

ENERGY REVIEW 2006

RESPONSE BY E.ON UK

High Level Points

The UK energy sector requires major sustained investment in energy infrastructure to cut CO₂ emissions and maintain security of electricity supply. A wider range of low or zero carbon power plant investment options is required than is currently available, to reduce carbon emissions in line with the Government's targets and to maintain diversity of fuel for power generation.

We believe the industry will efficiently deliver sufficient investment in a diverse portfolio of low carbon assets provided there is a sustainable policy framework robust to future uncertainty. De-centralised investment planning should remain at the centre of the energy market.

UK energy and environmental policy should:

- focus on supporting the development of the EU emissions trading scheme as the primary driver of low carbon investment and on establishing international consensus on action to tackle climate change, while recognising that this may either not be achieved or will take some time to deliver;
- give priority to making Phase 2 of the EU emissions trading scheme work well, by structuring it to avoid carbon prices which will put the future sustainability of the scheme at risk, and to support new low carbon investment;
- work for the earliest possible resolution of the international framework for reducing global carbon emissions after the Kyoto period expires and define its relationship to and rules for Phase 3 of the EU ETS;
- provide investors with the option to invest in nuclear power plant by building public and political support for civil nuclear power; implementing efficient and stable planning and safety regulation processes which facilitate competition between suppliers of standard international plant designs and reduce development risk; providing for a secure and safe disposal route for long-lived nuclear waste and for transfer to Government of responsibility for this; and facilitating access to development sites adjacent to existing nuclear facilities;
- support carbon capture and storage (CCS), marine, biomass and off-shore wind as technologies that are currently uneconomic but have the potential to make a significant contribution to meeting UK energy needs and reducing CO₂ emissions in the longer term, through a mechanism which involves a contractual arrangement that defines the risk allocation between Government and the private sector, with funds raised through the hypothecation of receipts from sales of permits in Phase 2 of the EU ETS;

- address institutional barriers to CCS investment by establishing a clear international and national legal framework for CO₂ storage in geological formations, and providing for Government assumption of long term responsibility for stored CO₂;
- maintain stability in the Renewables Obligation, including rules restricting co-firing in fossil-fuelled plant, to ensure a stable regulatory framework for renewables investment. Instead the government should focus on improving the efficiency of the land use planning regime as it applies to renewable projects;
- promote a step change in the efficiency of energy use by:
 - separating linkage between energy efficiency and fuel poverty under EEC;
 - sharpening fiscal incentives to strengthen customer interest in energy efficiency particularly in the residential market;
 - providing more flexibility for suppliers under EEC to incentivise the roll out of new technologies such as smart metering;
 - trialling the use of a supplier cap and trade scheme in the commercial market to assess case for full implementation in 2011.
- support energy companies in diversifying and managing sources of gas by facilitating the development of more gas storage, pipeline, terminal and processing infrastructure within the UK and EU; in particular the Government can help make the public case for this investment and ensure that the UK land use planning system fully and efficiently reflects the Government's national energy policy objectives;
- support generators in maintaining diversified sources of coal supply by facilitating the development of coal import infrastructure, and removing constraints on taking advantage of the economic potential of UK deep-mined and opencast supplies;
- support the network investment needed to maintain supply security and accommodate increased distributed generation by:
 - shifting network regulation from the need to scrutinise operating costs to a greater understanding of the long term demands on the network and the investment required;
 - providing a stable and sustainable regulatory framework to attract the necessary funding, with a commitment to maintaining the drivers of investment and its financing over future price control periods, and to allow distributors to invest in the necessary skills and resources;
 - reviewing the land use planning regime to encourage efficient and timely network investment.

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RESPONSE BY E.ON UK

1 E.ON UK is the UK's second largest retailer of electricity and gas, selling to residential and small business customers as Powergen and to larger industrial and commercial customers as E.ON Energy. We are also one of the UK's largest electricity generators by output and operate Central Networks, the distribution business covering the East and West Midlands. We are also a leading developer of renewable plant.

2 E.ON UK is part of the E.ON Group. In addition to the UK, the Group has electricity and gas interests in Germany, Central and Eastern Europe, Italy, the Netherlands, Scandinavia, the USA and Russia. E.ON also owns or has interests in 23GW of nuclear capacity, located in Germany and Sweden.

The Need for Diverse Low Carbon Investment in the UK Power Sector

3 The UK power sector requires major sustained investment in energy infrastructure to cut CO₂ emissions and maintain security of electricity supply. Over the next fifteen years to 2020, 9GW of existing nuclear and 13GW of coal and oil-fired generating plant will close, which equates to one third of total UK power plant.

