

# UK POWER GIANTS

TALKING CLIMATE CHANGE  
2007



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## INTRODUCTION

WWF-UK regards climate change as the most serious threat facing the planet and human development, and one that demands urgent national and global action. To prevent average global temperatures increasing by more than 2°C above pre-industrial levels – a threshold above which severe and irreversible tipping points in the climate become increasingly likely – the world's emissions of greenhouse gases will need to peak and start to decline within 10 years.

To protect the climate, global greenhouse gas emissions will need to fall by at least 50% from 1990 levels by mid-century – as acknowledged by the EU and the UK and German governments at the G8 summit in 2007. For industrialised countries such as the UK, this means that greenhouse gas emissions must be cut by at least 80% by 2050. This will require major changes across all sectors of the economy, but the implications for the power sector are particularly acute. The power sector currently accounts for more than 30% of the UK's CO<sub>2</sub> emissions, but it will need to decarbonise completely by 2050 if we are to meet our emission reduction goals.

In early 2007, WWF-UK commissioned Innovest Strategic Value Advisors to benchmark the performance of the UK's big six power companies with regards to carbon emissions reduction and risk management<sup>1</sup>. Innovest's report – *Generating Climate Change 2007*<sup>2</sup> – follows two similar exercises in 2005 and 2006. Innovest assessed the six companies' performance against a set of criteria focusing on actual practice, performance against regulatory standards, and coherence of carbon management and strategy.

However, to complement Innovest's quantitative, objective assessment, this year WWF-UK has carried out a parallel assessment of the companies' positions on a range of key public policy questions in the climate change and energy debate. This exercise, which inevitably involved a large degree of subjectivity, was intended to shed light on whether companies were adopting a progressive stance in their dealings with government or acting as barriers against the development of more ambitious carbon reduction and energy policies.

We believe that this report offers a valuable snapshot of the companies' key lobbying positions. The data and rankings also complement and enrich Innovest's parallel benchmarking report.

In April 2007, WWF-UK invited the six main power companies to respond to a short survey questionnaire on 10 key issues which are at the heart of public debate on climate and energy policy. Topics covered included: international, EU and UK carbon emissions reduction targets; the EU Emissions Trading Scheme (ETS); energy efficiency; mandatory reporting of carbon emissions; renewable energy; nuclear power and carbon capture and storage (CCS).

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<sup>1</sup> Innovest and WWF-UK did not rank British Energy due to the incompatibility of nuclear power assets with the electricity generation base and household energy supply arms of other UK power companies surveyed.

<sup>2</sup> *UK Power Giants – Generating Climate Change*, September 2007. The third annual benchmarking report for WWF-UK written by Innovest Strategic Value Advisors.

WWF-UK took care to make the companies' responses anonymous before they were assessed and scored by a team of in-house policy experts<sup>3</sup>. We also made clear to the companies that all responses would be published in full.

Overall, we hope this survey allows a unique examination of each power company's policy lobbying positions. It also allows clear comparisons to be drawn with their investment plans and targets, as analysed in Innovest's parallel report.

## METHODOLOGY

The survey responses from the six power companies were received in late May 2007. Seven WWF-UK policy experts reviewed the responses, which had been checked to ensure their anonymity, over a two-week period, and then met for an 'assessment day' at which we compared and scored answers to each of the 10 questions.

Scores on each question were awarded relative to WWF-UK's own positions on climate change mitigation and energy policy issues. To receive a maximum score of 10 a company's response/policy position had to be very close to WWF-UK's own position. A low score of 1 was given to those responses that in our view failed to recognise the scale and urgency of the challenge, or to support the development of more sustainable energy options. A score of 0 was reserved for companies that failed to answer a question – in practice none did so.

We recognise that this exercise is inevitably subjective. However, we have sought to be transparent about the process and the benchmarks we have used, and believe that the conclusions give a good indication of which power companies are taking on more progressive leadership positions in the energy debate.

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<sup>3</sup> WWF-UK in-house experts who participated in the assessment and scoring exercise included: head of climate change team, head of policy at WWF-Scotland, head of sustainable business unit, energy policy officer, business relations manager, EU ETS policy officer, senior campaigns officer and sustainable business manager (global finance).

## FINDINGS AND RESULTS

The individual scores given by WWF-UK to each response to the 10 questions, and the overall survey scores and rankings for each company's response are shown in the table below.

Table 1

Company name	Scores given to each company response										Total score out of possible 100
	Global 2°C limit	EU emission targets	UK climate change bill	EU ETS	CDM/JI credits	Energy efficiency	Carbon disclosure	Renewable energy targets	Nuclear power	CCS	
<b>Scottish&amp; Southern Energy</b>	7	7	6	6	3	7	7	7	3	1	<b>51</b>
<b>Centrica</b>	2	7	2	9	4	3	9	4	2	6	<b>48</b>
<b>Scottish Power</b>	7	5	5	3	7	1	3	8	2	2	<b>43</b>
<b>E.ON UK</b>	8	7	3	3	2	6	7	3	1	2	<b>42</b>
<b>EDF Energy</b>	2	6	5	5	5	5	1	1	1	3	<b>34</b>
<b>RWE npower</b>	1	1	1	1	2	3	2	3	3	5	<b>22</b>

From the results table above it can be seen that there was a diversity of scores on each issue, but also that no company scored highly across all issues. SSE achieved the most consistently mid-high scores. A high score of 9 was awarded twice to Centrica, while RWE npower and EDF Energy received a large number of low scores.

The highest overall score of 51% was achieved by SSE, followed closely by a score of 48% by Centrica. Scottish Power and E.ON were closely grouped, with scores of 43% and 42%. EDF Energy and RWE npower were awarded the lowest overall scores with 34% and 22%, respectively.

None of the six power companies achieved a high score (i.e. 70% or greater) which, in WWF-UK's view, would represent a company taking a very progressive approach to influencing UK government policy framework.

#### Main findings

To expand on the overall scores, the following section discusses in more detail the specific responses to each question, illustrated by a selection of quotations.<sup>4</sup> The companies' full survey responses are reproduced in Appendix 1.

### **Issue 1) Goal for limiting global average temperature rise and atmospheric concentrations of greenhouse gases**

#### **Question 1: What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

WWF-UK regards climate change as the most serious threat facing the planet and human development, and one that demands urgent national and global action. To prevent average global temperatures from increasing by more than 2°C above pre-industrial levels – a threshold above which severe and irreversible tipping points in the climate become increasingly likely – the world's emissions of greenhouse gases will need to peak and start to decline within 10 years. Moreover, to have a reasonable chance of keeping warming to less than 2°C, greenhouse gas concentrations will need to stabilise at 450ppm CO<sub>2</sub> equivalent or lower.

To protect the climate, global greenhouse gas emissions will need to fall by at least 50% from 1990 levels by mid-century – as acknowledged by the EU and the UK and German governments at the G8 summit in 2007. For industrialised countries such as the UK, this means that greenhouse gas emissions must be cut by at least 80% by 2050.

Against this WWF-UK policy position, for a given power company in this survey exercise to be deemed 'progressive' we believe it must agree clearly with at least one of the following: the 2°C limit; the 450ppm CO<sub>2</sub> equivalent (CO<sub>2</sub>e) stabilisation level; and the need for global emissions of greenhouse gases (GHG) to peak and start to decline within 10 years.

E.ON UK, Scottish Power and SSE were awarded scores of 7 and 8 out of 10 for their answers to question 1 as they recognised the importance of a 2°C limit and emissions reductions targets. The following responses illustrate such understanding:

*"... We support the EU's objective of limiting global warming to no more than 2°C above pre-industrial levels..." (E.ON UK)*

*"... We support the EU's position on limiting greenhouse gas emissions to stay below 2°C and for 20% emission reduction target by 2020..." (Scottish Power)*

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<sup>4</sup> For more information on WWF-UK's specific policy positions please visit the Defra, DBERR and Ofgem websites to see our responses to recent public government consultations, such as reform proposals for the Renewables Obligation.

*“... From the most recent scientific reports of the IPCC it would appear that this will require a reduction of around 50% of global ghg emissions levels in 1990 by the middle of the century. We believe future agreements under the UNFCCC and/or under the auspices of the G8 should adopt this as the overarching objective for international climate policy and construct environmentally robust yet sufficiently flexible regulatory instruments to achieve that goal at least cost to the global economy...” (SSE)*

In contrast, RWE npower and EDF Energy provided much more ambiguous answers and so were awarded low scores of 1 and 2. For example, WWF-UK felt that RWE npower’s vague response failed to acknowledge the importance of EU leadership in driving forward international agreement on a clear long-term objective:

*“... We believe that carbon emissions reductions should be achieved through global and economy wide objectives to protect the competitive position of European industry and ensure policy goals on climate change are achieved at least cost for society as a whole...” (RWE npower)*

## **Issue 2) EU emissions reduction targets**

**Question 2: In March, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol’s first commitment period which ends in 2012. What are your company’s views on these objectives?**

WWF-UK supports this proposal. To protect the climate, global greenhouse gas emissions will need to fall by at least 50% from 1990 levels by mid-century – as acknowledged by the EU and the UK and German governments the G8 summit in 2007. For industrialised countries such as the UK and other EU member states, this means that greenhouse gas emissions must be cut by at least 80% by 2050.

For a power company to be deemed ‘progressive’ WWF-UK was looking for clear support for the new EU emissions reduction targets.

Centrica and SSE were awarded scores of 7 out of 10 as their answers showed clear support for the EU targets:

*“... Clear and binding emission reduction targets in the EU underpin this framework by giving industry the confidence to invest in more expensive lower-carbon technologies and services. We therefore welcome the binding and unilateral EU target to cut greenhouse gases by 20% by 2020, and fully support the EU objective of a 30% reduction by the same year if international agreement can be found...” (Centrica)*

*“... We support the EU’s emissions reduction target and the fact that it has been expressed in such a way as to encourage complementary commitments by other countries...” (SSE)*

In contrast, RWE npower was only awarded a score 1 out of 10, reflecting the lack of ambition shown in its response:

*“... These objectives are extremely challenging, particularly given that the policy framework for delivery is not in place. It is likely that the burden sharing arrangements and associated legislative framework will take several years to put implement...” (RWE npower)*

### **Issue 3) UK Climate Change Bill and emissions reduction targets**

**Question 3: The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK’s total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

WWF-UK believes real progress in the UK to reduce emissions has not been impressive, as provisional data for 2005 show that UK CO<sub>2</sub> emissions are now just 5.3% below 1990 levels. WWF-UK believes that at least a 3% emissions reduction every year from 2010 to 2050 is now required, which leads to an overall CO<sub>2</sub> emissions reduction target of at least 35% by 2020 and at least 80% by 2050 in the UK Climate Change Bill.

