of these projects will be fully operational by 2010, these estimates indicate that there is more than enough renewables capacity in the pipeline potentially to meet the target. The UK currently generates 5% of its electricity from renewable sources, more than double our capacity in 2002, when the Renewables Obligation was introduced.

The rate of deployment is improving—the first gigawatt of wind in the UK took 14 years to deliver, while the second took just 20 months. There are of course no guarantees of success, but in our consultation we are seeking views on potential measures, in addition to existing mechanisms and the package of measures set out in the Energy and Planning Bills, to address the constraints of grid access, planning approval, and financial incentives. The priority placed by the Government on tackling these issues is reflected by its announcement on the 8 September of its intention to set up an Office for Renewable Energy Deployment (ORED) which will be established as the Renewable Energy Strategy (RES) is finalised in Spring 2009. The UK will require a 10-fold increase in renewable energy by 2020 and ORED will help deliver this step change in the deployment of renewable energy in the UK, overcoming barriers 'on the ground' and maximising the jobs potential of this transformation in our energy supply.

¹ Available at www.berr.gov.uk/consultations/page_46797.html

We believe it will therefore be possible to achieve 15% renewable generation by 2015 and with the measures to be proposed in the Renewable Energy Strategy reach our EU share by 2020.

Rationalising the targets

4. We recommend that, as soon as the UK's EU Mandated Target is known, the Government outline the UK's renewable energy targets in a single statement. This statement should set the context for the Government's new Renewable Energy Strategy, stipulating the country's 2020 target for renewable energy generation, and signposting the contribution required from the electricity, heating and cooling and transport sectors required to meet the headline target. In addition to setting targets for each renewable energy sector, it is vital that the Government's Renewable Energy Strategy provides a clear policy framework for achieving them. (Paragraph 33)

We have committed to producing our renewable energy strategy in Spring 2009, once the EU Directive has been agreed. This will set out how we propose to meet our targets. While it will be for the market to determine the precise contribution of different sectors and technologies within the overall framework that we put in place, we would expect to set out in the strategy, scenarios for what each sector could contribute and a clear policy framework for achieving our targets, as we have done in our renewable energy strategy consultation document.

The technologies

5. We believe that it will be essential to deploy a portfolio of technologies to meet our renewable electricity targets. (Paragraph 37)

We agree.

Offshore wind

6. Given the relative maturity of the wind sector, and the continuing construction of new wind capacity, we believe that wind energy will make the greatest contribution to meeting our 2020 renewable energy targets. In order for the full potential of wind power to be realised, it is essential that the Government takes urgent steps to address operational barriers to its deployment. (Paragraph 46)

The Government recognises the potential of wind, both for meeting our renewable energy commitments and for creating economic opportunity in the UK, given the UK's natural resources. Onshore and offshore wind will need to play a significant role in delivering our targets to 2020. The UK is one of only eight countries in the world to pass 2GW of installed capacity of onshore wind, and we are already a world leader in offshore wind, overtaking Denmark this autumn as the global leader in installed offshore wind capacity. In the next 12 months, the UK will double its offshore wind fleet, from 404MW today to almost 1,000MW by the end of 2009.

We are aware of a number of barriers to the deployment of wind energy in the UK, including financial incentives, capacity in the supply chain, planning process and access to the electricity grid, and we are taking steps to address these.

To enable the offshore sector to grow, the Government announced in December 2007 a Strategic Environmental Assessment examining the feasibility of up to 25GW of new offshore wind capacity, in addition to the 8GW already planned. This will provide certainty and confidence in the scale of the UK offshore wind market in the long term, allowing investment to take place in next generation technology and the supply chain. The Secretary of State has asked the Renewables Advisory Board to develop a Government-Industry strategy on expanding the renewables supply chain. According to Ernst and Young, the UK is rated as the number one investment location for offshore wind in the world, attracting recent inward investment by wind turbine manufacturer Vestas in offshore wind R&D and manufacturing capacity in the UK.

Planning issues are also an obstacle to the deployment of both offshore and onshore wind. This is addressed under our answer to recommendation 33. We have to recognise that onshore and offshore wind farms can have a potential impact on a number of different interests: environmental, commercial and social, including civil and military aviation interests, which are assessed at project level during the planning process, with clear guidance set out in Planning Policy Statement 22 on renewable energy. The Renewable Energy Strategy consultation sets out what the Government has already done to address these issues, such as the introduction of the National Policy Statement on renewables through the Planning Bill, and a range of measures to tackle these impacts. For offshore wind, each of these is also being assessed under the SEA process at a strategic level, prior to development rights being granted to the market by The Crown Estate.

Getting connected to the grid is one of the barriers to the growth of renewable generation and we also know that as more renewable generation is connected that the electricity network will need to be operated differently. The recently published Transmission Access Review (TAR) report sets out a package of measures that we believe that taken together could remove or significantly reduce grid related barriers to renewable and other forms of generation. These include short term measures to connect more generators, enduring reform to grid access arrangements and acceleration of the way in which new grid infrastructure is planned and developed. The TAR measures are discussed further in our answers to recommendations 25, 26, 27 and 28.

At present there is very little electricity network infrastructure installed offshore, which is why BERR and Ofgem are leading a project to put a new regulatory regime in place to connect offshore wind projects to the GB onshore grid and ensure that there is an enduring framework in place beyond 2010 for offshore wind and other forms of offshore renewables. Consultation is under way on the implementation of the regime and we are seeking further powers for Ofgem in the Energy Bill to enable them to run the proposed tender process efficiently and effectively. We aim for the new regime to 'Go Active' in April 2009 and 'Go Live' a year later i.e. April 2010 according to current plans.

As an emerging technology, adequate financial incentives and support are a key issue for offshore wind. The Committee also mentioned the R&D challenges to offshore wind development. The Energy Technologies Institute, the Carbon Trust and the Government

are designing three complementary R, D and D programmes to address these challenges. We believe that the additional support proposed of 1.5 ROCs under the banded Renewables Obligation should provide adequate support for this technology.

Wave and tidal—common issues

7. We recommend that the Government review the barriers to the deployment of marine technologies as a priority, and that it engages with device developers in order to identify the most appropriate means of supporting technology development and deployment. (Paragraph 56)

The Renewable Energy Strategy consultation is seeking information on the barriers to deployment of marine and other emerging energy technologies and any changes to the Government's support measures for marine energy technologies will be made in the light of responses to the consultation. The Government is in regular contact with members of the marine energy sector, including device developers, and will consult the sector before any changes are made.