4 Much of this closing plant will need to be replaced with low or zero carbon generating plant if the power sector is to contribute to a continued reduction in CO₂ emissions in line with the Government's objective of reducing emissions by 60% by 2050 from 1990 levels. However, although CCGTs plants produce significantly lower emissions than existing coal plants, they emit more CO₂ than nuclear plants and replacement of closing plant by gas-fired CCGTs would result in emissions rising from 2016 onwards, once coal-fired plant opted out of provisions of the Large Combustion Plant Directive has closed by 2015. In addition, gas-fired generation could account for around 70% of UK power generation by 2020.

5 This outcome is inconsistent with the Government's objective of putting the UK on a path to cut CO₂ emissions by some 60% by about 2050, with real progress by 2020. Such a high proportion of gas fired generation may also leave the UK economy excessively exposed to movements in world gas prices. Investment in renewables and energy efficiency on the demand side, while capable of making an important contribution, will not be able to close the gap. E.ON UK and other energy companies therefore need a wider range of low or zero carbon power plant investment options than are currently available politically or commercially. The wider the range of options to the power sector, the lower the potential cost of reducing CO₂ emissions and maintaining security of supply is likely to be.

6 We see the main low carbon investment options on the supply side potentially available over the period to 2020 as:

- CCGTs: investment in CCGTs will be required in the short term to maintain supply security at the end of this decade and the early part of the next. We are seeking consents for plants at Grain and Drakelow;
- Renewables: we are already investing substantially in on and offshore wind and biomass and are evaluating tidal and wave technologies;
- Clean coal and carbon capture and storage: we are carrying out a detailed feasibility study for a project on the Lincolnshire coast;
- Nuclear power: we are carrying out preliminary work on evaluating this as an investment option for E.ON UK.

7 On the demand side, existing policies are making only a modest contribution to constraining demand growth. More radical action is required to encourage improvements in energy efficiency. Further measures are also needed to realise microgeneration's potential to make a significant contribution to the UK's carbon reduction objectives.

RESPONSE BY EON UK TO CONSULTATION QUESTIONS

1 What more could the government do on the demand or supply side for energy to ensure that the UK's long-term goal of reducing carbon emissions is met?

How to Incentivise Investment in Low Carbon Technologies

8 Companies such as E.ON UK will efficiently deliver adequate investment in a diverse portfolio of low carbon assets provided there is a sustainable policy framework which is robust to future uncertainty, and regulators/Governments do not intervene to reduce investment returns, including via *ex-post* taxation. De-centralised investment planning should therefore remain at the centre of the energy market.

9 The key challenges for the Government are to deliver a sustainable climate change policy, and increase the low carbon investment options available to companies.

10 UK climate change policy must deliver the largest long-term economic signal to invest in low carbon technologies through a carbon price that is consistent with maintaining the international competitiveness of the UK economy. UK policy should focus on supporting the development of the EU emissions trading scheme as the key driver of low carbon investment and on establishing international consensus on action to tackle climate change, while recognising that this may either not be achieved or will take some time to deliver. The UK should therefore:

- give priority to making Phase 2 of the EU emissions trading scheme work well, by structuring it to:

- avoid carbon prices which will put the future sustainability of the scheme at risk. This could be achieved through adequate 'safety valves' (e.g. banking and borrowing, ensuring effective clean development mechanisms, cash-out prices);
- share the burden equitably across countries and sectors;
- encourage investment by providing a free allocation to new entrants on the same basis as permits are allocated to incumbents, and by allowing the transfer of allowances from closed installations to encourage investment in new capacity;
- allocate permits on the basis of benchmarking which does not discriminate against coal plant whether opted in or out of provisions of the LCPD;
- be prepared to use Phase 2 of the EU ETS as a vehicle to fund investment in developing technologies (e.g. through recycling of receipts from permit auctions);
- work for the earliest possible resolution of the international framework for reducing global carbon emissions to apply after the Kyoto period expires at the end of 2012 and define its relationship to and rules for Phase 3 of the EU ETS to run from 2013;
- develop in parallel an alternative climate change strategy for the UK, in the absence of sufficient international agreement, aimed at continuing to reduce emissions but minimising the impact on the UK's international competitiveness.

