

**Energy Policy Review**  
**Submission to the Cabinet Office - Policy and Innovation Unit**

## **Introduction**

1. The Electricity Association (EA) welcomes the Government's initiative in undertaking a review of energy policy. This submission provides a broad overview of the electricity industry's collective position on long term energy policy; reference should be made to submissions from individual companies for their detailed positions.

2. We welcome the opportunity to work with Government in developing a long term energy policy for the UK, to provide a framework for future Government decisions and one in which energy businesses will be better able to plan their own future strategies. We believe that the PIU Project Scoping Note provides a good basis for identifying and addressing the relevant issues.

3. The UK has been at the forefront of electricity (and gas) market reform of over the last decade, with the introduction of full competition in generation and supply and the application of regulatory price controls in transmission and distribution. This has produced major benefits for customers, in terms of lower prices and greatly improved levels of customer service. It has also resulted in major environmental benefits, in terms of reduced CO<sub>2</sub> and 'acid rain' emissions.

4. Against this background, it is timely to review the future direction in which energy policy should develop, given further increasing environmental pressures, and the need to continue to meet demand with secure and diverse supplies. Recent events in California have highlighted the importance of the latter and it is pertinent to compare the situation in the UK with that in California, to determine the risk of similar events occurring here. This is further discussed in paragraphs 31 - 37.

5. This submission is divided into the following sections:

**A. General principles**, which the EA believes should underpin the development of energy policy

and three issue-specific sections which review present arrangements and discuss preferred future options:

**B. The framework of regulation and competition,**

**C. Fuel security and diversity**

**D. Environmental and energy efficiency issues**

6. At this stage we have limited our submission to these key areas. We look forward to developing these and other issues (eg social aspects) in more detail as the consultation exercise proceeds.

## A. General principles

7. The challenge for energy policy is to establish a long-term framework that will continue to ensure security and diversity of energy supplies at competitive prices within the context of national, European and international economic, environmental and social objectives. The EA considers that substantial progress towards a more sustainable and secure energy system for 2050 is achievable, provided that the policy and regulatory frameworks provide appropriate drivers and incentives for change. To this end the EA considers that, wherever possible, **energy policy goals should be designed around market-based mechanisms, and the removal of unnecessary regulatory barriers to competition and innovation.**

8. Whilst market mechanisms are preferred, we recognise that they may not always be sufficient to deliver policy goals. For example, they may not always be appropriate to deal with social and environmental considerations and some long term issues. Furthermore, we recognise that it is not always clear what constitutes 'unnecessary regulation'. There is an important debate on the role of markets in resolving policy issues. In establishing an energy policy, we believe that further work needs to be undertaken on **reviewing the effectiveness of market solutions**, taking account of the particular problems arising from externalities (eg environmental costs) and social policy challenges.

9. It is important to establish a clear framework for this issue of market operation, particularly as it is in the competitive businesses of generation and supply that policy conflicts and the need for Government/regulatory intervention are most likely to arise. We accept that there may need to be inducements, eg specific delivery mechanisms to 'kick-start' particular initiatives, but these should be within a well understood policy framework, fair between players, market based wherever possible, and with minimal distortion to resource allocation. We believe it is generally possible to design market solutions which facilitate the achievement of Government policy rather than work against it.

10. Any interventions should be clearly aimed at achieving Government's energy policy **but should be removed as soon as sufficient progress has been achieved to meet the policy goal.** The use of obligations or other forms of subsidy should be transparent and predictable with explicit cost recovery mechanisms, so that any subsequent decisions can be taken in the light of the true underlying situation.

11. The energy industry is highly capital intensive and so an important feature of a long term energy policy must be the provision of new investment. Since the privatisation of the electricity and gas industries, this must come from the private sector rather than the Treasury. But because investors always have other options available for using their money, there need to be adequate incentives to encourage them to invest in the energy industry. This must be an essential feature of future energy policy.

12. Investment decisions in the electricity industry require longer planning timescales than in many other sectors of society. The industry therefore needs **clarity and transparency in the policy and regulatory framework** to enable it to adapt efficiently and cost effectively. Regulation should be based on a framework of well understood principles.