At present the government is proposing weaker reduction targets of 26-32% for 2020 and 60% for 2050. WWF-UK believes that these targets are based on old science. Indeed, a recent report for the government made clear that to stabilise greenhouse gas concentrations even at the unsafe level of 550ppmCO<sub>2</sub>e – corresponding to a temperature rise of 3°C or more – the UK’s emissions need to fall by 70-90% by 2050<sup>5</sup>.

In the scoring exercise, WWF-UK was looking for ‘progressive’ companies to declare support for more ambitious targets to be included in the Climate Change Bill.

Unfortunately none of the companies scored very highly. SSE scored highest with 6 out of 10, as it stated conditional support for additional effort if others were involved:

*“... We support the targets set out in the draft CC Bill. And we support the proposed targets for 2020 and 2050 but would suggest that additional effort could be indicated on a conditional basis following the example of the EU 2020 target – for example a target of 80% by 2050 if others follow suit...” (SSE)*

RWE npower again failed to recognise the importance of ambitious domestic emissions targets or UK leadership, as illustrated in the following vague response:

*“... We welcome the leadership being shown by the UK Government in setting out its ambitions in terms of CO<sub>2</sub> emission reduction targets and, for some time, we have advocated the need for a long-term trajectory for CO<sub>2</sub> emissions reductions going forward. However, this has to be designed at European Union level given that the EU ETS is the key policy instrument dictating investments in the power generation sector over this time frame...” (RWE npower)*

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<sup>5</sup> *Factors underpinning future action – 2007 Update*, May 2007. Report by Ecofys for Defra, found at <http://unfccc.int/resource/docs/2007/smsn/ngo/026c.pdf>

#### Issue 4) EU Emission Trading Scheme (EU ETS) improvements

**Question 4: For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

WWF-UK has pushed for a robust phase II and for the following key improvements to the scheme: a cap set at the EU level which is in line with a 30% reduction by 2020 target; full auctioning, or as a minimum 100% auctioning to the power and aviation sectors; and long-term certainty provided by a 2050 target split into five-year trading periods. WWF-UK strongly supports a move to full auctioning in order to expose the large emitters in the scheme to the full price of carbon – especially in light of analysis by the government which estimates that the UK's large electricity generators gained windfall profits of £1.2-1.3 billion in 2005 because of free allocation of permits<sup>6</sup>. In our view, this is a serious violation of the 'polluter pays' principle.

For a given power company to be classed as 'progressive', WWF-UK was looking for support for the EU ETS improvements suggested above, particularly regarding the cap level and 100% auctioning.

Centrica scored very highly as it strongly supported the elimination of free allocation and the introduction of auctioning, and so was awarded 9 out of 10:

*"... From 1st January 2013, we strongly support the elimination of any free allocation across the EU to the power generation sector. In the absence of full auctioning across the Scheme, we would like to see the EU move to instructing a minimum level of auctioning in all Member States in Phase III, and the UK government targeting auctioned allowances on the power generation sector..." (Centrica)*

In contrast, several other companies were more reluctant to support such improvements to the EU ETS and so were given low scores:

*"... auctioning can only be part of the solution to allocation and approaches such as grandfathering with updating or fuel and technology specific benchmarking will be required to avoid discriminating against particular technologies. The auctioning quota should be maintained as an EU-wide limit on the maximum level that Member States can apply..." (RWE npower)*

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<sup>6</sup> <http://www.defra.gov.uk/corporate/consult/climatechange-bill/ria.pdf> (Page 27, draft Climate Change Bill, March 2007).

## **Issue 5) Imported Clean Development Mechanism (CDM) and Joint Implementation (JI) credits and the EU ETS**

**Question 5: For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported CDM/JI credits? Would your company support rules to set quantitative limits on the use of CDM/JI credits, or to set qualitative criteria on the types of project which should be eligible?**

WWF-UK believes the EU ETS is the most ambitious and innovative intergovernmental policy so far aimed at reducing greenhouse gas emissions. Europe is leading the way in implementing market based, cost-effective solutions to a global problem. The ETS covers nearly half of Europe's CO<sub>2</sub> emissions, so its success is vital to deliver the EU's targets under the Kyoto Protocol. A successful ETS could also form the cornerstone of future global agreements to fight climate change.

However, WWF-UK believes that more stringent quantitative and qualitative limits must be placed on access to CDM and JI project credits in the EU ETS in order to improve the environmental robustness and effectiveness of the scheme. Without such action, there is a risk that companies in the EU will rely heavily on imported credits to meet their targets – while continuing to invest in infrastructure that will lock Europe in to a high-carbon future. Indeed, the ETS Directive requires that use of imported credits should be “supplemental” to domestic action.

Against this WWF-UK policy position, only Scottish Power's response was awarded a high score (7 out of 10) as it recognised the need for some limits on project credits by suggesting a 70/30 split in domestic/imported effort. E.ON UK and RWE npower did not recognise the importance of limiting such credits in the EU ETS and so were only awarded scores of 2 out of 10. The following quotations illustrate these contrasting views:

*“... Yes, a reasonable split would be 70/30 (domestic/imported) up to 2020...” (Scottish Power)*

*“... JI/CDM should not be limited by % volume but by tight and rigorous accreditation and validation. If they are a genuine cost effective way to reduce CO<sub>2</sub> emissions, then they should be included...” (E.ON UK)*

## **Issue 6) UK household energy demand reduction and energy services**

**Question 6: Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is seriously considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the policy from the current measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

WWF is concerned that the government's promise of a "step change" in energy efficiency has yet to emerge. The case for urgent action to get the UK's emissions on a sustained downward path is now overwhelming – and so an aggressive policy to deliver the huge potential for energy efficiency must be an absolute priority. WWF-UK believes that the level of ambition set out in the 2007 energy white paper, for activity from 2011 to "at least be equal to that under EEC3"<sup>7</sup>, delivering a minimum of 3-4 MtC by 2020, is the bare minimum that should be achieved.

WWF-UK believes that the time has come to refocus policy on reducing absolute levels of energy consumption. We welcome Defra's vision to encourage "businesses to become increasingly about selling energy services rather than just units of energy", and for suppliers to remain central to the delivery of household energy and carbon savings in its proposals for a new supplier obligation from 2011.

For a company to be deemed 'progressive', WWF-UK was seeking clear support for a 'step change' in delivery of significant energy demand reductions in the household sector, as well as efforts to transform all or part of its business model into energy services.

The scores for the company responses to this question fall across a broad range of 1 to 7 out of 10, with SSE awarded the highest score and RWE npower awarded the lowest. SSE agreed with the proposition that the energy services business model is a good way to reduce household energy demand. RWE npower gave a more negative response, but did not offer any proposals for an alternative solution.

*"... Yes, we agree with the proposition that energy services model is a good way to reduce household energy demand..." (SSE)*

*"... the imposition of a supplier obligation will not deliver the desired results unless it is facilitated by an appropriate policy framework accompanied by other measures to change customer behaviour. ... In the relatively recent past it has proved difficult even to give away energy efficiency products to some customers..." (RWE npower)*

#### **Issue 7) Company carbon disclosure**

##### **Question 7: Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

WWF-UK believes more transparency is needed from all companies on the carbon emissions their activities are responsible for, and we are calling for the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK. WWF-UK believes this will then provide more accurate and comparable data to enable investors to appropriately and sufficiently invest in low carbon companies in the future.

Also, in order to ensure that the UK makes a fair contribution towards the international effort to stay below 2°C warming, WWF-UK believes the Climate Change Bill needs to introduce

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<sup>7</sup> The third phase of the energy efficiency commitment (EEC3) is now known as the carbon emission reduction target (CERT) and has been proposed and developed by Defra.

enabling powers for the government to compel companies to disclose direct CO<sub>2</sub> emissions, and to work towards agreement of mandatory standards for disclosure of their indirect emissions.

The scores for responses to this question are split in two, with three company responses awarded high scores and others awarded rather low scores. In WWF-UK's view a power company could be deemed 'progressive' if it supported the introduction of mandatory carbon disclosure. Centrica scored very highly, 9 out of 10, as it did support such mandatory carbon disclosure:

*"... We support the mandatory disclosure of relevant carbon indicators in annual company reporting procedures in the UK..." (Centrica)*

However, EDF Energy was particularly vague and non-committal to mandatory carbon disclosure and so was only awarded a score of 1 out of 10:

*"... EDF Energy has supplied, and will continue to improve, information on our carbon emissions as a vital part of our efforts to tackle climate change..." (EDF Energy)*

#### **Issue 8) UK renewable energy targets**

##### **Question 8: Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK's electricity by 2020, with higher targets set for 2025/2030?**

The UK has a vast potential renewable energy resource, particularly in wind and wave power. However, the government is badly off track on long-standing targets for renewables to deliver 10% of electricity in 2010 and 20% in 2020.

WWF-UK strongly supports the speedy and large-scale uptake of renewable energy and has called on the government to bring forward robust policies that will ensure delivery of the existing targets under the Renewables Obligation. Moreover, in March 2007, EU heads of state agreed a binding target for 20% of Europe's primary energy needs to be met from renewable sources by 2020. This commitment has yet to be shared out among Member States, but is likely to require a dramatic but achievable increase in the ambition of the UK's renewable electricity targets – in the order of 30-35% by 2020. WWF-UK believes that this new EU target sets an ambitious but realistic benchmark against which the adequacy of domestic policies must now be measured.

For a power company to be deemed 'progressive', we believe it must agree with and support the introduction of more ambitious renewables targets in the UK.

Scottish Power gave unambiguous support for the need to exceed the existing UK target for 2020, and SSE was supportive of the new EU 2020 renewable energy target – as a result, they were awarded scores of 7 and 8 out of 10.