Emerging technologies

8. We urge the Government to ensure that, in acting to meet the UK's 2020 renewable energy targets, support for near-to-market technologies does not come at the expense of support for basic long-term research into emerging technologies. (Paragraph 72)

In the Spending Review for 2008–2011, support for near-to-market technologies has not come at the expense of support for basic long-term research into emerging technologies, and this is demonstrated by the expenditure by the Research Councils on energy related research which has more than trebled since 2003–4, and will approach £300m over next three years. The Renewable Energy Strategy consultation, which was published shortly after the Committee's report, recognises that the more innovative energy technologies, such as wave and tidal energy, are likely to have only a small impact on the 2020 renewable energy mix, but they remain an important element of our plans to meet our longer term climate change goals. The consultation points out that supporting these technologies, for example by direct support or regulatory intervention in the market, means investing in energy sources which may not be cost effective in the short term in order to accelerate learning and cost reduction to secure economic benefit and wider social return in the future.

The Committee highlighted three particular technologies in the bioenergy sector. With regards to anaerobic digestion, details of an anaerobic digestion component of the Environmental Transformation Fund (ETF) were announced by Defra Ministers on 16 July. The Government sees anaerobic digestion as a technology with significant potential to contribute to our climate change and wider environmental objectives. We wish to see a much greater uptake by local authorities, businesses and farmers. The ETF will fund a demonstration programme for cutting-edge anaerobic digestion on a commercial scale in England, and will fund between 3 and 6 projects aimed at developing the cost effective production of biogas, and maximising the environmental benefits from the use of anaerobic digestion technology and its products (including in the food supply chain, in water treatment infrastructure and the use of biomethane in the gas grid).

We agree that first generation and second generation biofuels (from lignocellulose) are distinct energy sources. There is also potential for ‘third generation’ biofuels from microalgae. The Government agrees that these new biofuel technologies offer potentially significant advantages over current biofuels in terms of environmental benefit. Advanced biofuels are supported by the Research Council Energy Programme, the Technology Strategy Board (this sector will be a priority under the TSB’s Strategy for Biosciences), and the Carbon Trust within the Environmental Transformation Fund. The Government-funded National Non-Food Crops Centre has published an assessment of the prospects for advanced biofuels² and is working with partners and companies on specific opportunities for stimulating investment in these technologies.

Nuclear power

9. We agree that nuclear energy is not a form of renewable energy, whatever its advantages in carbon-saving, as it relies on uranium as a fuel source. (Paragraph 75)

We accept this and do not maintain that nuclear is a form of renewable energy.

10. We believe it essential that the deployment of nuclear energy does not compromise the ability for the UK transmission system to accommodate all electricity generated by renewable technologies, and that the Government should guarantee there will be no nuclear blight on the renewables industry. (Paragraph 78)

The Government sees no reason why we cannot have both nuclear and renewables as part of our energy mix. Because of climate change and the closure of many existing plants, we need an electricity generation system which by 2050 produces virtually no carbon emissions. So we need all the low carbon options available in the mix. We have policies and measures that incentivise market investment in renewables. The economic modelling we did in preparation for the Nuclear White Paper is clear that investment in nuclear power would not discourage investment in renewables.

Microgeneration—a microgeneration strategy

11. We recommend that in revising its microgeneration strategy, the Government review the provision of financial support for demonstration projects, and introduce a national target for the production of electricity from microgeneration technologies. (Paragraph 85)

Through the Microgeneration Strategy, published in 2006, we have shown that we are fully committed to encouraging the deployment of microgeneration. We believe that microgeneration has a future role to play in the context of distributed energy and wider renewable energy and low carbon commitments. We will continue to work to ensure that distributed energy technologies, including microgeneration, can fulfil their potential in achieving the UK’s share of the EU 2020 Renewable Energy target.

It is anticipated that by 2010, the Government will have supported the microgeneration industry with around £140 million through its demonstration programmes such as Clear Skies and the Low Carbon Buildings Programme. The Renewable Energy Strategy

2 http://www.nnfcc.co.uk/metadot/index.pl?id=6597&isa=DBRow&field_name=file&op=download_file

consultation will consider the best way of increasing financial support to the small-scale generation of electricity and heat-including considering whether a move to a feed-in tariff system would have advantages.

Recent research has shown that a positive policy environment is the main driver for industry investment in these technologies, and not targets per se. Existing targets such as the zero carbon developments and the EU 2020 renewable target have potential to provide stimulus to the market for microgeneration. As we have set out in the Renewable Energy Strategy consultation, we are not minded to introduce a specific target for microgeneration technologies at this stage in their development, though we have specifically asked for views from consultation respondents on this point.

Research funding—The Energy Technologies Institute

12. We welcome the creation of the Energy Technologies Institute and view it as playing a key role in supporting pre-commercial technologies through the ‘valley of death’ and into the market place. (Paragraph 93)

The Energy Technologies Institute (ETI) is a groundbreaking private/public partnership and we value the efforts the ETI partners have made to make this unique venture operational. We welcome the progress that is being made; to date ETI has issued calls in three areas; off-shore wind, marine energy and distributed energy. It is also considering others, including transportation, CCS, networks and buildings efficiency (both domestic and commercial).

13. Further, we recommend that the ETI establish a test platform for offshore wind technologies. (Paragraph 94)

The Energy Technologies Institute (ETI) has identified the need for demonstration and test platforms across a range of energy systems in its developing Strategy, and is considering the needs and opportunities for relevant test platforms as part of its work to develop offshore wind technology projects. Where appropriate, ETI will then work with other agencies including BERR and the RDAs to take these areas forward.

14. We believe that the Research Councils are unique in their support for basic and speculative research and that their research budget should not be compromised by the Government’s commitment, however laudable, to provide increased support for technology demonstration. As such, funding for ETI must be over and above that allocated to the EPSRC Energy Programme. (Paragraph 98)

In the 2008–2009 to 2010–2011 spending review period, EPSRC has made available the funding for ETI in addition to maintaining support for the EPSRC contribution to the Research Councils’ Energy Programme.