11 It is important that the market is not undermined through the introduction of long-term subsidies and further obligations to pick technology winners. Government should:

- ensure that mature low carbon technologies – such as nuclear power and mature renewable technologies such as onshore wind - are subject to an appropriate regulatory regime which supports efficient and timely delivery of investments;
- support financially the development of emerging low carbon technologies (for example, carbon capture and storage, wave/tidal power) that have the potential to play a significant role in our future generation mix. Particular demonstration requirements should be identified and companies would then propose projects and compete for funds raised from the sale of permits under Phase 2 of the EU ETS (see para 35 below);
- confirm that the Renewables Obligation will remain in place in its current form but there is no intention to extend it beyond the current 2027 timescale;
- ensure that the system of corporate taxation supports the development of low carbon generation sources. In particular, the

system of enhanced capital allowances should cover both short and long-lived generation assets which contribute to the reduction in carbon emissions. In addition, the arrangements under which exploration and appraisal costs incurred by the oil and gas industry are included within "research and development" for the purposes of the 100% capital allowances available for capital expenditure on R&D, should be extended to costs incurred at similar stages of the development of offshore wind farms and other low carbon generation projects. These costs would for example be those incurred after a potential site has been identified but before the decision has been made to go ahead with the investment, where further research is needed to determine whether geological or geographical features of the site make it a suitable location.

12 We do not favour the introduction of additional low carbon or similar obligations similar in form to the Renewables Obligation to incentivise the development of other forms of low carbon generation. The reasons for this are spelt out in Appendix A.

13 Significant effort should be focussed on improving energy efficiency. Investment by suppliers is primarily driven by the Energy Efficiency Commitment scheme but an approach is required which provides stronger incentives for consumers to alter their behaviour, particularly through direct fiscal incentives, and supports innovation by suppliers. Microgeneration can also play a significant role, both on the supply and demand side. It can only fulfil this potential within a long term market framework which rewards its low carbon potential, and includes pump priming support for emerging technologies in the short term. The required measures for microgeneration and energy efficiency are discussed below (paras 44 - 46, 50 and 51).

2 With the UK becoming a net energy importer and with big investments to be made over the next twenty years in generating capacity and networks, what further steps, if any, should the government take to develop our market framework for delivering reliable energy supplies? In particular, we invite views on the implications of increased dependence on gas imports.

14 Increased dependence on imported gas is more likely to give rise to price risks than security of supply risks. The UK market will assume more of the characteristics of the continental market as the UK moves from a position of self-sufficiency and a relatively large number of domestic producers toward one of import dependence with a smaller number of large producers in the major gas exporting countries - Russia, Norway, and Algeria - accounting for the majority of gas supply. LNG will provide an important additional source of supply but its price and availability will be affected by demand for LNG in the US, South East Asia and Japan (which, unlike Europe, do not have the same access to imported gas delivered by pipeline).

15 The interrelationship between the UK and continental European and LNG markets will therefore strengthen with market conditions and prices

increasingly affected by conditions outside the UK. UK gas prices should decline from their current price levels from around 2007, with the availability of additional sources of supply, but the price of oil will remain an important factor affecting continental and thus UK prices. In the longer term, we would expect gas prices to rise again as demand for gas rises in response to the EU ETS and similar policy instruments, new more expensive gas reserves have to be exploited, and new pipeline and LNG infrastructure has to be constructed. Prices may also be influenced by the commercial behaviour of the limited number of upstream gas producers.

16 Energy companies want to manage these risks by both diversifying their sources of gas supply and diversifying their sources of fuel for power generation.

17 Energy companies are already delivering the required investment in infrastructure (including storage, interconnection, and LNG processing) to maintain secure and diverse gas supplies to the UK. In the medium term the UK is better placed than many other European countries in terms of access to a geographically diverse range of sources of gas.

18 In electricity, additional gas-fired CCGTs will have to be built over the next few years to maintain adequate supply margins in the power market but E.ON UK will then want to consider diversifying its portfolio of low carbon power plant to avoid an unacceptable level of price risk in respect of its fuel purchasing costs and to continue reducing its CO₂ emissions.

19 The Government should take the following steps to support diversity of gas supplies and diversity of fuels for power generation:

- it should ensure that a wider range of low carbon investment options for generating capacity are available as discussed in our response to question 1;
- while in future an increasing proportion of coal for power generation is likely to be imported, it should remove any barriers which are preventing realisation of the economic potential of the UK coal industry, and in particular consider relaxation of the planning regime applying to opencast UK coal. It should also facilitate the development of any further coal import infrastructure that may be required to ensure that adequate supplies of overseas coal are available to UK power stations.