*"...We would prefer that targets were placed on all energy sectors rather than simply continuing the focus on the electricity sector. The EU renewables target is a welcome step in this direction..." (SSE)*

EDF Energy was not supportive of more ambitious targets and so was given a score of 1 out of 10:

*“... We support the Renewables Obligation (RO), provided that it remains the most cost efficient way in which to deliver targets for renewable energy. We believe that the RO targets beyond 2015 should only be increased following a full review in 2012, and if there is good evidence that new build will come within reach of the existing target...” (EDF Energy)*

#### **Issue 9) New nuclear power**

**Question 9: Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any changes to the current market structure and regulation is needed to encourage new nuclear build?**

The 2003 Energy White Paper conspicuously failed to support the case for new nuclear build in the UK. It concluded that the economics at the time made nuclear an “unattractive option for new, carbon-free generating capacity and there are also important issues of nuclear waste to be resolved.”

WWF believes that this was, and continues to be, the right conclusion for a sustainable low-carbon future. Despite subsequent increases in fossil fuel prices, the economics of nuclear remain extremely speculative. Moreover, progress towards a “resolution” of the radioactive waste problem is slow – and in danger of being fatally undermined by any decision to proceed with new build. A range of studies and scenarios have concluded that the government’s long-term CO<sub>2</sub> reduction targets can be met without nuclear power, including work by the Royal Commission on Environmental Pollution and the Tyndall Centre for Climate Change Research. Hence, WWF-UK is opposed to the building of new nuclear power stations in the UK.

For a power company to be deemed ‘progressive’ in this exercise, WWF-UK was seeking an explicit statement that it is not in favour of, and will not be investing in, new nuclear power in the UK.

However, all the company responses to this question scored low, with 3 out of 10 being the highest score. Disappointingly, no company ruled out new nuclear power. Indeed, WWF-UK understands that some companies may be keeping their options open mainly because they are expecting the government to tilt the economic playing field in favour of nuclear power in its current consultation on the issue. We note that for many years there has been nothing – other than unattractive economics – to prevent a company from coming forward with plans for new nuclear build.

EDF Energy and E.ON UK were awarded a very low score of 1 out of 10 as they are clearly supportive of new nuclear power in the UK, and their responses failed to recognise the many negative impacts, economic and environmental, such development would have on the rest of society:

*“... We believe that a diverse mix of energy sources, including nuclear, is required if we are to meet the challenges set out in the Government Review, to provide secure and affordable energy*

*supplies and reduce carbon emissions. ... We are interested in taking part in a new nuclear build programme. There are five areas in which potential investors in nuclear need clarity: planning, licensing, sites, waste and decommissioning and carbon prices... ” (EDF Energy)*

*“... We believe that new nuclear plant can contribute economically to the UK’s CO<sub>2</sub> emission reduction targets, offsetting the upward effect on emissions of the closure of existing plants. In addition, in an era of high fossil fuel prices, new nuclear plant can contribute to a diverse and secure energy supply, and avoid undue reliance on gas. We are interested in investment in new nuclear plants....We would expect investment in new nuclear plant to be a credible economic option given current expectations of fossil fuel prices and confidence at the time a final investment decision is taken in a sustained value for carbon emission abatement...” (E.ON UK)*

#### **Issue 10) UK Carbon Capture and Storage (CCS)**

**Question 10: Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

WWF believes that as long as coal plays a major role in the UK’s electricity energy mix then the goal of achieving a low carbon economy will continue to elude us. CO<sub>2</sub> emissions from the UK power sector have risen by 15% since 1997 because of increased electricity demand and a switch back from gas to coal – and the recent rise in gas prices means that proposals for new coal-fired stations are now coming forward.

WWF-UK is calling for new regulations to ensure that no new coal-fired plant is built in the UK unless fitted with CCS technology from the outset. As a minimum, a new coal-fired plant must have proven finances in place and ring-fenced for the addition of CCS within the first five years of operation. WWF-UK is also calling for action at UK and/or EU level to set a deadline for CCS retrofits to existing base-load coal-fired plant. We are concerned that relying purely on the carbon price signal from the EU ETS will be insufficient to prevent investment in a new generation of coal stations that will lock us in to a high emission future.

In light of this policy position, for a given power company in this survey to be deemed ‘progressive’, we believe it must explicitly state that it supports such new mandatory CCS regulation.

Centrica was awarded the highest score of 6 out of 10, as it recognised the risks of investing in coal-fired plant in a future carbon-constrained world.

*“... The carbon price is now a major factor in our investment decisions, and we believe that any investment in coal without carbon capture will be increasingly risky. We therefore have no current plans to invest in coal generation without carbon capture...” (Centrica)*

In contrast, SSE, Scottish Power and E.ON UK were awarded scores of 1 and 2 out of 10 as they did not rule out the building of new, unabated coal-fired plant in the UK.

*“... No, at this stage we believe it is a step too far to prohibit the building of new coal plant that does not have CCS...” (Scottish Power)*

*“... No, we do not support mandatory CCS for new power plant. We consider CCS to be an emissions reduction option that should be incentivised by the carbon price signal coming from the EU ETS...” (SSE)*

## CONCLUSIONS

This short survey exercise has yielded several findings of interest regarding the similarities and differences between the six power companies’ public lobbying positions on 10 key energy policy issues. It also shows some striking parallels with Innovest’s separate benchmarking study into the companies’ performance on managing their own carbon emissions.

None of the six power companies achieved a high score (i.e. 70% or greater). WWF-UK believes this shows that all the companies still have some way to go before they can be regarded as a wholly progressive clean energy company working to deliver a sustainable low-carbon UK economy. This is disappointing, as it is widely acknowledged that the power sector – which currently accounts for 30% of the UK’s CO<sub>2</sub> emissions – will need to decarbonise entirely by mid-century across Europe and in other industrialised countries.

The highest overall scores were achieved by Scottish & Southern Energy (SSE) and Centrica, with 51% and 48% respectively. SSE was awarded a relatively consistent mid-high score across most of the 10 questions. Centrica’s score was more variable, but the company scored very well on its approach to the EU Emissions Trading Scheme and mandatory reporting of carbon emissions. Scottish Power also performed well in its support for more ambitious renewable energy targets.

However, EDF Energy and RWE npower achieved much lower scores. RWE npower showed little support for EU or UK leadership through more ambitious greenhouse gas targets, while EDF scored poorly on its support for new nuclear power, lack of support for new renewable energy targets and opposition to mandatory carbon disclosure.

On the Climate Change Bill, WWF-UK was disappointed to see little recognition of the scientific consensus that the government’s proposal for a 60% reduction in the UK’s emissions by 2050 is insufficient to protect the climate. However, we welcome SSE’s tentative support for a tougher 80% target should other countries follow suit.

On nuclear power, the study confirms that all six companies are refusing to rule out investment in new reactors. WWF-UK interprets this as a desire by many companies to keep their options open should the government tilt the economic playing field towards new nuclear capacity as a result of its current consultation. EDF Energy and E.ON UK were the only companies that explicitly stated their desire to invest in new nuclear build.

The overall ranking displays a significant correlation with the findings of Innovest’s separate benchmarking report. Innovest found that Centrica had the best management approach towards

delivering energy efficiency, while Scottish Power was a leader on pushing forward with investment in new renewable energy sources and good corporate governance. SSE and E.ON UK also emerged fairly well from Innovest's assessment. EDF and RWE npower emerged as the poorest performers in both studies.

### **About WWF-UK**

WWF-UK is part of the WWF global network. Its mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with the nature by:

- conserving the world's biological diversity
- ensuring that the use of renewable resources is sustainable
- promoting the reduction of pollution and wasteful consumption.

### **Report author**

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### **Acknowledgements**

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# Appendix 1 – Copies of the full responses WWF-UK received from each of the six power companies that completed the short survey

## CENTRICA'S RESPONSE TO WWF-UK'S SHORT SURVEY

**Q1) There is a debate in the context of the UN climate change negotiations and the G8 over the level of ambition that should guide future international efforts to combat climate change. What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

We recognise that climate change is the biggest single environmental issue the world has to face both today and in the future. We note the new report earlier this year from the Intergovernmental Panel on Climate Change (IPCC) which has, for the first time, concluded that rising temperatures caused by human induced climate change over the last 30 years have already had an impact on people and the environment. We accept the validity of the science behind that report.

We also note the assessment highlighted in the Stern Review that the risks of the worst impacts of climate change can be substantially reduced if greenhouse gas levels in the atmosphere can be stabilised between 450 and 550 ppm CO<sub>2</sub> equivalent. The implication of that is that stabilisation in this range requires global emissions to be at least 25% below current levels by 2050. We accept the validity of this argument.

Our view is that climate change is happening, and that human activity is contributing to it, so we therefore need to develop policies and action plans aimed at first slowing and, eventually, stabilising the processes which are causing the change.

Whilst it may be difficult to achieve, we consider that a gradual slowing and then reduction of global greenhouse gas emissions is possible. We are committed to playing our part in that process, and to actively supporting Government policy and action plans aimed to achieve this.

As a leading energy company we are taking steps to help reduce our overall impact on climate change both directly through our own business activities and also indirectly through supply chain management and by helping our customers to use energy more efficiently.

**Q2) In March 2007, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012. The EU also agreed a binding target for renewable energy to supply 20% of Europe's primary energy needs by 2020. What are your company's views on these objectives?**

We consider that the EU should take a leadership position on climate change, and that there are competitive advantages in moving early to a low-carbon economy. In order to incentivise the necessary step-change in investment in low-carbon goods and services, a clear policy framework that establishes a long-term carbon price and therefore a long-term value in reducing emissions is required.

Clear and binding emission reduction targets in the EU underpin this framework by giving industry the confidence to invest in more expensive lower-carbon technologies and services. We therefore welcome the binding and unilateral EU target to cut greenhouse gases by 20% by 2020, and fully support the EU objective of a 30% reduction by the same year if international agreement can be found.

We support the EU's objective of achieving significantly higher levels of renewable energy in the EU overall energy mix. We are concerned, however, that the 20% target is extremely challenging in the timescale identified. Consideration needs to be given to the capacity of both industry and the planning system to deliver, and the integrity of grid networks.

If a policy of high levels of renewables across Europe is pursued, it will be important to understand the interaction of policy mechanisms designed to achieve this with the EU ETS. In particular, we would be keen to ensure that carbon savings achieved through higher levels of renewable energy do not undermine carbon savings that can be made through investments in non-renewable but low-carbon technologies including clean coal and micro CHP boilers.

**Q3) The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK's total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

The draft Climate Change Bill sets out emission reduction targets for the UK. In order to reach the challenging targets identified, we believe that every sector will have to reduce carbon emissions, and that the energy sector can not meet targets alone. In that context, we do not have a view on the potential for non-energy sectors to reduce emissions, and therefore can not comment on the scope for carbon emission reductions across the whole economy.