We recognise the importance of supporting basic and speculative research as well as applied research and technology development. The DIUS contribution to the funding for the Energy Technologies Institute is provided jointly from the Science Budget, via the Engineering & Physical Sciences Research Council (EPSRC), and from the Innovation Budget, via the Technology Strategy Board.

We and the EPSRC see the role of the Energy Technologies Institute as an important addition to the energy innovation landscape to help accelerate the deployment of new energy technologies. EPSRC will work with partners in ETI to optimise the opportunities to pull through the most promising work from the research base. ETI also presents a major opportunity to grow internationally competitive energy research capacity in the UK.

Intellectual property rights

15. It is essential that the ETI addresses the concerns of SMEs with regard to the exploitation of intellectual property (IP) generated during ETI-funded projects. We believe that ETI's guidelines on the exploitation of IP should be formulated to encourage interaction between SMEs and the Institute's partner organisations. (Paragraph 103)

ETI acknowledges the issue raised in the report concerning Intellectual Property and the importance of both exploitation and protection of Intellectual Property in the context of ETI's funding model.

ETI operates to a set of IP principles which have been agreed between the industry members and the Government and which are intended to allow the ETI to achieve its goals. These IP principles recognise that in order to achieve these goals, negotiation may be necessary on a project by project basis in some cases.

ETI is currently working with a number of third parties on potential projects. These third parties include a number of SMEs. ETI is committed to working with all types of organisations to meet its goals and recognises the need to ensure effective communication of the ETI IP principles. It is hoped that through further, ongoing communication of the IP principles and by use of the demonstrable examples of projects commissioned by the ETI, the concerns expressed by some SMEs and other third parties relating to how Intellectual Property matters are dealt with by the ETI will be addressed.

The Government is keeping this under review.

Government funding programmes—capital grants

16. We recommend that BERR urgently review their funding programmes for energy related research in order to ensure they are able to support the RDD&D necessary to meet the UK's 2020 renewable electricity targets. (Paragraph 111)

BERR and DEFRA believe that in operating the Environmental Transformation Fund (ETF) we need to maintain a balance between technologies that will assist the UK in meeting relatively short term targets and technologies that could deliver significant benefits in the longer term, as requested in the Committee's recommendation 8. Even at the demonstration stage, technologies can require many years of further development before they begin to generate significant amounts of energy as evidenced by the case of offshore wind. Some of the schemes under the ETF are therefore unlikely to have a significant impact on meeting the UK's 2020 targets but also remain important for our longer term climate change objectives.

We believe that to focus the ETF overly strongly on meeting the *renewables* target could be undesirable, as other non-renewable carbon abatement technologies (as supported, for example, by the Hydrogen, Fuel Cells and Carbon Abatement Technologies programme) can also make an important contribution to addressing climate change: again, we intend to retain a balance between the 2020 target and other objectives. Within that balanced programme, we have recently announced a new programme under ETF focussing on offshore wind. It will demonstrate next generation technology to accelerate the deployment of offshore wind and will complement the work of ETI and Carbon Trust mentioned in our response to question 6.

However the creation of the ETF, which unified a number of previously separate funding programmes across several departments and agencies, has indeed created an opportunity to take a more coherent and holistic view of Government support for demonstration and pre-commercial deployment, and the ability to realign priorities as schemes develop. This includes the interface between Grants and deployment policy, and the link with organisations whose focus is at earlier stages of the innovation process.

The Renewable Energy Strategy consultation document which was published shortly after the Committee's report, includes questions specifically asking whether there is evidence that specific emerging renewable and associated technologies are not receiving appropriate support (question 36) and whether there are barriers to development of renewable and associated technologies that are not addressed by current or proposed support mechanisms (question 37).

The responses to these questions, together with the Committee's report and independent analysis and discussion with stakeholders, will be used to inform the development of the ETF and other energy innovation support.

Low carbon buildings programme

17. We recommend that the Government review the role of the Low Carbon Building Programme, and consider whether it is still a necessary and/or appropriate form of support. We suggest that the Government consider using this financial resource to reward installers for the amount of electricity they generate, rather than to support the installation of a microgeneration device. Further, we urge the Government to re-examine the role of renewable energy in the Low Carbon Building Programme. (Paragraph 115)

The Low Carbon Buildings Programme (LCBP) is the Government's £86 million capital grant programme funding the installation of microgeneration technologies. The objective is to help achieve economies of scale within the microgeneration industry and to demonstrate energy efficiency and microgeneration technologies in a range of buildings to include households, schools, social and local authority housing, businesses, charities and the public sector.

Already, grants totalling around £20.2 million have been allocated to projects under Phase 1 of the programme and around £13 million of grants have been allocated under Phase 2. Grant caps for Phase 2 have been increased to 50% across all technologies, bringing them in line with the funding available for solar PV funding. Phase 2 will be open to new

applications until mid-2009 whilst the household stream under Phase 1 has been extended to June 2010 for new applications or as long as funds are available, whichever is sooner. The extension gives business longer term certainty and is an excellent opportunity to encourage uptake in microgeneration technologies along with changes in planning requirements, which came into effect from 6th April 2008.

The Government also recently announced that £3 million of LCBP money would be used to support the fuel poor. This will be an excellent opportunity to demonstrate the suitability of microgeneration for the fuel poor and bring microgeneration to an even wider audience.

The Renewable Energy Strategy consultation is seeking information on the best way of increasing financial support to the small-scale generation of electricity and heat in the future—including whether a move to a feed-in tariff system might have advantages. Any changes to this will be made in the light of responses to the consultation.

Marine Renewable Deployment Fund

18. The MRDF was designed to support the deployment of marine technologies. However, it was launched in a funding landscape that did not provide adequate support for technology demonstration projects. As a result, marine energy devices failed to develop to the extent required to qualify for support under the MRDF. We recommend that BERR consult the Energy Research Partnership, Energy Technologies Institute and Renewables Advisory Board when developing future funding programmes, to ensure they are targeted appropriately. (Paragraph 119)

The MRDF, now one of the programmes under the Environmental Transformation Fund (ETF), was designed in response to the marine energy sector's calls for the creation of a commercial deployment and demonstration support mechanism. Through the 2007 Energy White Paper, the Renewables Advisory Board (RAB) was asked to look at how progress towards the commercialisation of wave and tidal technologies might be accelerated and specifically to consider the reasons for low take-up of MRDF. The RAB report broadly endorsed the design of the MRDF and it continues to retain the support of the marine energy sector.