20 Given that imported gas will account for an increasing proportion of UK requirements over the next few years, the UK Government should:

- support energy companies in diversifying and managing sources of gas by facilitating the development of more gas storage, pipeline, terminal and processing infrastructure within the UK and the EU; in particular the Government can help make the public case for this investment and ensure that the UK land use planning system fully and efficiently reflects the Government's national energy policy objectives;

- promote the development of competitive gas markets and increased liquidity within the EU in a manner which does not disrupt investment in new gas resources and infrastructure;
- work more closely with other Member States and with the Commission to develop constructive and effective relationships with energy exporting countries to promote trade, investment by European companies within a stable and transparent legal framework, and to encourage more competition in global energy supply.

3 The Energy White Paper left open the option of nuclear new build. Are there particular considerations that should apply to nuclear as the government re-examines the issues bearing on new build, including long-term liabilities and waste management? If so, what are these, and how should the government address them?

21 New nuclear plant potentially has a role in contributing economically to the UK's CO₂ reduction targets and, in an era of high fossil fuel prices, to a diverse and secure energy supply.

22 It is a matter for Government to decide whether new nuclear plant should be available as an investment option. In a competitive energy market, decisions on investment in new nuclear power plants (and the extent of that investment compared to other options) should then be a matter for companies in the light of their assessment of the relative economics of nuclear and their value in diversifying risk, subject to meeting the local planning, licensing and other approval requirements which apply to nuclear power plants. The following issues would need to be addressed before it could become a viable investment option:

Public acceptance

23 Nuclear is a technology on which there are widely diverging views. Investors would need to be confident of broad public and political acceptance of new nuclear build through full consultation and debate, a White Paper and a positive statement from Government of the role it believes nuclear has to play in a diverse and low carbon fuel mix. Resolution of Government policy on radioactive waste disposal will be needed as part of the process of securing public acceptance.

Licensing and Planning Issues

24 Investment in new nuclear plant is subject to a wide range of planning and licensing approvals which can add substantially to project costs and investment risks. The Government would need to take steps to mitigate these risks if new nuclear is to be a practical commercial option.

25 In particular, the economics of new nuclear projects depend significantly on the UK licensing internationally available designs with limited or no modification and the ability of utilities to secure competing bids from alternative plant suppliers. The licensing process by the NII

therefore needs to provide for the pre-licence design certification of a number of alternative international designs.

26 The various inter-related legal licensing and planning processes need to be arranged such that a programme of new nuclear plants is approved on a generic basis before site-specific proposals are considered. This will avoid duplication of effort and reduce costs across a programme and reduce risk for prospective developers, while allowing full public consultation on both generic and site-specific issues.

Carbon pricing

27 Assuming reasonable licensing and planning processes, 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 would be taken (at least 5 years hence) in a sustained value for carbon emission abatement. We have discussed in para 11 above how the corporate tax regime could generally support low carbon investments.

Availability of sites

28 Suitable sites for plants within a new nuclear programme should be identified through the Government conducting a Strategic Environmental Assessment. If, very few suitable sites are identified, then the Government should consider how these can best be made practically available to prospective developers.

Waste management and decommissioning

29 Discounted waste management and decommissioning costs make up a small proportion of the total cost of electricity from new nuclear plants as these are designed with the aim of minimizing these costs over a 60 year operating life.

30 However, investors would need to be assured that a secure route will exist for the safe disposal of all radioactive waste and in particular that Government will accept ownership and responsibility for spent fuel and intermediate level waste by the end of a plant's life. Resolution of Government policy on radioactive waste disposal and its intended method of disposal and/or storage would therefore be required before a decision could be made to proceed with a new nuclear plant project.

31 The Government is the natural legatee of spent fuel and intermediate level waste because of their very long-lived nature and should have long-term responsibility for ensuring their safe storage or disposal. However, responsibility for the costs of long term storage or disposal is accepted by nuclear plant owners. Funding of a secure disposal route could be provided through, for example, a tariff on nuclear fuel used, in return for a commitment by Government to accept liability for long-lived wastes at a defined time.

32 Clear definition of responsibilities for disposal and storage of waste and for nuclear power station decommissioning, including arrangements for ensuring relevant costs are met by plant operators, will help give the public confidence that these key concerns have been properly addressed.