We do believe, however, that strong and legally binding targets are necessary to underpin a framework that will create a visible carbon price, necessary to incentivise investment in low-carbon technologies and services. We also consider that the UK can gain significant competitive advantage by moving early to a low-carbon economy and that the UK should take a leadership role in setting domestic emission reduction targets.

We have recently established a new business unit to lead our drive to offer green, low carbon products and services to customers who want to manage their impact on climate change. This business is competing in a rapidly growing market, advising customers on how to make their homes and businesses greener, and supplying products and services to facilitate this.

We already have the lowest carbon intensity of any major UK energy supplier and we are looking to maintain this position in the future through significant investment in renewables and clean coal.

**Q4) For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

We believe that the free allocation of allowances to sectors which are able to recover the cost of allowances through their received price is the Scheme's fundamental flaw, and have lobbied to mitigate the negative competitive distortions caused by this. There is clear evidence that the full

opportunity cost of carbon established by the EU ETS is passed through to the price power generators receive via the wholesale market, and we would therefore support full auctioning of allowances to this sector at least.

We recognise that some free allocation may be necessary in the short-term to those sectors facing international competition that is not similarly carbon-constrained, in order to prevent competitive distortions. If and when we progress to a future in which all industry globally is similarly carbon-constrained, the rationale for free allocation will be removed.

In the first two phases of the EU ETS, non-free allocation of allowances by Member States is restricted to a maximum of just 5% and 10% respectively. No auctioning was undertaken by the UK government in Phase I and an auction level of 7% has been announced for Phase II, which will be taken from the free allocation that would otherwise go to the electricity generation sector.

As this sector faces no international competition and carbon costs can be, and are, recouped through the received price, we agree that this 7% should be taken from the generation sector. We would like to see the maximum 10% auctioned, and, ideally, a significant increase in the proportion of auctioning in Phase II allowed, although we recognise that this will require EU agreement.

From 1st January 2013, we strongly support the elimination of any free allocation across the EU to the power generation sector. In the absence of full auctioning across the Scheme, we would like to see the EU move to instructing a minimum level of auctioning in all Member States in Phase III, and the UK government targeting auctioned allowances on the power generation sector.

**Q5) For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported Clean Development Mechanism (CDM) and Joint Implementation (JI) credits? Would you support rules to set quantitative limits on the use of CDM/JI credits, or to set qualitative criteria on the types of project which should be eligible?**

We understand and accept that a balance needs to be struck between effort at home and abroad, and that the UK needs to show some leadership in finding real carbon cuts at home. Nevertheless, project credits have an important role to play in delivering global emission cuts which should be recognised.

Ideally, directly linking the EU ETS with other emission schemes outside the EU will help to deliver emission reductions at the lowest cost to the global economy, and will aid development of a more liquid market. This should only happen, however, when other schemes are established, and when the principles behind those schemes as well as their operation allow a direct linking.

In the absence of such direct linkages, project credits from the CDM and JI markets can act as important linking mechanisms and help to ensure that the EU ETS is not operating in a vacuum from the global economy.

We believe that projects developed under the Clean Development Mechanism deliver real and enduring carbon emission reductions in developing countries which currently do not have any emission reduction targets and, in the absence of legally-binding targets, open a pathway to Kyoto for many developing countries.

There is also substantial potential for technology transfer from these projects to other countries whether directly covered by the EU ETS or not. Allowing the use of credits for compliance under the EU ETS supports these project streams, supports innovation in UK business, and allows reductions to be made at lowest cost.

The UK is emerging as a market leader in the financing of these kinds of projects. Imposing low limits on the use of credits within the UK damages the ability of UK companies to invest in emission-reducing projects in the developing world, and might check the development of this important new market. We accept, however, that a balance needs to be struck between effort at home and abroad and that the precise balance should be kept under review. Given this balance will depend on a number of factors including the speed of development of new technology and the availability of good-quality projects, we do not believe that identifying a precise balance is helpful.

To protect the credibility of the EUETS and other international emissions trading, it is imperative that projects are subject to rigorous accreditation to ensure minimum quality standards are met. Within the CDM this role is carried out by the UNFCCC's CDM Executive Board and we are confident that this system is providing the necessary robust and rigorous assessments of proposed projects.

**Q6) Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the current policy from a measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

The Energy Efficiency Commitment (EEC) has been extremely successful in delivering energy efficiency measures to the domestic sector. It is, however, very much an input, as opposed to output, based scheme. It is also effectively reliant on a limited range of measures to deliver the programme.

Government is currently consulting with industry on the scope of the programme from 2008. We would like to see serious consideration given to enhancing EEC to make it a more flexible and efficient mechanism, capable of transforming domestic household energy consumption. This should include the separation of the social and environmental objectives, recognising and rewarding behavioural change, encouraging investment in, and inclusion of, new technologies, and a longer-term move to a wider carbon traded market, allowing greater flexibility to trade carbon.

Consideration of the scheme post 2011 is at an early stage and we are keen to work with stakeholders on the detailed design of the scheme after this date. We support a more flexible, outcome-focused approach to delivering greenhouse gas abatement in the household sector, but

would stress the importance of a sensible transition from existing programmes to any post-2011 obligation.

We believe that in order to be sustainable in the longer-term, reducing emissions in the domestic sector needs to be consumer-led, rather than pushed through mandatory reduction targets. A balance needs to be found between customer-pull and legislative-push.

The imposition of targets in this sector without consumer understanding and support to reduce emissions could be counter-productive. We believe that consumer pull for the creation of low-carbon energy services does exist, and we have responded with the creation of a new business unit specifically to lead our drive to offer green, low carbon products and services to customers who want to manage their impact on climate change.

Any suppliers' obligation that is introduced will need to establish clear objectives at the outset. Most notably, the industry response may change depending on whether it is primarily a measure to reduce greenhouse gases through a reduction in carbon intensity, or whether the primary purpose is to reduce energy demand.

**Q7) Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

We support the mandatory disclosure of relevant carbon indicators in annual company reporting procedures in the UK. There is clearly a growing expectation among stakeholders that companies should publish details of their carbon emissions and it would there be sensible to formalise this practice, following consultation with relevant parties. In line with the revised Companies Act, we published information on our carbon footprint and carbon intensity in our 2006 Annual Report and Accounts.

We are also a participant in the Carbon Disclosure Project (CDP) and provide extensive information on carbon emissions and environmental performance to agencies that conduct research on behalf of ethical investment funds, such as Dow Jones Sustainability Indexes and FTSE4Good Indices.

Appropriate and meaningful indicators will need to be developed for each industrial sector to ensure consistency and comparability. It would be important for any such procedure to be developed with due regard to existing mechanisms, including CDP, socially responsible investment models and the emerging ISO14064 standard. The procedure would also need to take account of the existing requirements placed on companies under the EU Emissions Trading Scheme to ensure congruity, avoid duplication and protect commercial confidentiality.

**Q8) Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK's electricity by 2020, with higher targets set for 2025/2030?**

The Energy White Paper envisages a policy framework designed to encourage the development of renewable electricity, including an aspiration that 20% of electricity will be from renewable sources by 2020. This White Paper consultation process, however, takes place against a wider policy context in which the EU has agreed that 20% of all primary energy will be delivered from renewable sources by 2020. The full impact of this EU target on the UK energy sector will

not be understood for some time, but may result in a firmer or even a higher renewable electricity target for the UK.

We are a leading investor in the development of renewable technology and now operate two wind farms, one onshore and one offshore. As part of a £750million renewable investment programme we are building two more offshore wind farms in the Greater Wash, which we expect to be operational in 2008, and will take a 50% share in an onshore wind farm in Scotland, also already under construction. We are also seeking consents for a further three offshore wind farms.

We support demanding targets for the development of renewables and believe that renewables provide part of the solution to the challenges of both climate change and security of supply. Establishing an appropriate support mechanism for the development of new projects will be crucial to meeting these targets and in that context, we are in favour of government proposals to band technologies within the RO. We believe that this is the most efficient way to bring on the next generation of renewable technology without undermining investor confidence. Under a banded RO, suppliers will remain obligated to deliver renewable generation, thus encouraging their participation in renewables.

In addition, further barriers to development will need to be removed and the Energy White Paper provides an important opportunity to set the framework for this also. Most notably, issues around planning and grid connection, and associated costs need to be addressed, as well as the increased difficulty and cost in load balancing against increasingly large volumes of variable renewable output. Finally, we note that there is currently a worldwide shortage of large-scale wind turbines, limiting industry ability to meet high demands, at least in the short-term.

Unless progress can be made quickly on all these fronts, we consider that the 20% renewable electricity target by 2020 will be difficult to achieve.

**Q9) Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any change to the current market structure and regulation is needed to encourage new nuclear build?**

We see a potential generation gap of up to 15GW by 2015 if new generation capacity is not built to replace retiring plant. Given the comparatively lengthy timescales in bringing new nuclear online, this gap will have to be filled with renewables, gas and cleaner forms of coal generation.

Beyond 2015, nuclear may play an important role in the generation mix due to its low carbon intensity, and contribution to ensuring diversity in the UK's generation mix. A number of uncertainties remain about the process of new nuclear build, however, specifically the planning process, licensing and long-term waste management, as well as questions over public acceptability.

As the UK's largest household energy supplier with the lowest carbon intensity from our power portfolio, we have to look at the short, medium and long-term needs of our customers. We do not believe that we should take a decision now to never invest in any given technology. The debate around nuclear is still evolving, but if the current issues we have around planning,

licensing and long-term waste management can be addressed, and public acceptability of this technology is established, we see a potential role for nuclear in the future.

If that proves to be the case, we would consider both offtake agreements and minority equity investments in new nuclear plants. We have finished a contract with British Energy to buy nuclear electricity, and this is a role we would consider again in the future.

**Q10) Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

We believe that the most efficient way to drive investment decisions towards low-carbon technologies is through ensuring that the value of carbon is incorporated into the life-time economics of new generation. We consider that the most important driver in this regard is a political commitment to an emissions trading scheme into the future, and a corresponding commitment to increase the price of carbon over time by decreasing the number of carbon allowances in existence in subsequent phases.

The carbon price is now a major factor in our investment decisions, and we believe that any investment in coal without carbon capture will be increasingly risky. We therefore have no current plans to invest in coal generation without carbon capture.