13. Policies affecting the UK energy sector are currently developed and implemented by a wide range of players, including Government Departments (eg DTI, DEFRA, DTLR, HM Treasury), and regulatory bodies (eg Ofgem and Ofreg, Environment Agency, Scottish Environmental Protection Agency, Nuclear Installations Inspectorate). In addition, policy is driven by European and international bodies (eg European Commission, Council of Ministers, European Parliament, United Nations). It is important that the relevant bodies work in unison on energy issues and do not 'compete' to determine policy, as this could undermine the efficient operation of the markets they are seeking to foster. There is a danger that these various bodies will also set energy policy in an ad-hoc manner by default and that their actions may duplicate or conflict with the requirements of EU and UK law, eg the Competition Act. The objective should be to achieve clarity in resolving the potential conflicts between such bodies.

14. An increasing proportion of both energy consumption and emissions, including CO<sub>2</sub>, relates to transport (see paragraphs 64-69). It is therefore very important that the impact of current and future transport policy on energy use and the environment is considered as part of the Review, and effective co-ordination established across Government for bringing together the policy implications in the future.

15. One solution may be for Government to charge a specific Department with responsibility for overseeing and co-ordinating energy policy, or possibly to establish a specific body charged with such a responsibility and designed to help Government achieve its long term policy aims. Whatever arrangements are made for ongoing co-ordination, it is important that **UK energy policy is established and periodically reviewed at the highest level of Government**. Such reviews might take place on a five year cycle.

16. The EA considers that a commitment to specific targets for 2050 would be premature, but that instead there should be an aspirational view of where the UK may wish to be. **The key is to set interim targets** which are appropriately challenging to provide sufficient experience of various possible approaches, technologies or instruments. This will allow a realistic assessment of needs and achievability in setting any subsequent targets.

17. To accommodate fully the potential for innovation and flexibility, **objectives should be based on achieving overall outcomes** rather than being over-prescriptive in terms of the delivery mechanisms which should be used; wherever possible, solutions should be left to the market.

18. The EA strongly supports competition in energy markets. It should be noted that competitive markets do not necessarily mean that all energy companies have an obligation to provide a similar range of products or services. Such markets encourage companies to present a range of customer offerings, with some offering innovative packages or niche services, so that **customers have the opportunity to select any company which offers the product/service they require**.

## **B. The framework of regulation and competition**

19. Electricity generation, transmission and distribution are capital-intensive businesses with long planning horizons. It is therefore important that there should be a clear policy

framework for regulation and competition, to enable companies to make investment decisions.

20. In the retail electricity supply business, competition is now well established and there should be no further need for economic regulation in the future.

21. Over the last decade, the UK's regulatory framework for electricity and gas has focussed primarily on improving cost efficiency and introducing competition in generation and supply. This approach has been successful to the extent that electricity prices for all customers have fallen by around 35% in real terms since 1990 and productivity in the electricity industry has more than doubled. This has had important benefits for UK competitiveness.

22. However, following this prolonged period of real-terms price reductions, a number of predetermined changes to the commercial framework of energy supply, eg the renewables obligation, the climate change levy and enhanced energy efficiency targets, will begin to impact customers' bills by the end of the current financial year. This will provide a higher cost platform for increasing energy retail prices in the medium and long term. The review will need to take account of the political and regulatory issues which this is likely to create and, in particular, of the potentially adverse impact on both the UK economy and low income customers.

23. We believe that the regulator should put in place effective means to assess the risk from regulatory decisions. The Better Regulation Task Force principles of good regulation recognise that Regulatory Impact Assessments (RIA) should be carried out and the Cabinet Office Guidelines require this. We believe that Ofgem policy should require RIAs to be carried out as a matter of routine and that these should include an assessment of whether the proposed change will help achieve the Government's security, diversity and emissions policies.

### *The Generation Sector*

24. In the generation sector, competition has been effective in forcing down wholesale prices; these have reduced by 20% over the last two years alone. There are now some 40 players in the generation market, the vast majority being new entrants since 1990. Whilst the UK currently has ample generating capacity, the contribution of nuclear is expected to decline from 2005 while environmental pressures are likely to lead to closures of some coal stations. Together with the higher costs for replacement flexible plants, this could result in smaller reserve margins and greater dependence on gas. It should be noted that in California there was considered to be a surplus of capacity as little as six years ago.