BERR, through the ETF Programme Board, has consulted the ERP and RAB for views on the development of the ETF and will continue to engage with such stakeholder groups, relevant sectors and bodies when developing future funding programmes. BERR is also closely engaged with other funding bodies such as the Technology Strategy Board, the Energy Technologies Institute and the Carbon Trust to ensure effective coordination and coherence for wave and tidal, and other low carbon energy and renewable, technologies through the innovation system.

European initiatives

19. European funding programmes provide valuable support for energy-related RDD&D in the UK. We welcome the announcement that the Technology Strategy Board will take steps to increase the involvement of UK business in Framework Programme 7. Further, we believe that the creation of a European Institute for

Innovation and Technology is an exciting development, and one with which the UK research base should actively engage. (Paragraph 124)

We share the Committee's assessment about the valuable support European funding can provide for energy innovation in the UK. We recognise the relative weakness of business participation in these programmes as an issue and, in common with many other Member States, are seeking to address this. BERR and DEFRA continue to fund the Energie Helpline UK, a free service that promotes these programmes in the UK and provides help to organisations bidding to secure a share of this support. Overall, UK participation remains strong, for example in the Energy theme of FP6, 47% of the 271 successful proposals involved a UK organisation, meaning UK participation was 2nd only to Germany. Results for FP7 are yet to be published, although interim results indicate that our overall involvement remains strong.

By building on their active involvement in other EU programmes the UK research base will be well-placed to participate in EIT projects through Knowledge and Innovation Communities (KICs). In 2009 the EIT Governing Board will select the topics for which proposals for KICs will be invited. DIUS has kept stakeholders, including representatives of industry and the research base, apprised of developments and will continue to ensure UK stakeholders are informed on the opportunities provided. In particular DIUS is working closely with the Technology Strategy Board to ensure the Knowledge Transfer Networks, the Framework 7 National Contact Point network and other promotional mechanisms the TSB oversees are used to ensure potential UK participants in KICs are aware of the opportunities. Professor Julia King, who is a member of the Governing Board of the Technology Strategy Board, will be serving on the EIT Governing Board.

The funding landscape

20. We find the funding landscape for energy-related RDD&D to be complex. We recommend that the Government review the role of each funding organisation, and that these roles be clarified and defined. Further, we recommend that the Government develop a strategy for communicating the remit of each funding body to the UK RDD&D community. (Paragraph 129)

We agree with the Committee's view that the concept of a 'linear supply chain' does not take account of the complex nature of the innovative process, as well as the Committee's recognition that there are benefits to having a diversity of approaches in our support for innovation. We also recognise that the landscape is often viewed as rather crowded, that clarity is important, and that it is essential that applicants are able quickly to identify what support is available, and appropriate, to them.

The UK has a broad set of energy innovation objectives and it is therefore natural and appropriate that the UK has put in place a wide range of bodies to deliver these objectives. However to ensure that the support for innovation is coherent it is crucial that they all work together. The main public sector organisations involved in funding, supporting and developing low carbon technologies have a number of mechanisms, formal and informal, for managing their interactions and integration—for example the Energy Technologies Institute, the Technology Strategy Board and the Carbon Trust are already working in close

collaboration to ensure effective coordination and coherence of applied research projects across the low-carbon energy sector.

The Environmental Transformation Fund, which began operation in April this year, represented a significant simplification of funding for demonstration, by uniting what were previously a wide range of grant schemes delivered by two Departments and several delivery agents, into a single and coherent fund. The Government has recently published the UK Environmental Transformation Fund strategy:

<http://www.berr.gov.uk/files/file47575.pdf>. This sets out a coherent view of how the ETF sits within the wider technology framework, the purpose of the fund and how the fund will operate.

Banding the RO and picking winners

21. We welcome the proposed reforms to the Renewables Obligation (RO) and the additional support it will provide to emerging technologies. We believe that the reformed RO will be a more flexible instrument. (Paragraph 136)

The Government welcomes the Committee's recognition of the further support the proposed reforms to the RO will provide to emerging technologies.

A UK support mechanism

22. We believe that, in consulting on policies to support the deployment of renewable technologies after the end of the Renewables Obligation in 2027, detailed consideration should be given to the full range of potential support mechanisms, including the introduction of a feed-in tariff. (Paragraph 148)

We have completed extensive work to compare the Renewables Obligation with alternative support schemes (such as feed-in tariffs), both in terms of effectiveness and efficiency.

On large-scale electricity, our findings are discussed in section 3.8 of the Renewable Energy Strategy consultation. We concluded that, on effectiveness, both the RO and alternative mechanisms such as feed-in tariffs can achieve similar results; in terms of efficiency, our modelling suggested that, depending on the assumptions, feed-in tariffs can be somewhat more efficient than the RO in its current form, but these efficiency benefits appear uncertain and comparatively small. We do not believe that they would justify the uncertainty, delay and costs resulting from a change of support scheme. We will continue to look at ways of making the RO work as effectively and efficiently as possible. As a minimum, this will entail making changes to ensure that the RO provides effective support beyond 2027, and at the higher levels of renewable electricity needed to meet our 2020 target.

23. Irrespective of the policy mechanism, or mechanisms, selected to support the deployment of renewable electricity technologies post-2027, we recommend that the Government provide a full and transparent account of its decision process and the reason for rejecting or adopting possible options. (Paragraph 150)

The Renewable Energy Strategy consultation sets out our analysis; in addition we published the research reports underlying our analysis together with the consultation. Following the

consultation responses we will consider the specific policy options on financial incentives to be taken forward, and publish our final renewable energy strategy in Spring 2009 once the Renewables Directive has been agreed. Please also refer to the response to recommendation 22.

Microgeneration and the Renewables Obligation

24. We welcome the Government's forthcoming consultation on mechanisms to incentivise the deployment of microgeneration technologies and recommend that a feed-in tariff for microgenerators be introduced urgently. (Paragraph 154)

Microgeneration will have a role to play in the context of our Renewable Energy Strategy, and we will continue to work to ensure that distributed energy technologies, including microgeneration, can fulfil their potential in achieving the UK's share of the EU 2020 Renewable Energy target.