We have invested in the development phase of a clean coal project which, if built, would be the UK's first complete clean coal power station, building both a cleaner IGCC generation plant and carbon capture and storage technology at the same time. We are confident that the technology we are proposing for both the IGCC and carbon capture and storage can be made to work. The technology, however, is around 2-3 times more expensive than building a traditional gas plant, and additional support mechanisms will be needed for the project to continue to build.

In the long term we believe that the primary support mechanism for clean coal with carbon capture and storage should be a carbon price established through the EUETS. Given the political uncertainty surrounding the scheme going forward, and the current Phase II price for carbon, a bridging mechanism may well be required in order to bring projects forward sooner rather than later. In addition, further support is likely to be needed to reflect first-of-kind integration risks. We are pleased that the government has committed to a competition in November 2007, and are confident that our project meets the criteria set out in the Energy White Paper for support for a demonstration plant.

We would highlight that clean coal generation through the use of supercritical technology is not the same as carbon capture and storage technology. Supercritical technology, while cleaner than technology at existing coal plants, does not represent the cleanest form of clean coal generation without a carbon capture and storage solution, and would still be nearly four times more emitting than IGCC technology with carbon capture. It should also be noted that several clean coal projects proposed in the UK have to date only committed to their plants being "capture ready", rather than developing an integrated carbon capture and storage solution at the same time as the new generation plant.

Almost any generation plant can be altered to capture carbon. In order for a plant to be defined as capture ready, we consider that sufficient additional land needs to be available for the infrastructure required, and a viable storage solution and route need to be identified. We believe that government support for clean coal technology should be limited to those plants actually implementing carbon capture and storage, rather than capture-ready.

#### EDF ENERGY'S RESPONSE TO WWF-UK'S SHORT SURVEY

**Q1) There is a debate in the context of the UN climate change negotiations and the G8 over the level of ambition that should guide future international efforts to combat climate change. What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

We are fully committed to helping to tackle climate change and we share this commitment with our parent company. We support the UK Government's ambition to move progressively to a low carbon economy and to play a leading role in the global effort to address climate change. In our view, the scientific evidence presented to date justifies action to mitigate climate change by reducing greenhouse gas emissions.

We strongly support the need for international long term policy framework that incorporates both developed and developing countries. We believe that international commitments covering at least the next 25-30 years are fundamental to providing countries and industry with the clarity and political certainty to secure the necessary capital funding to deliver the UK Government's aspiration for mitigating climate change.

We believe that these international commitments should be based on the scientific consensus and ultimate objective of stabilising greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system (safe stabilisation levels currently deemed to be in the 450-550 ppm range). We accept the scientific consensus that is emerging on these issues and are committed to playing our part in mitigating climate change.

**Q2) In March 2007, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012. The EU also agreed a binding target for renewable energy to supply 20% of Europe's primary energy needs by 2020. What are your company's views on these objectives?**

We support the European Commission's (EC's) proposals for a legally binding target on member states to reduce carbon dioxide (CO<sub>2</sub>) emissions by at least 20% by 2020 (on 1990 levels) and rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012.

The EC's proposed binding target for 20% of primary energy (not just electricity) from renewable sources by 2020 is an extremely challenging target and it is not yet clear what will be required of the UK electricity generation sector. We believe that the action undertaken to meet the target must be focused on those sectors and technologies capable of achieving the necessary cuts most economically.

The broader ramifications of adopting a strong target that relies substantially on biofuels are unclear and further consideration must be given to the sustainability aspects of biofuels.

**Q3) The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK's total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

We support the Government's proposal to set a long term legal target for the reduction of CO<sub>2</sub> emissions through domestic and international action by 60% by 2050 and a further interim legal target for 2020 of 26-32%. This framework provides the opportunity to create a greater level of certainty for UK businesses on the level of effort required and therefore has the potential to improve the current situation in which there is no long-term certainty for any sector. However, to deliver the required investment from UK businesses the framework must deliver clarity on the balance between domestic emissions reduction in the UK and financial reductions purchased from within Europe (e.g. via the EU ETS) and internationally.

Although we view the 2050 60% CO<sub>2</sub> emissions reduction target as being currently appropriate, it may need to be made more stretching as confidence in the outputs of climate models increase and international burden sharing agreements are negotiated. The Climate Change Bill provides for revision of the 2050 target if necessary – something that we support provided sufficient notice is given for the change and if the change does not undermine investment in low carbon technologies.

We support the Government's proposed system of five year carbon budgets established for several periods ahead. Five year budget periods are robust to short term emissions' volatility and smooth annual variations arising from weather, fuel price movements, etc. They are also consistent with the current international agreements (i.e. the Kyoto compliance periods), EU ETS timeframes and European targets.

We are opposed to annual CO<sub>2</sub> targets and believe they will create an environment in which Government and stakeholders focus on short-term reduction objectives rather than on long term drivers that will deliver a low carbon economy. A short-term, reactive approach will create investor uncertainty and potentially increase the costs of mitigation.

**Q4) For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

We support 100% auctioning of allowances in the future. We believe that all business activities must be exposed to the full costs of greenhouse gas emissions to encourage them to take appropriate action on climate change. In our view this should happen sooner rather than later. Furthermore we believe that new installations should not receive any free allowances. The retention of a New Entrant Reserve erodes the signal for investing in low-carbon technologies.

**Q5) For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported Clean Development Mechanism (CDM) and Joint Implementation (JI) credits? Would you support rules to set quantitative limits on the use of CDM/JI credits, or to set qualitative criteria on the types of project which should be eligible?**

We support the proposal to adopt a target based on the “net UK carbon account” principle. Purchased EUA, CDM and JI credits all have a role in reducing emissions at least cost and allow the carbon market to operate efficiently.

However it is also essential that the Climate Change Bill provides a UK Government view on the level of ‘supplementarity’ that it deems acceptable (and therefore establishes a minimum level of domestic abatement required). Without this clarity there is a risk that industry will simply adopt a strategy of purchasing carbon credits from overseas rather than making physical CO<sub>2</sub> abatement investments in the UK.

In determining its view on the level of purchases of allowances from other countries it will allow, the UK Government must consider the financial risks that this creates. We have seen a significant divergence between actual CO<sub>2</sub> emissions and targets for the UK sectors that participate in the EU ETS. In Phase 2 of the EU ETS the UK electricity sector could be required to purchase 70 million allowances per annum to comply with its targets. The costs for compliance will eventually feed into the UK economy and will expose the UK to carbon price shocks driven by volatility in carbon markets in much the same way that it is exposed to sudden oil and gas price movements. We therefore believe it is important to keep the gap between actual emissions and targets manageable levels by ensuring that domestic abatement tracks future abatement targets.

Furthermore, being too dependent on emissions reductions in other countries and failure to reduce emissions domestically will undermine the UK Government’s credibility and its ability to lead on climate change action and policy development.

**Q6) Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the current policy from a measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

We are keen to work with Government to build a workable scheme and have identified a number of key principles. We believe that any future scheme should build on the success of the EEC initiatives and any transition from EEC needs to be managed with care. The objectives need to provide clarity on whether the aim is around energy demand reduction or greenhouse gas abatement and should not attempt to address parallel issues such as fuel poverty which requires a separate set of actions.

We support the proposition that the energy supply market needs to shift to a model based on provision of energy services. We recognise the challenge that this represents in terms of consumer acceptability. An essential requirement for success is the need to change customer behaviours and attitudes to drive customer pull for the services that might be provided.

During the transition period, we believe that some form of hybrid arrangement that maintains the benefits of the proven EEC model for insulation improvements coupled with a new mechanism for emerging technologies and a focus on consumer behaviour is worthy of further consideration.

We intend playing an active part in working with Government officials to develop effective programmes for the future and are currently working to redefine our own business model.

**Q7) Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

We believe all companies should contribute to reducing carbon emissions, in all sectors of the economy. It is only by engaging people both in their homes and at work that we will meet our carbon emission reduction targets. EDF Energy has supplied, and will continue to improve, information on our carbon emissions as a vital part of our efforts to tackle climate change.

**Q8) Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK's electricity by 2020, with higher targets set for 2025/2030?**

The current Renewables Obligation for 2020 is set at 15.4% of electricity sales. As outlined in the Energy White Paper, Government intends to increase this. Recent European developments indicate that a mandatory target of 20% primary **energy** consumption at a European level is likely. The UK's share of this target is, as yet unclear, as is the percentage that would be required from the UK electricity generation sector.

We support the Renewables Obligation (RO), provided that it remains the most cost efficient way in which to deliver targets for renewable energy. We believe that the RO targets beyond 2015 should only be increased following a full review in 2012, and if there is good evidence that new build will come within reach of the existing target. If the targets are raised then the buyout price should remain indexed to RPI to provide the necessary funding in the mechanism to deliver new build.

**Q9) Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any change to the current market structure and regulation is needed to encourage new nuclear build?**

We believe that a diverse mix of energy sources, including nuclear, is required if we are to meet the challenges set out in the Government Review, to provide secure and affordable energy supplies and reduce carbon emissions. We are interested in taking part in a new nuclear build programme. There are five areas in which potential investors in nuclear need clarity: planning, licensing, sites, waste and decommissioning and carbon prices.

**1. Planning**

Key to speedy planning decisions will be a strong and clear statement of need based on broad political and public support. In this context it is essential that there is a clear and unambiguous statement of the need for new nuclear in the long term energy mix of the UK.

**2. Licensing**

There needs to be a pre-licensing process for the licensing of nuclear designs. This will establish the acceptability of a new design of nuclear power station early in the process, so that all acceptable designs can be considered at the later stages when investors look at specific sites.

### 3. Sites

It is very likely that the best locations for the development of new nuclear in the UK will be alongside existing nuclear plants. There needs to be a clear process for making sites available to potential developers.

### 4. Waste

Clear and transparent funding arrangements are needed for waste and decommissioning. We will take full responsibility for decommissioning and will pay a fair share of the cost of storing future waste. We will work with government to establish the necessary mechanisms.

### 5. Carbon price

The fifth vital element in the decision to invest in new nuclear or any low carbon technology is the future of the carbon market. There must be confidence in a long term carbon price signal for long term investment. In the transition to a global carbon market the Government may need to take interim measures – we have proposed a contractual carbon price mechanism to provide greater certainty about the long term value of carbon. Such a carbon hedge would work alongside EU ETS and reinforce it.