4 Are there particular considerations that should apply to carbon abatement and other low-carbon technologies?

Carbon capture and storage

33 Carbon capture and storage (CCS) has potentially a key role to play in enabling fossil-fired generation to continue to contribute to the UK's energy requirements, while at the same time reducing or eliminating carbon dioxide emissions.

34 It is applicable to electricity generation from both coal and gas, but combining clean coal technologies with CCS provides important fuel diversity benefits. The main priorities should be to reduce the cost of CCS technologies and to remove the legal obstacles to CCS development. The most effective way to do this would be for the Government to support a demonstration project or projects. The North Sea offers one of the best locations for the first deployment on a significant scale.

Funding for Demonstration of CCS and Other Emerging Low Carbon Technologies

35 Significant public funding would be needed to reduce the risks of private sector participation in a demonstration CCS project to a commercially acceptable level. We recommend that projects to demonstrate CCS and other emerging low carbon technologies should be supported in the following way:

- carbon capture and storage, together with marine, biomass and off-shore wind projects, should be defined as technologies that are currently uneconomic but have the potential to make a significant contribution to meeting the longer term energy mix. The market should be invited to tender potential development projects as part of a 'pre-auction' process;
- these projects should be short listed and invited to tender for Government support;
- the support mechanism should involve a contractual arrangement that clearly defines the risk allocation between Government and the private sector (see also recommendations on tax treatment of low carbon investments in para 11);
- the funds should be raised from the hypothecation of receipts from sales of emission permits under Phase 2 of the EU ETS (either by auctioning by Government or mandating sales of a proportion of permits allocated), or through other routes (such as from NFFO auction receipts) for renewable only investments.

36 Government should also seek, as part of the current EU wide debate on energy policy, increasing EU expenditure on research and development in the energy sector on projects to demonstrate new low carbon technologies.

37 Once confidence in these technologies is established through demonstrations at suitable scale, large scale commercial deployment should be supported through the market. This will require confidence in the long term value of abating CO₂ emissions as the economics of CCS rely more heavily on an enduring substantive carbon price than is the case with nuclear plant.

CCS: Planning and other Institutional Issues

38 For CCS to be a viable option, investors will need:

- A clear international and national legal framework for carbon storage in geological formations; this will involve amendment of the Ospar Convention and London Protocol, clarification of the framework for any required permissions under UK law, and of the monitoring requirements to demonstrate compliance with the EU ETS;
- Government assumption of responsibility for long term liabilities associated with storage of CO₂ in geological formations, with costs met upfront by the plant owners;
- a Government led communication process to establish public acceptance of CCS from the environmental and safety point of view.

Renewable Energy Sources

39 A stable regulatory framework to maintain investor confidence in the market for renewable generation established through the Renewables Obligation is essential, particularly given the difficulties UK developers are facing as a result of high world demand for turbines, aggressive incentive mechanisms in other countries and limited competition in the supply of equipment. Significant investment in renewables has been made and is planned on the basis of the existing policy framework and we do not support any further changes to this framework, which would undermine existing and future investment decisions.

40 We note the proposal to review the existing co-firing arrangements. We are concerned that this will divert funds away from new renewable schemes. In addition we are concerned that fuels sourced from distant locations with dubious sustainability credentials could undermine consumer support for the Renewables Obligation. We therefore propose no change to the profile caps and volumes (as set out to 2016) for co-firing ROCs that are eligible under the Renewables Obligation.

41 Instead, the Government should be focussing on improving the efficiency of the planning approval process. The process is inefficient and the timescales to final determination are uncertain, which leads to

unnecessary costs being incurred by planning authorities and developers. We recommend a number of practical measures to alleviate these planning constraints:

- the planning staff resources available to local and national authorities and for statutory consultees such as English Nature should be increased;
- dedicated planning teams should be created for renewables projects;
- an objective evidence base should be developed for planners, which encompasses local and other issues such as the carbon offset impact of a development;
- planning authorities and statutory consultees should be incentivised to meet targeted timescales for progressing planning applications;
- progression agreements between developers and planners should be encouraged; and
- the current target arrangements that discourage progression of applications once they have overrun their targets should be removed.

42 Emerging technologies such as offshore wind, biomass and marine renewable sources of energy have the potential to make a significant contribution to UK energy supply. However since these industries are immature, the associated costs and risks are relatively high compared with more mature renewable technologies. Additional support is required to help these technologies realise this potential, as discussed above in paras 11 and 35.

43 We have commented in para 11 above on how the tax regime might be sued to support renewables and other low carbon investments.