In the face of this target and our carbon reduction goals we are committed to looking again at financial incentives for distributed energy, including microgeneration. This is why we are looking at a range of options to increase financial support to the small-scale generation of electricity and heat—including consideration of upfront payment, for example, and the advantages of a feed-in tariff system. A key factor in any future decision on support will be how the incentive system will interact with the UK energy market. The strategy is the right place to undertake the analysis needed on how to further support microgeneration, as we need to decide what would be the right mechanism for small scale generation within the context of our wider renewable energy and low-carbon targets.

Through the Renewable Energy Strategy consultation we are currently consulting on a set of potential measures which we believe has the potential to allow the target to be met. We are consulting formally on these ideas until 26 September and welcome views. We will develop our plans in the light of responses to this consultation, and once the Renewable Energy Directive has been agreed.

Grid connection

25. We believe that, in line with the EU Directive, renewable electricity generators should be guaranteed connection to the UK transmission system. In addition, we believe that electricity generated from renewables should be transmitted as a priority. (Paragraph 163)

We recognise the importance of facilitating the connection of renewable generators to the transmission system, but would also note the need to maintain a reliable network and encourage investment in other essential low carbon and conventional generating technologies.

The draft Renewable Energy Directive includes an obligation on Member States to ensure network owners provide priority access to the grid for renewables projects. Under the current Directive, this is a discretionary matter for Member States. We are working closely with our European counterparts to clarify this obligation, and ensure that generators from non-renewable sources are not discriminated against.

Our initial view is that the approaches set out in the Transmission Access Review (see below) are capable of delivering significant improvements in grid access for renewable generators without specifically giving preference to renewable generation. In particular, arrangements that give a firm connection date reasonably consistent with the development time of individual projects are likely to speed up connection and improve investor certainty and will be consistent with the objectives of priority access.

On the matter of priority transmission we would note that, unlike many European markets, the UK does not have a centralised dispatch system. Instead, it is a matter for the market to decide which generator runs when, subject to the needs for safe and reliable system operation. Renewable generation sources such as wind benefit from these arrangements as zero-marginal fuel cost generators will always be higher in the merit order, and will therefore run ahead of other generation types.

The GB Queue

26. We agree with the interim conclusion of the Transmission Access Review that those projects in the GB queue that are able to use grid capacity be connected as a priority. If the electricity industry does not set up formal arrangements to resolve this problem, we recommend that the Government bring forward legislation to make it do so. (Paragraph 168)

In relation to short term measures to accelerate grid access the Transmission Access Review (TAR) discusses the range of improvements that National Grid has already identified to the way that it manages the queue of generation waiting to connect to the grid. Under its current licence provisions, National Grid is taking a more robust approach to removing speculative parties from the queue if it is obvious that they will not be in a position to use the system by the backstop date in their connection arrangements. National Grid has also implemented a revised methodology on how to fill gaps in the GB queue. Ofgem will be working with National Grid in the second half of 2008 to ensure its methodology enables faster connection of new generation, by removing unviable projects and reassigning connection dates according to clear, objective criteria. In addition, the TAR set out further short-term measures to help connect more generators including assessment by Ofgem and the Transmission Owners of time-limited derogations from system planning standards. We estimate that these measures are capable of bringing forward 1GW of new renewable connections including just under 600MW of projects that already have planning consent.

National Grid is developing plans to publish greater information on the status of projects in the queue and their dependencies on wider reinforcement. Ofgem expects that this additional information will be more frequently updated, more visible and clearer than has previously been provided to the industry. This online transmission works information will help new projects make more efficient decisions about where to locate, and could help generators connect to the system more quickly.

The Government is committed to seeing rapid progress in all of the areas of the TAR and as we develop the Renewable Energy Strategy, we will consider what more may be done to facilitate grid access. Ofgem have been asked to provide a progress report by the end of December 2008, and we will then be taking a view on progress including on the

acceleration of the connection of ready to go projects. This will include what measures, including legislation, are needed to deliver grid access in support of our targets.

Grid capacity

27. We agree that, at least until new transmission capacity is constructed, it will be increasingly necessary for generators to share grid capacity. We believe that the Government should act immediately to ensure that current capacity is shared with renewable generation. (Paragraph 174)

The Government agrees that in order to make more efficient use of existing and new capacity there needs to be better arrangements for sharing of transmission capacity. The TAR final report set out the principles that need to underpin these arrangements. Industry working groups are developing long term changes to the access regime. These groups will report to Ofgem in late 2008. Industry working groups have already begun the work needed to develop the code changes that will allow transmission access to be shared. Work is going on in parallel to review the system planning standards that determine the amount of transmission investment required (GB Security and Quality of Supply Standards) in order to ensure that those standards remain fit for purpose in the light of the changing generation mix. As we have said above we are committed to seeing rapid progress on all areas of the TAR and we will take a view on progress by the end of the year.

Renewable electricity generation

28. We were dismayed by the complacent attitudes of Ofgem and National Grid with regard to the potential demands that generating 30–40 per cent of electricity from renewables might place on the evolution and management of the transmission system. We recommend that detailed research into the implications of sourcing 30–40 per cent of electricity from renewables be supported as a priority. Further, we believe it is essential this work be completed by early 2009, such that it can inform the Government’s revised Renewable Energy Strategy. (Paragraph 180)

The indications from National Grid and our own advisers are that there is no technical barrier to the connection of renewable generation at, for example, a 30%–40% penetration level. The indications are that the challenge is an economic rather than technical one, i.e. ensuring that sufficient capacity of all technologies has the right incentives to remain on and join the network to support the deployment of intermittent renewable technologies and ensuring the economic and efficient operation of the balancing mechanism.

The TAR final report sets out details of studies to be undertaken by the GB system operator and transmission companies in order to develop the investment plans needed to meet the UK’s 2020 renewable target. A significant study is underway led by the National Grid working together with the Scottish transmission companies, under the auspices of the Electricity Networks Strategy Group, which is jointly chaired by BERR/Ofgem, to identify the likely scenarios and associated investment needed to deliver the transmission capacity required for 2020.