**Q10) Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

We believe diversity is essential in electricity generation for security of supply. CCS provides an opportunity to retain coal within the generation mix, whilst minimising its climate change impact. The three most significant barriers to CCS at present are; high cost; technology; and regulatory uncertainty. A large scale demonstration and a clear regulatory framework governing the transportation and storage of CO<sub>2</sub> are required.

We support the development of carbon capture and storage and welcome UK Government's decision to sponsor at least one UK based CCS demonstration project with the vision of commercial availability of the technology by the year 2020. Target dates for introducing the technology should be ambitious and realistic: although the major elements of the CCS chain have already been used in other industries in a much smaller scale, major technical challenges remain, e.g. scaling up of capture technologies, reducing the efficiency penalty associated with CCS, establishing a transport infrastructure for CO<sub>2</sub> and demonstrating the viability of long-term storage.

We believe that the long term CO<sub>2</sub> price signal should stimulate investments in low carbon and carbon free technologies. Support for CCS is best delivered by a well-designed, transparent market that gives long-term visibility on allowance prices.

## E.ON UK'S RESPONSE TO WWF-UK'S SHORT SURVEY

**Q1) There is a debate in the context of the UN climate change negotiations and the G8 over the level of ambition that should guide future international efforts to combat climate change. What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

The ultimate objective for climate change policy must be to stabilise emissions of greenhouse gases as soon as possible and then deliver the largest reductions that can be agreed at the international level. We do not have an independent scientific capability to assess the required maximum level of temperature rise so we are likely to accept the prevailing international scientific consensus as expressed by the Intergovernmental Panel on Climate Change. This indicates that, if the global average surface temperature increases by more than 2°C above the pre-industrial level, the risks to people and the planet markedly increase. We therefore support the EU's objective of limiting global warming to no more than 2°C above pre-industrial levels. We understand that, to meet this objective, atmospheric concentrations of greenhouse gases have to remain well below 550 parts per million volume (ppmv) CO<sub>2</sub> equivalent.

**Q2) In March 2007, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012. The EU also agreed a binding target for renewable energy to supply 20% of Europe's primary energy needs by 2020. What are your company's views on these objectives?**

We support the fastest sustainable transition to a low carbon future. This transition can be made most rapidly if associated with the most efficient investment framework since economies will be able to bear the cost most readily.

We support the EU agreement on the basis that it will provide a legal basis for long term emissions reduction policies which will help companies and individuals to invest in low carbon technologies. Arguably, a deeper non-contingent reduction than 20% would have been desirable. However, some Member States have shorter-term economic priorities, and EU wide agreement is essential.

We hope that the agreement will lead to a Phase III of the EU ETS which will incorporate robust emissions caps over an extended period commensurate with investment timescales. We support the contingent nature of the higher target as it is important that the EU exerts leverage in international negotiations. However, the EU should not be too prescriptive on how other countries meet their obligations within any successor agreement, provided they are taking sufficiently effective action.

The EU has also agreed a statutory target of meeting 20% of total EU energy supply from renewable sources by 2020. This appears to be a very significant issue for the market and we are at an early stage of evaluating the implications including deliverability.

**Q3) The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK's total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

We support the proposed targets set out in the draft Bill consultation as those necessary to achieve the 2050 target of a 60% cut in the UK's CO<sub>2</sub> emissions compared to 1990 levels, although we are unclear what the precise basis of the proposed 2020 target range is and are open to alternative targets if there is new evidence to support them. The targets should reflect the UK's proportionate contribute to the global emission reductions necessary to achieve climate change policy objectives and the UK's desire to demonstrate international leadership. UK targets also need to be related to the framework of international action and a judgement about

their effects on the competitiveness of the UK economy. Effective leadership will only be achieved if the UK can demonstrate it can deliver ghg emission reductions and achieve continuing economic growth.

We also favour the proposed five year budget periods and the associated banking and borrowing arrangements on the basis that they provide an assurance of long term emission reductions while maintaining some flexibility to take account of variations in emissions arising from economic factors and natural influences, not least the weather.

**Q4) For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

The Government has confirmed its intention to auction, or otherwise sell, 7% of allowances in Phase II from the allocation to the large electricity producers sector. Allowances from closures and surplus allowances from the New Entrant Reserve will be auctioned or sold in addition to this, subject to an overall limit of 10%.

In future phases we advocate a move towards full 100% auctioning across all sectors. To tackle the challenge of climate change efficiently the reduction burden cannot be restricted to the power sector and must be shared equitably across all sectors. Ultimately the cost of carbon must be fully internalised by all emitters.

**Q5) For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported Clean Development Mechanism (CDM) and Joint Implementation (JI) credits? Would you support rules to set quantitative limits on the use of CDM/JI credits, or to set qualitative criteria on the types of project which should be eligible?**

JI/CDM should not be limited by % volume but by tight and rigorous accreditation and validation. If they are a genuine cost effective way to reduce CO<sub>2</sub> emissions, then they should be included. The use of imported CDM/JI credits enables technology transfer from developed to less developed economies and can help deliver global ghg emission reductions at least cost, if effectively monitored. It also acts as the vehicle to integrate high standards across international cap and trade schemes. However, the majority of emissions occur outside the traded sector and other measures of comparable effectiveness are needed here.

**Q6) Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the current policy from a measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

Yes. We want and are shifting to an approach where we provide customers with energy and the means to meet their energy requirements in the most economic manner. This needs a genuine customer focus and product design which customers want to buy and are therefore much more sustainable.

This approach should be supported by a combination of fiscal and other incentives on customers to help create demand and economic incentives on suppliers to encourage this approach. We support in principle a shift to an energy supplier obligation to replace the energy efficiency commitment scheme from 2012 on the basis that this will incentivise suppliers to work with their customers to reduce their total energy consumption through a combination of energy efficiency measures and advice, and structuring of tariffs. However, it is important that the wider social and other implications are fully addressed before introducing this approach.

**Q7) Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

Yes, certainly for companies above a given level of turnover.

**Q8) Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK's electricity by 2020, with higher targets set for 2025/2030?**

We support the existing framework of Government support for renewables which is aimed at achieving a 20% share of renewables in UK electricity supply by 2020. Our preference is to see low carbon investment to be increasingly driven by the carbon price delivered by the EU ETS as this will incentivise investment in the lowest cost low carbon technologies overall at least cost to the consumer. High renewables targets may have the related effect of depressing the carbon price and reducing investment in other low carbon options. We would not therefore necessarily support higher targets than 20% specific to renewables for 2025 or 2030, although that is not to say that this level of renewable supply is not achievable if renewables are an economic option. If it became clear that a substantive carbon price was not achievable, we would revisit this view.

**Q9) Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any change to the current market structure and regulation is needed to encourage new nuclear build?**

We believe that new nuclear plant can contribute economically to the UK's CO<sub>2</sub> emission reduction targets, offsetting the upward effect on emissions of the closure of existing plants. In addition, in an era of high fossil fuel prices, new nuclear plant can contribute to a diverse and secure energy supply, and avoid undue reliance on gas. We are interested in investment in new nuclear plants.

We would expect investment in new nuclear plant to be a credible economic option given current expectations of fossil fuel prices and confidence at the time a final investment decision is taken in a sustained value for carbon emission abatement. This does not require changes to the existing market structure or framework of economic or environmental regulation affecting the power industry beyond assuring a sustained value of carbon either through the EU ETS or some alternative approach during the period of a plant's operation.

Arrangements will need to be put in place for Government to accept ownership of and responsibility for spent fuel and intermediate level waste by the end of a plant's life, and the Government has indicated that it intends to establish, in legislation, 'arrangements to protect the taxpayer and ensure that energy companies meet their full decommissioning costs and full share of waste management costs.'

**Q10) Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

Carbon capture and storage has not yet been proven on a full commercial scale and the first priority is for the Government to support CCS demonstration as it has indicated it will do and to work to change the framework of international law to ensure that storage in sub-seabed geological formations is permitted. In our view, investment in CCS should then be determined by its economics within a framework of market-based environmental regulation which constrains the total level of emissions and incentivises generators and other emitters to reduce their carbon emissions by imposing a substantive carbon price. This enables the market to respond to the carbon price and reduce its overall level of emissions while taking into account other factors such as security and diversity of supply objectives. It is our intention to ensure that any new coal-fired plants we propose are designed with the availability of land and plant configuration which would facilitate the retrofitting of CCS, should this prove to be economic or required.

#### RWE NPOWER'S RESPONSE TO WWF-UK'S SHORT SURVEY

**Q1) There is a debate in the context of the UN climate change negotiations and the G8 over the level of ambition that should guide future international efforts to combat climate change. What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

We believe that carbon emissions reductions should be achieved through global and economy wide objectives to protect the competitive position of European industry and ensure policy goals on climate change are achieved at least cost for society as a whole.

**Q2) In March 2007, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012. The EU also agreed a binding target for renewable energy to supply 20% of Europe's primary energy needs by 2020. What are your company's views on these objectives?**

These objectives are extremely challenging, particularly given that the policy framework for delivery is not in place. It is likely that the burden sharing arrangements and associated legislative framework will take several years to put in place. This leaves relatively little time to deliver the necessary investment, given lead times for planning and construction, and constraints associated with the manufacturing capacity of technology suppliers. The fact that the renewables target is couched in terms of primary energy supply rather than electricity means that it is even more onerous. It is also unlikely that these targets are aligned with the most cost-effective way of delivering GHG emission reductions.

**Q3) The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK's total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

We welcome the leadership being shown by the UK Government in setting out its ambitions in terms of CO<sub>2</sub> emission reduction targets and, for some time, we have advocated the need for a long-term trajectory for CO<sub>2</sub> emissions reductions going forward. However, this has to be

designed at European Union level given that the EU ETS is the key policy instrument dictating investments in the power generation sector over this time frame.

**Q4) For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

Allocation of emission rights needs to take account of specific fuels and technologies to ensure the diversity of the energy mix, security of supply and competitiveness in the electricity sector. This will be critical over the period to 2020, given the time needed to deliver options such as renewables, new nuclear and clean coal with CCS at scale within the EU. Consequently, auctioning can only be part of the solution to allocation and approaches such as grandfathering with updating or fuel and technology specific benchmarking will be required to avoid discriminating against particular technologies. The auctioning quota should be maintained as an EU-wide limit on the maximum level that Member States can apply.