Microgeneration

44 Microgeneration could provide a significant proportion of the UK's electricity needs, although it is too early to provide definitive estimates. However, some studies by the Energy Saving Trust and others give an indication of the possible scale of microgeneration, with microgeneration contributing up to 20% - 30% of UK electricity supply by 2050.

45 As with large scale generation, the extent to which microgeneration contributes to UK electricity demand should be driven by the market within a policy and regulatory framework which facilitates investment, removes regulatory barriers and supports the development of emerging technologies, although the support mechanisms need to be appropriate to this distributed form of generation.

46 Government should fund emerging microgeneration technologies on a scale consistent with its support for emerging large scale technologies, the key criterion being its potential economic contribution to reducing UK carbon emissions, and implement a regulatory and energy policy

environment which is even-handed (compared to larger scale sources of generation) and facilitates the development of microgeneration on a long term basis. In particular, the Government and/or Ofgem should aim to:

- minimise the high administrative costs which small scale electricity generators incur (for example the complex procedures necessary to acquire and process ROCs for small scale generating plants need to be simplified);
- ensure electricity customers with microgeneration receive fair market value for what they pay for electricity imports and are paid for exports;
- ensure broadly equivalent fiscal treatment of low carbon generation technologies at the micro and macro scale;
- support commercially available forms of microgeneration through building regulations; and ensuring that microgeneration is attributed the full value of abated carbon emissions, to the extent that this is not already covered through the value of electricity exports and avoided imports.

5 What further steps should be taken towards meeting the government's goals for ensuring that every home is adequately and affordably heated?

47 Energy costs are likely to remain high and further concrete steps will be needed to tackle fuel poverty. Energy suppliers can most effectively address the issue through targeted investments in energy efficiency to reduce permanently the amount of household expenditure on energy needed to deliver an adequate level of warmth, coupled with support to ensure that customers are taking advantage of the benefits available from Government and are on the most suitable tariff to meet their requirements; however, this is likely to be ineffective unless underpinned by social policies to tackle the broader poverty issue. Government, regulatory authorities and suppliers therefore need to work collectively on a strategy to tackle this issue.

48 Many of the opportunities for addressing fuel poverty concerns through the existing EEC framework have been exhausted. For example, local authority properties will be saturated with energy efficiency measures through EEC1 and EEC2.

49 We would recommend the following further measures:

- energy efficiency and fuel poverty obligations should be separated to ensure that action in each area is effectively targeted through market incentives, but without increasing the overall cost on suppliers and customers as a whole;
- in the public and private sectors, more emphasis on providing new and replacement affordable housing to a high standard of energy efficiency;

- the use of fiscal incentives to support adoption of energy efficiency measures by landlords in existing properties, coupled with action to impose additional costs on landlords who fail to take advantage of the available support. Landlords of rented properties do not face the same incentives as property owners to install energy efficiency measures;
- consider incentives to encourage consumers on low incomes to take steps themselves to improve the efficiency of their homes for example by making available a proportion of the funds for the winter fuel payment available to incentivise investment in energy efficiency measures by consumers.

Other issues for comment

i The long term potential of energy efficiency measures in the transport, residential, business and public sectors, and how best to achieve that potential

50 Demand for energy efficiency measures is driven by customer interest. Currently, customers' ethical and environmental concerns are too weak to drive the targeted uptake of energy efficiency measures. This means Government and energy suppliers should focus on:

- improving economic incentives for consumers to reduce their energy consumption;
- reinforcing the message that the profligate use of energy contributes to global warming;
- providing better information to consumers about their energy consumption and how they can take action to reduce it.

51 To achieve these objectives, we advocate the following:

- Government should introduce sharper fiscal incentives to strengthen customer interest in energy efficiency in the residential market. This could take the form of a reduction in stamp duty, or a reduction in council tax, for energy efficient housing and further reductions in VAT for energy efficient goods or materials. These measures should be complemented by measures that increase the costs to property owners of failing to capitalise on opportunities to adopt energy efficiency tools;
- the introduction of more advanced meters by suppliers could improve significantly the availability of information about energy consumption to customers and, together with the provision of energy efficiency measures by suppliers or tariffs structured to reward reductions in consumption, would encourage significant reductions in consumption. However, there is no business case for installing more advanced forms of metering in most residential housing and additional incentives are required to reflect the environmental benefit. Suppliers should be able to claim credits for installation of smart metering backed by

appropriate energy efficiency measures or tariffs, under the EEC scheme, subject to further analysis of the potential for metering to effect changes in consumption behaviour;