Ofgem is also launching a series of consultation documents on the financial incentives in place on the transmission licensees. Whilst funding is at record levels, and sufficient

flexibility is in place in the current price control to allow funding for all feasible new connections, Ofgem considers that, if an appropriate scheme can be developed, investing ahead of need could help align the build times of generation projects with required infrastructure. Ofgem aims to implement new measures in April 2009, which will likely offer an enhanced return for taking on more risk, on the proviso that the investment is efficiently incurred and offers good value to the consumer.

The Government is also supporting a programme of work through the Centre for Sustainable Electricity and Distributed Generation (a collaborative venture between Imperial College London, the University of Cardiff and Strathclyde University). This programme includes both the technical and economic aspects of integrating wind generation within the GB system.

Offshore transmission

29. We are concerned that the proposed offshore transmission arrangements are not appropriate for the UK's target of 33GW of offshore wind by 2020. We urge the Government to reconsider the development of an offshore grid. (Paragraph 187)

The Government's proposals for the new offshore transmission regime have been the subject of extensive consultation, during which we have carefully considered a number of alternative approaches. Following consideration of the responses from industry we have concluded that a regulated regime based on the onshore arrangements but with competition for offshore transmission owner (OFTO) licences to connect offshore generators to the onshore grid is the best option. It will allow the connection of significant amounts of renewable offshore generation to the onshore electricity network, in a timely and cost effective manner whilst maintaining the integrity of the system as a whole, and achieving best value to electricity consumers.

This approach will also enable new companies to compete in the market to deliver cheaper and timelier connections than the alternative approaches considered, and will be more focused on generators' needs.

The proposals for a new offshore regime will apply the same principles that govern the onshore grid offshore, except where the specific circumstances of offshore generation justify changes being made. This means offshore developers will be able to access the grid on similar terms as onshore generators.

We have also announced that we intend to extend the role of National Grid as the GB System Operator—which is responsible for co-ordinating the flow of electricity around the grid—offshore. We are considering whether changes need to be made to its System Operator licence to enable it to better co-ordinate these offshore connections.

We also believe our proposals fit well with The Crown Estate's plans for leasing Round 3. The OFTO tender process will have the flexibility to accommodate the appointment of a single OFTO to connect a number of generators in an offshore area.

Having consulted on the high level principles of the new regime we are now developing and consulting on the detailed changes to the industry codes and licences that will underpin the new regime.

We recognise the range of views expressed to the Committee including a number of concerns about the approach and are taking these into account as the regime is developed. Our approach has the support from many within the industry, including potential new entrants who believe the development of the offshore grid is a new and exciting business and investment opportunity.

Intelligent grid management

30. We are concerned that the level of investment in R&D by National Grid is insufficient to identify and respond effectively to the challenges that face transmission and grid management technologies. (Paragraph 194)

National Grid is a public limited company and decisions on its level of R&D expenditure are therefore not a matter for Government.

However, in the recent transmission price control review, Ofgem identified R&D as being critical to addressing the fundamental challenges that the network companies are facing. Ofgem therefore proposed an Innovation Funding Incentive (IFI) specifically targeting R&D and innovation. The IFI scheme allows up to 0.5% of regulated revenue (equivalent to £5m for National Grid) to be spent by the transmission companies per year. Over the period from 2007–12, Ofgem has provided funding of £25m explicitly for R&D. For all three transmission companies this sums to well in excess of £30m over 5 years.

However, it is not just the transmission companies that benefit from targeted funding in this manner. The distribution companies (lower voltage networks that transfer power from the high voltage grid to end consumers) also have provision for IFI in their price controls. They also have provision under the Registered Power Zones (RPZ) which encourages technical innovation and an explicit incentive designed to provide appropriate funding for connecting additional distributed generation.

Demand-side management

31. We believe that demand-side management will be increasingly important as the deployment of microgeneration technologies gathers pace. We recommend that the Government support the development, and roll-out to domestic consumers, of smart meters which are compatible with electricity microgeneration devices. (Paragraph 198)

The Government recognises the potential for smart metering to deliver benefits to domestic consumers. However, its current economic analysis indicates that there is not a positive business case for smart meters in the domestic sector. Fully quantifying expected benefits and estimating future costs on a project of this scale carries a degree of uncertainty; and the impact assessment work completed to date has identified a number of areas for further work. The Government is therefore undertaking further work with stakeholders to ensure it has the best possible assessment of costs, benefits and other issues before taking a decision on roll-out, which it aims to do later this year. Among the issues being considered is functionality, including the extent to which smart meters may potentially benefit consumers with microgeneration installations.

Planning and the environment—planning policy

32. We note the proposal contained in the Planning Bill that consenting decisions on major infrastructure projects are to be decided by an Infrastructure Planning Committee (IPC). We look forward to further clarification of how the IPC will interact with, and address the concerns of, local authorities and other stakeholders. (Paragraph 205)

The Planning Bill will establish the IPC as the decision making body for nationally significant infrastructure projects. The IPC will be made up of a body of Commissioners and would deal with around 45 major projects a year and a larger number of smaller projects.

Decisions will be taken by independent experts, using streamlined procedures. There will be independent, objective and comprehensive investigation of the merits (and disadvantages) of infrastructure applications. Our expectation is that Commissioners will have a range of expertise, including the ability properly to engage public awareness. They will be able to call upon experts as a part of their deliberations.

The Bill protects and enhances the role of local authorities, which will have a central role in the new regime. Local authorities would be involved in the local aspects of infrastructure planning, at all three stages: relevant LAs would be statutory consultees where a NPS identified specific locations for development; at the project development stage for all nationally significant infrastructure projects; and, for the inquiry process. Promoters would need to liaise with the relevant local authorities when drawing up their plans to consult the local community more generally, and local authorities would be able to make representations to the IPC if they believed that pre-application consultation had not been adequate.

Planning applications

33. We are concerned that measures introduced in the Planning Bill will not materially affect the speed at which consenting decisions for smaller projects are reached. We urge the Department for Communities and Local Government to reconsider whether the thresholds for IPC consideration of onshore and offshore developments are appropriate. (Paragraph 209)

The Government is committed to meeting its targets for renewables which means getting good quality applications through the planning system and looking at ways to improve the system. The proposals on the IPC in the Planning Bill will play a vital role in achieving this and an independent body will play a key part in meeting our 2020 goals.