**Q5) For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported Clean Development Mechanism (CDM) and Joint Implementation (JI) credits? Would you support rules to set quantitative limits on the use of CDM/JI credits, or to set qualitative criteria on the types of project which should be eligible?**

CO<sub>2</sub> is a global problem and, ultimately, should be addressed by global action within an international policy framework. In line with this, the criteria governing the types of project eligible for CDM/JI credits should be set at international level within the context of the UNFCCC framework. A guiding principle is that emissions reductions should be achieved in the most cost-effective manner and, therefore, there should be no restriction on access to CDM/JI measures.

**Q6) Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the current policy from a measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

We fully support the energy services model for both the domestic and commercial markets. However, the imposition of a supplier obligation will not deliver the desired results unless it is facilitated by an appropriate policy framework accompanied by other measures to change customer behaviour. These measures could include regulatory aspects such as appliance standards and building regulations together with further fiscal incentives such as council tax or stamp duty incentives.

In the relatively recent past it has proved difficult even to give away energy efficiency products to some customers. The recent Energy Efficiency Innovation Review confirmed that consumers do not understand the long-term benefits of such measures and often discount the opportunity to improve the efficiency of their home on the basis of the “hassle factor”. This acts as a considerable barrier to energy efficiency take-up.

Broadening the concept of energy efficiency to recognise the potential of measures to influence consumer behaviour such as smart metering and real-time displays will also assist in both changing consumer behaviour and allowing for product innovation. Ultimately a change in consumer behaviour, introducing mechanisms for real time data management and product flexibility will change this market into an energy services market.

**Q7) Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

Disclosure of our carbon emissions is *de facto* mandatory through requirements to report them to the Environment Agency and through the EU ETS. This information is publicly available and mandatory disclosure would not result in any greater disclosure by power generators than is currently the case.

**Q8) Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK's electricity by 2020, with higher targets set for 2025/2030?**

We believe that the target of 20% electricity from renewables by 2020 is achievable providing that the barriers to their deployment are addressed, including planning and grid connection issues, to encourage potential investors. There is no single 'silver bullet' to mitigate the impacts of climate change. It may well be appropriate to set higher longer term targets but this will need to take account of the potential of other emerging technologies and policy measures to deliver GHG emission reductions and their relative cost-effectiveness.

**Q9) Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any change to the current market structure and regulation is needed to encourage new nuclear build?**

Providing that the appropriate public policy and regulatory framework for licensing new nuclear power stations in the UK can be established and if there is broad public acceptance, new nuclear power stations could play a significant role in meeting energy policy objectives of reducing carbon emissions and ensuring secure supplies of energy.

Our company is a major player in the UK market and has expertise in operating nuclear power plants in Europe. This means that we are well-positioned to participate in the debate on any new nuclear programme in the UK. We engage with other companies, with Government, regulatory authorities and potential suppliers in order to better understand the issues and their market implications. However there would need to be much discussion, public debate and enabling legislation, before we would make a decision on whether or not to be involved in any future programmes in the UK.

Energy policy must create an environment which encourages the development of alternative, low carbon emitting forms of generation, or the life extension of this plant or its replacement. Energy policy should not distort power markets in favour of nuclear generation but rather encourage competitors to pursue different strategies and technologies to deliver both security and low emissions.

**Q10) Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean**

**coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

CCS as a technology is at a critical stage in its development. There are a number of significant regulatory and legal issues (for example, carbon transport and storage infrastructure, treatment of CCS under EU ETS and international agreements and ownership of long-term liabilities) requiring resolution.

CCS is far from being a mature and proven technology. The first CCS demonstration projects will require significant financial support as the market will not otherwise reward the high capital costs, lower efficiencies and risks of these projects. It would therefore be premature to introduce legislation requiring it to be fitted to new coal-fired power stations when no large scale demonstration projects have been successfully deployed.

As a result, CCS would simply not be available to investors before 2015 and a mandatory requirement may stifle further development of this technology. We would, however, strongly support legislation to ensure that any new coal-fired stations built are “carbon capture ready” i.e. that carbon capture equipment can be fitted in the future once the technology has been proven.

SCOTTISH POWER'S RESPONSE TO WWF-UK'S SHORT SURVEY

**Q1) There is a debate in the context of the UN climate change negotiations and the G8 over the level of ambition that should guide future international efforts to combat climate change. What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

Overall, our company supports both the precautionary principle and the polluter pays principle in relation to climate change policy. We believe that there is sufficient scientific evidence to demonstrate anthropogenic impacts to climate to the extent that these impacts must be addressed as a matter of urgency within UK, EU and global energy and environment policy.

We support the current EU position of limiting the concentration of greenhouse gas emissions to 2 degrees Celsius (implying 450-550 ppm CO<sub>2</sub> concentration). The leadership approach being taken by the EC is both ambitious and realistic. We are strongly supportive of the need for minimal reductions of CO<sub>2</sub> of 20% by 2020 and the creation of minimum, legally binding targets for Member States of the EC.

Globally, we are supportive of an extension to the Kyoto Protocol that will encourage the participation of both developed and developing countries. In developed countries not yet included in the Kyoto Protocol framework (ie the US and Australia) we support the extension of caps on CO<sub>2</sub> emissions and the creation of support via minimum levels of renewables via Renewable Portfolio Standards.

**Q2) In March 2007, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012. The EU also agreed a binding target for renewable energy to supply 20% of Europe's primary energy needs by 2020. What are your company's views on these objectives?**

As we state in our answer to Q1, we are supportive of this approach. We look forward to the development of policy to agree burden share between different Member States – both in relation

to GHG emissions and renewable energy supply. In doing so, Member States need to clarify the definition of renewables and the baseline for primary energy supply.

Prior to the agreement by the European Council on overall binding targets - we had been broadly supportive of the creation of binding sectoral targets for renewable energy supply

**Q3) The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK's total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

For the economy as a whole we support a reduction of 30% by 2020 and 60% by 2050 with the LEP sector taking a proportionate share of these reductions. We have not yet undertaken modelling to determine the practical delivery of CO<sub>2</sub> reductions in the interim periods of 2030 and 2040.

**Q4) For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

We support auctioning within the EU ETS Phase 2 at the agreed level of 7%.

Beyond this, we support a move towards full auctioning beyond 2012 for the large electricity producers - subject to the emergence of a liquid GHG market being established and a greater proportion of sectors bearing their share of burden. The precise timescale to full auctioning for LEP must consider aspects of security of supply together with the need for benchmark allocation to support CCS readiness for new clean coal plant.

One further consideration is to ensure that there is an EU wide harmonisation of auction arrangements for the power sector across Member State jurisdictions. The need for harmonisation is given greater emphasis due to the need to avoid market trading distortions as liberalised energy markets emerge across the EU.

**Q5) For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported Clean Development Mechanism (CDM) and Joint Implementation (JI) credits? Would you support rules to set quantitative limits on the use of CDM/JI credits, or to set qualitative criteria on the types of project which should be eligible?**

Yes - a reasonable split would be 70 / 30 (domestic / imported) up to 2020. It is important to ensure that trading is allowed to occur (to reduce compliance costs, meet clean energy development objectives and enable suitable wealth transfer to developing countries) but there must also be domestic action if we are to move towards a sustainable model of a low carbon economy within Europe.

We support quantitative limits on credit imports, in order to achieve the proper balance between domestic action within the EU and international trading.

There should also continue to be qualitative criteria for eligible CDM / JI projects. This is an area that should be under continuing review as knowledge of projects improves. Present

arrangements are satisfactory albeit there is always scope for reducing transaction costs associated with projects.

**Q6) Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the current policy from a measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

We do not agree with the premise that an energy services model is necessarily the best or only means to maximize energy productivity or reduce energy consumption in the domestic sector.

It is one of many approaches that need to be deployed to ensure that the UK is able to get the best from the energy it produces and that the energy is as low in carbon content as possible. Others include appliance efficiency, building regulation standards, improvements in consumer information (including metering), pricing, changes to energy distribution and improvements in thermal insulation standards.

In this area, policy should focus on ‘outcome’ rather than the preoccupation on process or of trading. Whilst there are examples where trading can work effectively (i.e. upstream energy production) it is not clear (at this stage) that the benefits of trading within EEC are so significant that they outweigh the costs of introduction.

The current EEC model has delivered well and adjustments to the EEC model may be more preferable. For example, the move towards a focus on the carbon content of fuel could be coupled with a differential approach to EEC targets for customer groups that have above average energy use.

**Q7) Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

We support the requirement for Directors to make a disclosure to the extent necessary. Our company supports full disclosure and transparency and subscribes to the DEFRA Guidelines for Environmental Reporting and the UK Guidelines on Greenhouse Gas Reporting.

We also subscribe to the Carbon Disclosure Project and include not only our greenhouse gas data that is verified via MRV processes, but also other non EU ETS emissions. It is important that stakeholders have a wholly transparent understanding of carbon risk.

**Q8) Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK’s electricity by 2020, with higher targets set for 2025/2030?**

Yes.

**Q9) Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any change to the current market structure and regulation is needed to encourage new nuclear build?**

We recognise the benefit of nuclear power to GB security of supply, economic development as well as to the delivery of a low carbon electricity system.

This question is a balanced judgment for civic society (including citizens, policymakers, environmentalists and business) as to whether the benefits gained from nuclear power outweigh the associated risks. This is best informed by a technical understanding of the pro's and con's of the latest technology and methods of waste management.

For new nuclear build to be sustained in the energy market, the following condition should apply:-

- long term carbon benefit for low carbon electricity generation must be agreed and put in place between market regulator and owners of new plant;
- planning arrangements must be streamlined with a clear statement of need expressed by Government and Parliament;
- Financing arrangements must be put in place for the management and disposal of waste;
- Designs for new nuclear reactors must be agreed by the HSE; and,
- The issue of nuclear waste must be satisfactorily resolved.

**Q10) Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

No. At this stage, it is a step too far to prohibit the building of new coal plant that does not have carbon capture and storage.

We broadly support the EC Communication on Sustainable Use of Fossil Fuels in Electricity Generation, however, implementation must be undertaken following a proper technical and legislative review. Such a review must include a detailed analysis of the EU demonstration projects together with surveys of technical and economic potential in EU regions.

We are actively considering new high efficiency clean coal plant for deployment in the UK with associated capture and storage capability.