- Government should give suppliers greater flexibility in pursuing EEC targets to incentivise the roll out of new technologies, in addition to smart metering. We also need to shape the behaviour of the customers of tomorrow. Suppliers should receive credit for educational initiatives;
- in the industrial market, the EU emissions trading scheme should be extended as far as practical to ensure that a carbon price is reflected in industrial consumption of fossil fuels. Other trading mechanisms, such as a supplier cap and trade scheme, are potentially an effective tool for driving energy efficiency; the key challenge is how to administer these efficiently. Such a scheme should be trialled for commercial customers, to assess the case for its extension to domestic customers after the expiry of EEC2b in 2010.

ii Implications in the medium and long term for the transmission and distribution networks of significant new build in gas and electricity generation infrastructure

52 Robust networks are key to the delivery of all energy policy objectives. The delivery of secure and diverse power and gas supplies upstream is ineffective unless networks are flexible enough to connect these sources of energy and reliably deliver them to the consumer. Customers' current experience of supply interruptions arise from network failures rather than inadequate investment in upstream capacity.

53 With the potential contribution of micro-generation and other forms of distributed low carbon technologies to UK electricity demand, the future generation mix will have a significant effect on the future topology and operation of distribution networks. Distribution networks will need to change from passive to active status, facilitating two way power transfers, enabling power exports, and providing trading and security functionality. Conversely, inappropriately designed networks could present a barrier to adoption of low carbon technologies by making connection to the electricity network impossible or prohibitively expensive. The Government's micro-generation strategy should provide distribution companies with confidence in the adoption of distributed generation to start to design networks that will be suitable for use over coming decades.

54 Asset risk management modelling and recent experience of the performance of networks under storm conditions suggest that significant further extension of asset lives is not achievable. The recently completed distribution price control review has started to recognise the need to replace assets largely built in the 1950s and 1960s but continued, and increasing, investment will be needed over future price reviews. To support the efficient delivery of this investment whilst also creating active networks capable of supporting the government's targets for increased embedded generation, the regulatory framework for networks must:

- reflect a longer term vision of the role of networks, both in terms of how it can most effectively support the Government's energy policy objectives, and meet consumers' expectations for secure delivery of energy;
- recognise explicitly the scale and nature of investment required over the longer term beyond the current price control period;
- provide a stable and sustainable basis both to attract the necessary funding, with a commitment to maintaining the drivers of investment and its financing covering future price control periods, and to allow distributors to invest in the necessary skills and resources.
- continue to shift from the need to scrutinise operating costs in depth, (given the significantly reduced opportunities for future operating cost efficiencies) to a greater understanding of these long term demands on the network and the investment required;

55 The financing, planning and delivery timescales required to implement network investments in the UK are too long, with implications for network operators' ability to make the necessary investments required to maintain supply security and accept new technologies in time. We recommend that existing planning legislation is reviewed to lessen the burden on the industry in acquiring the land or rights over needed to make network investments.

56 The regulatory framework must also continue to support the investment required in the network infrastructure to provide such generators the opportunity to connect. Any further shift to a market led approach to determining the need for new infrastructure, either to allow connection or reinforce existing infrastructure, should be avoided. This approach requires prospective generators to commit to a connection at too early a stage in their project development process, effectively disincentivising new generating capacity and technologies.

iii Opportunities for more joint working with other countries on our energy policy goals

57 We have commented in response to question 1 on the importance of securing international agreement on measures to tackle climate change and we very much welcome the progress the UK Government has made during its Presidency of the G8.

58 We do see scope for more effective joint working with other countries in the following areas:

- establishing a more pro-active EU relationship with major energy exporting countries and indeed other major energy importers such as the US, on the basis of a collective strategic understanding of the EU's long term energy requirements; this should be aimed at encouraging more open and transparent markets outside the EU in gas, oil and

electricity, stable global energy market conditions, and a receptive investment environment for European companies;

- seeking to reach more of a consensus within the EU on the market structures and policy frameworks which are likely to support the €1000bn of investment the European Commission estimates in its Green Paper is required in energy over the next twenty years;
- ensuring 'joined up Government' within the EU and that energy policy objectives are properly assessed in other areas of EU legislation;
- increasing EU expenditure on research and development in the energy sector including on projects to demonstrate new low carbon technologies;
- working with other large carbon emitting countries – including the US, China and India - to stimulate the development and deployment of low carbon technologies.

iv Potential measures to help bring forward technologies to replace fossil fuels in transport and heat generation in the medium and long term

59 Support for alternative fuels to deliver heat could be delivered through a renewable heat obligation supported by additional capital grants.