The new Infrastructure Planning Commission (IPC) will consider Nationally Significant Infrastructure Projects. The 50MW threshold matches s.36 of the Electricity Act 1989 for onshore generating stations. For offshore generation 100MW has been proposed because the increasing size of offshore wind farms in particular, plus their generally more remote geographical locations, mean that a project has to be somewhat larger than an onshore project before it becomes nationally significant. Also a higher threshold would apply to offshore electricity generation projects to be determined by the IPC because there is much

greater pressure on our use of space on land which means rather bigger wind farms can be built at sea before they become nationally significant infrastructure projects.

In essence, the 50MW threshold is a long-standing threshold that has been used to distinguish between national and local decision-making. We acknowledge in our consultation on the Renewable Energy Strategy that some stakeholders would prefer a lower threshold. However, the threshold reflects our commitment to local planning decisions being made at the appropriate level, ensuring a balance between local democracy and wider national interests. We do not therefore think it appropriate to change the threshold.

Smaller generation projects have been, and will continue to be, essential for demonstrating new technologies offshore. In such cases where smaller projects are essential to meeting national policy goals the Planning Bill proposes that Ministers be able to direct nationally significant projects to the IPC. This power will not be able to be used excessively as that will create uncertainty, but BERR hopes that it could be used to address particular problems, including clusters of wind farms and emerging technologies offshore.

The Government's aim of reducing uncertainty and risk for the public and for developers, and seeing projects decided within as short a timeframe as practicable applies equally to projects falling beneath the 50MW threshold. The new expectations on planning for renewables set out in the climate change Planning Policy Statement published in December 2007 will help, and we are encouraging the fullest possible use of the freedoms and flexibilities provided by our wider planning reforms. Through the Renewable Energy Strategy we are consulting on a range of measures that build from these reforms, including the scope for developing a clear delivery strategy for consenting projects for renewable energy.

Planning Policy Statement 22

34. We are concerned that a local authority's reputation in the application of PPS22 may become the deciding factor in an investor's choice of site location, rather than the specifics of the site itself. We recommend that 'best practice' in the application of PPS22 be developed and disseminated as a priority. (Paragraph 213)

We know the planning system must create an attractive environment for innovation and for the private sector to bring forward investment in renewable technologies. We believe the policies in our new PPS on climate change will help create a supportive environment for the private sector. The PPS, for example, expects regional and local planners actively to plan for, and support, renewable energy generation, including by allocating and safeguarding sites. Building on our existing PPS on renewable energy (PPS22), and its supporting practice guidance, regions are expected to set targets for renewable energy capacity in line with national targets, or better where possible.

These new rules are being supported in the Planning Bill by a statutory duty on local planning authorities to take action on climate change.

Environmental Impact Assessment

35. We recommend that the Government provide baseline Environmental Impact Assessments for areas suitable for all offshore renewables projects, and that it liaise with industry to ensure these assessments are appropriate to their needs. (Paragraph 218)

Regulations have, indeed, been transposed into UK law, following the EU Environmental Impact Assessment (EIA) Directive, requiring that an environmental impact assessment (EIA) should be undertaken by the developer of any proposed offshore renewable energy development that may be likely to have a significant effect on the environment. It is important for the developer to undertake the EIA on a case-by-case basis because each detailed assessment must reflect the nature, scale and location of the development, which is unique to each project. When combined, the attributes of a project's nature, scale and location influence the environmental baseline and subsequently the scope of each assessment. As a result the content of two EIAs is never identical.

The EIA process details realistic alternatives, outlines the preferred option and proceeds to assess the anticipated significant impacts (both positive and negative) from construction through to decommissioning for each project. The EIA must also account for the cumulative impact of the project in relation to other projects. The assessment should, if necessary, include any mitigation measures to remove, reduce or offset significant environmental impacts.

EIAs need to be sufficiently robust and comprehensive to provide clarity on the likely impacts and the risks associated with them. Developers of marine renewables shall only be required to provide levels of baseline data for EIA Regulations that are necessary to determine significance of impacts. Assessment requirements, mitigation measures and monitoring requirements remain proportionate to the significance of an impact and likelihood of that impact occurring. As a result, any developer commencing an EIA is recommended to consult, early, with Government, Statutory Advisors and stakeholders who can offer advice on the scope of an EIA.

With regard to new technologies, such as wave and tidal demonstration devices, the Government has offered various mechanisms to encourage the growth of the marine renewable industry. We believe that the demonstration phase for the marine renewable industry provides an excellent opportunity for developers and Government to learn more about any potential environmental impacts and mitigation measures. Hence the Government allocated £2m, of the Marine Renewable Deployment Fund, to increase our understanding, via monitoring programmes, of the potential environmental impacts of any pre-commercial wave and tidal devices that go in the water. This financial support was made available to fund research projects where monitoring of demonstration devices will provide generic knowledge that could reduce the need for further monitoring in the future; help inform the other developers undertaking EIAs with similar issues to consider; help inform Government and Statutory Advisors in taking consenting decisions and in relation to informing wave and tidal policy decisions; and ultimately leading to the further deployment of marine renewables.

In addition, the Government continues to fund offshore wind related research and data collection programmes to ensure robust assessments can be undertaken, including the rolling Offshore Energy Strategic Environmental Assessment programme, the Wind Impacts Research Programme, and to participate in Collaborative Offshore Wind farm Research Into The Environment (COWRIE), a registered Charity set up to advance and improve understanding and knowledge of the potential environmental impacts of offshore wind farm development in UK waters.

Social science research

36. We recognise the importance of the social sciences in supporting the deployment of renewable electricity-generation technologies. We welcome ESRC's continued involvement in the Research Council Energy Programme. (Paragraph 222)

The Economic and Social Research Council (ESRC) welcomes the Committee's findings and in particular the recognition it gives to the important role that the social sciences are and should continue to play with regard to the support and development of government policy in this area. The ESRC remains committed to working with its sister research councils via the Research Council Energy Programme and is consistently exploring new opportunities to bring social science insight to bear on the wider agenda.