25. It is too early to determine how the New Electricity Trading Arrangements (NETA) will affect investment. This introduction of NETA, with firm commitments and exposure to imbalance prices from failure to deliver, has altered the allocation of risk between market participants, and removed any payment for capacity. Other things being equal this should increase entry prices and deter some projects.

26. The operation and impact of NETA should be kept under review and future energy policy should ensure that the market provides appropriate signals to encourage new

investment in generation plant. Reserve generating capacity plays a particularly important part in ensuring continuity of supply, and care must be taken to ensure that the market framework adequately remunerates such capacity.

### *The Networks Sector*

27. Electricity has an important role to play as an energy carrier, whatever primary fuels and renewable sources are used. Over the next 50 years, there are likely to be major changes in both the demand for electricity and the ways in which that demand is met. In particular, there is likely to be a significant growth in the volume of electricity generated from distributed sources, many of which will be connected to the distribution network (ie embedded generation). This will pose significant challenges for the development and operation of both the transmission and distribution networks. The development of embedded generation also has significant implications for the regulation of distribution businesses. Any change to the regulatory regime should embody transparency and allow for equitable cost-reflective charging.

28. Some types of generation will always be located away from centres of demand e.g. offshore wind and nuclear, and a robust transmission and distribution network will still be required. Indeed, the increasing range of inputs of different sizes and characteristics will require more active system management and significant investment in the networks.

29. In the networks sector, price caps and the RPI-X mechanism provide effective incentives to maximise cost efficiency. In the longer term, the regulatory framework should encourage investment for the continued provision of an infrastructure which is sufficiently robust to maintain acceptable levels of reliability. The regulatory system needs to deliver an appropriate balance between economic, environmental and security objectives in the light of the likely changes in network systems and their operation.

30. We also favour the recognition of service performance as well as costs in any price control framework. Companies initially supported Ofgem's current Information and Incentives Project on this basis, but the latest proposals result in an asymmetric penalty regime, rather than integrated incentives to encourage the right balance of price and quality (value for money) for customers. There is a risk that, unless incentives are considered as part of the overall price control framework and customer preferences are taken into account, the outcome will be sub-optimal.

### **C. Fuel security and diversity**

31. Recent problems of electricity supply in California have prompted some commentators to question the possibility of similar problems occurring elsewhere, including the UK. It is worth examining briefly the underlying problems and the lessons to be learned.

32. As is normally the case with 'accidents', the Californian energy crisis is not attributable to a single cause, but to a number of conspiring factors. A combination of

insufficient capacity, flawed market design, regulatory set-up and high demand growth has contributed to wholesale price spikes and supply shortages.

33. An important underlying cause of the problems is a shortage of generation and transmission capacity to meet the strongly growing demand for power. No power station has been built in California in the last 10 years. California has stringent air quality standards and a time consuming siting process.

34. In addition, the major Californian utilities were banned from hedging their purchase risks, forcing them into the spot market, where prices spiralled out of control. Furthermore, the market design did not provide incentives to build new plant, relying on the market's goodwill to secure adequate supplies. California's market provides virtually no long-term signals of electricity price movement and price caps have deterred generators from investing in the state.

35. California has experienced a growth in power demand far in excess of its own projections. For example, in 1998, the California Energy Commission forecast a growth of about 2.3% pa between 1998 and 2004. In fact, the monthly demand in 1999 varied between 5.3% and 21% higher than in 1998.

36. We believe that the risk of a California type of crisis in the UK over the next ten years is low. Consumption of electricity in the UK is growing at a lower rate of about 1.1% per annum. and is presently forecast to rise by around 1% a year over the next decade, although it is recognised that change drivers such as the growth of the e-economy and climate change must be kept under review. There is at present ample generating capacity to meet the needs of the economy. However, the reduction in generating capacity, particularly in the 2010-2025 timeframe, due to the closure of nuclear power stations and the likely closure of some coal plant due to environmental pressures, will need to be addressed in good time to maintain adequate capacity to meet demand.