#### SCOTTISH&SOUTHERN ENERGY'S RESPONSE TO WWF-UK'S SHORT SURVEY

**Q1) There is a debate in the context of the UN climate change negotiations and the G8 over the level of ambition that should guide future international efforts to combat climate change. What is your company's view of the ultimate objective for climate change policy, whether expressed in terms of global average temperature rise above pre-industrial levels, atmospheric concentrations of greenhouse gases, or global emission reduction objectives?**

Addressing the threat of anthropogenic climate change requires global action. We support the objective enshrined in the UNFCCC that action should be taken to avoid dangerous levels of climate change. From the most recent scientific reports of the IPCC it would appear that this will require a reduction of around 50% of global ghg emissions levels in 1990 by the middle of the century. We believe future agreements under the UNFCCC and/or under the auspices of the G8 should adopt this as the overarching objective for international climate policy and construct environmentally robust yet sufficiently flexible regulatory instruments to achieve that goal at least cost to the global economy.

**Q2) In March 2007, European Heads of State proposed a unilateral target for the EU to reduce greenhouse gas emissions by 20% by 2020, from 1990 levels – rising to 30% in the context of a satisfactory international agreement to succeed the Kyoto Protocol's first commitment period which ends in 2012. The EU also agreed a binding target for renewable energy to supply 20% of Europe's primary energy needs by 2020. What are your company's views on these objectives?**

We support the EU's emissions reduction target and the fact that it has been expressed in such a way as to encourage complimentary commitments by other countries. Climate change cannot be addressed by the EU in isolation and we must continue to focus on securing future international agreements. We believe that the primary means by which the EU should make its contribution towards global emissions reduction targets should be the EU ETS and that the focus of the Commission should remain on ensuring that this mechanism is working effectively and that the scheme is broadened as far as is practical or supplemented by policies that as far as possible place absolute caps on emissions.

Recognising the importance of targets in helping to shape investment decisions we have set ourselves a target to reduce the carbon intensity of our generating fleet by 20% by 2016 compared to 2005 levels.

We support the binding renewable target whilst recognising that it is incredibly ambitious given current levels of deployment and the short timescale. The key for delivery is the creation of robust policies dealing with support, grid access and planning that will allow delivery.

We believe that the primary means by which the EU should make its contribution towards global emissions reduction targets should be the EU ETS and that the focus of the Commission should remain on ensuring that this mechanism is working effectively.

**Q3) The UK government is consulting on a Climate Change Bill that will set a trajectory for the UK's total CO<sub>2</sub> emissions together with mechanisms for reporting and accountability. What level of emission reduction targets would you support under the Bill for 2020, 2030 and 2050?**

We support the targets set out in the draft Bill – we would note that they are unilateral legally binding targets set over the long term and as such there needs to be sufficient flexibility in the legal framework to ensure the UK can respond to changing external circumstances which includes developments in scientific thinking and international negotiations that might necessitate deeper cuts over the long term.

We support the proposed targets for 2020 and 2050 but would suggest that additional effort could be indicated on a conditional basis following the example of the EU 2020 target – for example a target of 80% by 2050 if others follow suit.

In the short term for our industry the key question will be how the targets and budgets in the Bill relate to decisions regarding future National Allocation Plans under the EU ETS as it is this that will effect investment decisions.

**Q4) For allocation under the EU Emissions Trading Scheme, would you support a mandatory minimum level of auctioning for the power sector in phase II – and if so, at what level? Would you support a move towards 100% auctioning in the future?**

Yes we support the increasing use of auctioning in the EU ETS but we would consider that this should be applied to all sectors where it cannot be clearly demonstrated that CO<sub>2</sub> shortfall will not result in the relocation of production outside the EU. Harmonisation across the EU regarding auctioning will help broaden the level of CO<sub>2</sub> cost internalisation which is an essential step in reducing carbon emissions. We support a phased transition towards 100% auctioning by 2020. It is important that as much notice as possible is given both regards the goal the progression which we consider could be non-linear e.g. 20% in 2013, 50% in 2016 and then 100% by 2020.

**Q5) For the ETS to contribute towards the EU's 30% emission reduction target for 2020, what do you think is a reasonable split between action within the UK/EU and use of imported CDM/JI credits? Would you support rules to set quantitative limits on the use of Clean Development Mechanism (CDM) and Joint Implementation (JI) credits, or to set qualitative criteria on the types of project which should be eligible?**

We believe emissions trading is the right approach to tackling climate change since it is irrelevant where savings occur as long as they are genuine and verifiable. The Kyoto Protocol and Marrakesh accords state that trading should be 'supplemental' to domestic action. However this is not further defined or quantified. The EU has interpreted it to mean that trading outside the EU should not make up more than 50% of effort. There are economic arguments in favour of making this assumption more explicit within the rules of the EU ETS (increased clarity and investor confidence) and arguments against imposing a limit at all (free trade, anti-protectionism, economic efficiency). We believe the correct place for this issue to be resolved is in international negotiations where developed and developing countries need to be clearer about whether there is a need to be geographically specific about where emissions reductions occur as opposed to who takes responsibility for paying for them. This should then be reflected in domestic policy. In the meantime, however, we would also encourage the UK Government to develop a clearer policy on the use of traded credits that clarifies the extent to which reductions should be found at least cost internationally, and the extent to which policies will be implemented to deliver savings at home. The Climate Change Bill provides an obvious opportunity to introduce this clarity.

**Q6) Do you agree with the proposition that the energy supply market needs to shift to a model based on provision of energy services? The government is considering replacing the Energy Efficiency Commitment with a new UK household energy Supplier Obligation, so changing the current policy from a measures-based approach to one with tradable targets defined in terms of absolute carbon or energy demand. Do you support this approach, or do you have alternative policy proposals to encourage a shift to energy services?**

Yes, we were a leading participant in the Treasury led High Level Group on Energy Services which developed policy and fed into the Energy Review process ideas for incentivising energy demand reduction through the provision of energy services. We have consistently overdelivered on our EEC targets and have pro-actively fed into Government information that illustrating the scale of the gap between current EEC commitment levels and the effort that is actually needed to deliver the Government's emissions reduction targets.

We have already invested in the development of an energy services business focused on both the industrial and commercial and domestic markets and we would welcome a more flexible energy efficiency policy that allowed us to decide on the best measures to achieve the

Government's goals of increasing energy efficiency and thereby reducing carbon emissions and increasing energy security at least cost.

We are leading investors in small scale renewable technologies and have invested in the development and trialling of visual display units and smart meters. Smart meters offer many advantages that will facilitate the development of energy services. We have advocated that metering should be included in Distribution Network Operators business so a roll-out programme can be effectively co-ordinated. We also believe there is potential for changes in tariff structures to incentivise energy efficiency. We will later this year launch a unique energy programme which will enable and encourage customers to commit to using less energy – and reward them for doing so with vouchers enabling them to get money off their energy bills, A-rated electrical and gas appliances and energy efficiency measures.

We would highlight, however, that a fundamental shift to providing energy services as opposed to units of energy will not come without cost. In developing new policies in this area the Government must acknowledge that although when given the right incentives and offered new services customers may be able to reduce their net energy consumption, this may not necessarily result in lower bills over all since the investment and resources involved in the provision of tailored services may prove to be greater than in the current centralised system. Whilst we recognise the importance of tackling fuel poverty we believe it is imperative that dedicated fuel poverty policies and measures are introduced that are decoupled from energy efficiency policy.

**Q7) Would your company support the introduction of mandatory carbon disclosure in annual company reporting procedures in the UK?**

Yes. We already report on emissions arising directly from our operations and indirectly from our corporate activities. However to ensure reporting is not misleading very clear rules need to be developed that take into account the difference between direct and indirect emissions, the implications of upstream caps, whether the use of renewable energy is additional or not and what constitutes a genuine carbon off-set or carbon neutrality claim. We consider that extension in the coverage of emissions trading schemes is the best way of ensuring full and accurate disclosure.

**Q8) Would your company support revisions to the policy framework to ensure that renewables supply at least 20% of the UK's electricity by 2020, with higher targets set for 2025/2030?**

We are active investors in a range of renewable electricity technologies including off and on-shore wind, hydro, biomass, solar, wave and tidal and support the continuation of incentives to increase the deployment of renewable electricity in the UK and a higher target for 2020. However, considerable barriers continue to exist even though financial incentives are currently in place. The recent Planning White paper is welcome, however, it does not apply in Scotland where similar reforms are also needed. Arrangements for connecting projects to the national grid also need to be reformed if high levels of deployment are to be achieved.

We support market based solutions to the issue of climate change and energy security and believe that in the long term a wide range of low and zero carbon technologies in transport, heat and electricity markets will be needed to achieve deep cuts in emissions and provide long term energy supplies. We would therefore prefer that targets were placed on all energy sectors rather

than simply continuing the focus on the electricity sector. The EU renewables target is a welcome step in this direction.

**Q9) Is your company in favour of new nuclear power plant build in the UK? If so, would your company be interested in taking part in any new build programme? Does your company think any change to the current market structure and regulation is needed to encourage new nuclear build?**

Such is the seriousness of the threat of climate change we believe it would be imprudent to rule out the use of any low or zero carbon emissions technology at this stage as long as they can be developed safely and any legacy issues such as waste can be adequately dealt with. We do not consider any changes to the market are needed to encourage nuclear new build beyond a long term commitment to the EU ETS as the primary policy instrument in driving a move to low carbon generation.

**Q10) Would your company support new legislation restricting new coal plant build without carbon capture and storage, and publicly commit not to build any new coal-fired capacity other than clean coal (i.e. so that by 2015 no new coal plant is commissioned unless it is fully equipped with CCS)?**

No, we do not support mandatory CCS for new power plant. We consider CCS to be an emissions reduction option that should be incentivised by the carbon price signal coming from the EU ETS. The fact that that signal is not present beyond 2012 at present is a barrier to investment and underlines the need for EU governments to create a clear framework going to 2012 and beyond, under which generators can make investment decisions. CCS is as yet a technology at a very early stage of development and it is more expensive than traditional forms of electricity generation and also many alternative carbon reduction measures.. For CCS to be deployed in the market at present it would require substantial subsidy, even with the presence of a continuing carbon price. Legislation of this kind would be inappropriate as it would result in increases in energy prices at a time when there are more cost effective emissions reduction options available.

We would however support schemes that incentivise full scale demonstration of CCS technology to aid the development of cost-effective CCS technology.



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 visit [wwf.org.uk/researcher/issues/climatechange](http://wwf.org.uk/researcher/issues/climatechange)

The mission of WWF is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
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