37. Social scientists make a valuable contribution to developing and reviewing Government renewables policy. We would advocate that social scientists undertaking policy-related research consistently develop practical policy solutions, and that the Government draw upon their expertise whenever it is engaged in the development of renewables policy of social or economic importance. (Paragraph 224)

We recognise the important contribution social scientists can make to developing policy. The Government is closely engaged with social scientists through the work of economists, statisticians and modellers, in the development of renewables policy. They provide the analytical underpinning for key renewable issues; liaise with external stakeholders, both academic and industry groups; analyse wider social and economic impacts of policy, covering a spectrum of issues from behavioural changes to macro-economic effects; develop a robust evidence base including commissioning external research where necessary. Their contribution provides insights and ensures consistency of analytical approach across Government.

The Economic and Social Research Council (ESRC), which funds research and training addressing economic and social concerns, has identified the energy sector as a priority for business engagement activity to encourage knowledge exchange through a range of mechanisms, highlighting important policy issues. ESRC's current energy-related research portfolio is strongly aligned to policy interests, e.g. analysis and forecasting future energy system scenarios and step changes to patterns of supply and consumption. All its award holders are required to ensure dissemination and engagement with appropriate bodies and groups, examples include the UK Energy Research Centre which regularly produces and disseminates technology and policy assessments.

A recent ESRC/Momenta seminar included a focus on informing government policy on climate change and, amongst other things, recognised that collaboration and interaction

between academia, government and industry was the most effective method of developing well-informed policy in this area. ESRC is now considering how to utilise these insights in regard to both encouraging engagement and identifying future research funding strategy. The Committee's report is a helpful encouragement to continue this work.

Skills

38. Given the current commitment to the skills agenda, we deem it is essential that Government engage with the renewables industry to ensure that the skills needs of developers are addressed. This is an area in which the Energy Research Partnership could play a central role. (Paragraph 228)

Our goals of delivering a ten-fold expansion in renewable energy by 2020 and tackling climate change to move to a low-carbon, resource efficient economy are ambitious. Not only do we need skills to support the rapid expansion of our own renewable electricity sector, the Stern Review also highlighted that there will be significant economic advantages for countries that get ahead in the race to develop renewable electricity and low carbon technology industries. Ensuring that we have the right skills to give British companies a competitive advantage will be the key to our taking advantage of this opportunity.

For us to meet this challenge it is essential that we engage all the relevant parties to develop a strategic solution to deliver the skills that will be needed. The Government held a consultation event at Windsor in June, including key employers, Sector Skills Councils and the UK Commission for Employment and Skills.³

We plan to take this work forward collaboratively with the Sustainable Development Commission, the UK Commission for Employment and Skills, Sector Skills Councils and others, including with input from the Energy Research Partnership where relevant, to ensure there is a consistent to developing the generic and sector-specific skills involved in expanding renewable energy and moving to a low carbon, resource efficient economy. The Sector Skills Councils are themselves producing a report on energy skills, in response to the 2007 Energy White Paper.

Skills Academy

39. We do not advocate the creation of a National Academy or Sector Skills Council in the Renewable Electricity Sector. Instead, we recommend that Sector Skills Councils, including the Energy and Utility Skills Council, Construction Skills and the Sector Skills Council for Science, Engineering and Manufacturing Technologies, establish a cross council steering body to address skills deficits within the industry. (Paragraph 234)

Sector Skills Councils (SSCs) have a central role in assessing the future skills needs of their sectors, through their Sector Skills Agreements and Sector Qualifications Strategies. The renewable electricity generation sector and its supply chain cuts across the footprints of a number of SSCs plus the engineering construction sector, with its statutory training board, the ECITB. It will be important to ensure that the solution developed brings these together

³ http://www.dius.gov.uk/policy/documents/skills_sustainable_outcome.pdf—'Skills for a Sustainable Future'—Windsor Consultation report (June 2008)

with relevant National Skills Academies, key employers and other bodies, to deliver a coordinated approach.

This Autumn Government will convene a high level forum on low carbon skills. The forum will be tasked with establishing a Strategic Advisory Panel to align the skills system behind the challenges and opportunities arising from the transition to a low carbon economy, in line with the recommendations from the Windsor consultation. The Panel's remit will be to find ways to draw cutting edge business practice into the skills system so as to deliver a rapid supply-side response without weakening SSC leadership or employer engagement.

Energy sector skills are based on highly-transferable core competencies, for example in mechanical, electrical and project management disciplines. Thus the UK Continental Shelf was developed largely by skilled people from heavy engineering, shipbuilding, nuclear etc. Most of those employed in the wind energy industry today were trained in mainstream energy or manufacturing. The SSCs are expected to address these issues in their forthcoming report on energy sector skills.

Knowledge Transfer Partnerships

40. We recommend that a flagship Knowledge Transfer Partnership programme be established in the area of new and renewable energy systems.(Paragraph 236)

The Technology Strategy Board will double the number of Knowledge Transfer Partnerships in the next three years and its Governing Board has agreed that an increased focus will be given to those priority areas highlighted in the Technology Strategy Board's recently published strategy.⁴ This includes energy generation and supply and will be achieved through increased marketing and promotion rather than a separate ring fenced budget.

In addition, the Technology Strategy Board will encourage the flow of people and ideas to stimulate more innovative approaches to energy technologies by working with the Research Councils to provide businesses with access to academic expertise.

September 2008

4 <http://www.innovateuk.org/ourstrategy.ashx>

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 2007–08

First Report	UK Centre for Medical Research and Innovation	HC 185 (HC 459)
Second Report	The work and operation of the Copyright Tribunal	HC 245 (HC 637)
Third Report	Withdrawal of funding for equivalent or lower level qualifications (ELQs)	HC 187–I (HC 638)
Fourth Report	Science Budget Allocations	HC 215 (HC 639)
Fifth Report	Renewable electricity-generation technologies	HC 216–I
Sixth Report	Biosecurity in UK research laboratories	HC 360–I
First Special Report	The Funding of Science and Discovery Centres: Government Response to the Eleventh Report from the Science and Technology Committee, Session 2006–07	HC 214
Second Special Report	The Last Report: Government Response to the Thirteenth Report from the Science and Technology Committee, Session 2006–07	HC 244
Third Special Report	UK Centre for Medical Research and Innovation: Government Response to the Committee's First Report of Session 2007–08	HC 459
Fourth Special Report	Investigating the Oceans: Government Response to the Science and Technology Committee's Tenth Report of Session 2006–07	HC 506 [incorporating HC 469–j]