60 We would be anxious to ensure that any scheme to support biomass heat does not detract from the current scheme for biomass electricity. This needs to avoid inflating biomass prices which will damage biomass electricity schemes already in place such as E.ON UK's Lockerbie project and will simply increase the level of support necessary to get future projects off the ground. Therefore any heat scheme should encourage biomass usage in a way that does not create competition for fuel with the current electricity schemes.

61 This could be done as the renewables obligation favours large scale plant and therefore biomass fuels from particular market sectors. Heat on the other hand is most likely to be smaller scale (domestic heating, public sector buildings, etc.) although some larger scale heat as CHP already competes under the RO.

APPENDIX A

A Low Carbon or Sustainable Energy Obligation: Pros and cons

1 Some consideration has been given to whether a low carbon obligation in the energy sector to complement the Renewables Obligation would be an appropriate means of incentivising investment in other low carbon technologies such as nuclear and CCS. This note looks at the merits or otherwise of this approach.

2 It is assumed that such an obligation would operate in a similar way to the RO by providing an obligation on suppliers to purchase so much energy from low carbon sources over a future period with the ability to buy out the obligation. Buy out receipts would be recycled. Eligible technologies would include nuclear and coal or gas plant fitted with CCS. Renewable generation would not be eligible.

Advantages

3 From the Government's perspective a low carbon obligation gives confidence that nuclear, clean coal and CCS generation or other technologies would be built to a defined timescale and particular volumes, the Government having taken a policy decision to support it. In principle it would be technology neutral leaving choice of technologies to the market. Furthermore, the subsidy is funded by customers rather than taxpayers and does not count as public sector borrowing. Government can cap the cost to the consumer by setting the level of the buy out price.

4 For developers, while possibly not sufficient on its own to support commitment to an investment, it could facilitate long-term power purchase contracts with suppliers subject to the obligation and add to project returns.

Disadvantages

5 It is premature to introduce an obligation for either of these technologies. There are still significant uncertainties over large scale CCS and nuclear deployment. For CCS, the legal and regulatory framework does not yet exist and the commercial viability of the technology is yet to be demonstrated at full scale on an integrated plant. For nuclear, the timescales of planning, consenting etc. push the first deployment back to at least a ten year timeframe. The priority should be to demonstrate clean coal and CCS on a commercial scale with a small number of projects with a support mechanism specific to this demonstration requirement and to implement a licensing and planning framework which supports nuclear investment.

6 Even were these technologies capable of early commercial deployment, an obligation would be a high cost option:

- it would weaken the negotiating position of utilities with plant manufacturers who will recognise that the utilities are penalised economically by a failure to deliver the investment. The value of subsidy will pass to plant suppliers, particularly where there are a limited number, raising project costs and reducing the efficiency of the support mechanism.
- It would over-reward economic or least cost technologies. Nuclear (and in due course CCS) may be economic without this support, particularly if the EU ETS delivered a high cost of carbon in Phase III and beyond. An obligation could provide an unnecessarily double subsidy and high returns to operators. Although this double subsidy could in time lead to the level of recycled benefits falling as additional capacity were built in response to the higher returns, this would take time.
- It is subject to political risk as it can be amended by subsequent legislation. This would add to project risks and costs. This would be more of a concern with nuclear and CCS compared to renewables because of the longer period between project commitment and operation and the potential for changing the rules during this period. Implementation of an obligation now for investments which will not be in commercial operation for ten years will be of no value to investors.
- The mechanics of an Obligation are not suitable for large scale capital investments with long lead times. It would be difficult to tailor the profile of an obligation over time given the chunky nature of the investments and the uncertain project development timescales. This would mean that the obligation might need to be determined only after the timescale for individual projects had become clear. This, however, would reduce the effectiveness of the obligation as a dynamic market instrument.
- Recycled benefits would vary with the commissioning of further chunks of capacity. This could make it difficult to assess project returns. This uncertainty in the recycle benefits means that a higher average recycle benefit is required to support investment.
- It would support non-UK low carbon generation. It would be difficult to exclude eligible nuclear generation outside the UK from benefiting from the obligation where this is sold into the UK market through the interconnector, under EU internal market rules. This would mean that UK consumers would be subsidising mainly French nuclear generation, which would in turn distort trade across the interconnector.