37. At present, the generation mix in the UK is better balanced than in California and imports of power account for only 6% of total electricity requirements. California imports 19% of electricity to meet demand. Much of the imported energy and 20% of locally produced power comes from hydro plant, which may be affected by the weather. Most of the oil and gas-fired plant is over 30 years old, and requires frequent maintenance. In the UK, hydro capacity is relatively small, accounting for 6% of the total generating capacity. Coal-fired plants represent 36%, although many of these date from the 1960s, and gas-fired plants, all new capacity, 35%. Nuclear capacity accounts for 18% and renewables and other sources for the balance.

38. The liberalised UK electricity market has so far had a positive, if accidental, impact on fuel diversity. The UK currently has a well-balanced fuel mix, and the previous over-dependency on domestic coal has been removed, largely as a result of investment in gas-fired capacity. Nevertheless, if current trends continue, gas is likely to dominate the fuel mix by 2020, which will raise concerns about fuel diversity.

39. Making sure the UK keeps all the necessary options open is clearly sensible Government policy, but not directing a precise target mix. Equally Government should be

clear and open with potential investors in power stations as to policy goals and possible changes in the costs of different fuels/technologies.

40. Government has a particularly important role in promoting a favourable investment climate and in taking a lead to ensure that barriers to meeting policy objectives are minimised. This requires a clear regulatory framework and a proactive effort to overcome the barriers to new plant construction. All generation projects are adversely affected by unnecessarily drawn-out planning procedures and the "Nimby syndrome". Planning is a local issue with a tendency to long drawn out public inquiries. Government should examine how such inquiries might become low cost, short time scale reviews.

41. Unpredictable interventions by environmental and economic regulators represent a further problem. Government should promote a debate on the merits of each energy source in meeting economic and environmental objectives and should lay particular emphasis on informing the public on energy issues.

42. There is also a strong case for Government pump-priming the market for immature technologies which promote diversity and security, such as cleaner coal techniques for NO<sub>x</sub> and CO<sub>2</sub> and some of the renewables. The current Renewables Obligation provides a market based incentive scheme; this is discussed further in, paragraphs 54-55.

43. While renewables do deliver significant environmental benefits, the intermittent nature of certain technologies means that they do not necessarily meet security of supply criteria and, in lieu of other solutions such as energy storage, standby capacity must be provided to guarantee that demand can be met.

### *The International Dimension*

44. The key to security is diversity of fuels and supply sources. Free trade and liberalised markets, both inside and outside the EU, are likely to promote better use of capacity and more integrated European energy networks. Market players will have an incentive to diversify supply sources and transmission routes in order to manage their risks. Liberalisation of the European market should therefore be speeded up, with the electricity and gas markets being fully opened in parallel. The regulatory framework should ensure both that network operators are given incentives to reinforce the system and develop interconnection, and that entrepreneurial approaches to network investment are promoted.

45. Once fully competitive markets have been established in Europe, any areas of market failure can be addressed by national governments in conjunction with the EU institutions. For example, whilst supporting the principle of greater interconnection, the UK should ensure that full account is taken of any threats to national security of supply which may result from over-dependence on imports or a decline in capacity margins as a result of market signals failing to incentivise investment.

46. The main threats to fuel supply security are political disruption and politically based restrictions on fuel sources, rather than a shortage of resources. For this reason, the UK Government and its European partners have an important role to play in maintaining good relations with energy producing countries. It is essential that a favourable climate for investment is maintained and that uncertainties due to different legal regimes are reduced.

47. Given the increased role of natural gas, Russia and the newly independent states will be particularly important for Europe's future energy supplies. If the extensive gas resources in the former Soviet Union are to be developed, efforts must be made to reduce political risk. Free trade in energy and stable commercial relationships are in the interests of Russia as well as the EU countries. EU Governments should focus on promoting economic reform throughout the former Soviet Union and providing an overall framework for trade. Individual transactions should be left to commercial contracts and to market forces.

#### **D. Environmental and energy efficiency Issues**

48. Environmental issues have, in recent years, become key drivers of change in the electricity industry with climate change and 'acid rain' emissions most notably to the fore. It is anticipated that this trend will continue and intensify in the future, as demand for energy continues to increase and environmental effects such as climate change continue to grow in importance.

##### *Climate Change*

49. The EA endorses the efforts of the UK Government to achieve international progress on addressing the risk of climate change and supports the general aims of the UK Climate Change Programme. In addition to the Kyoto targets, the Government already has in place a challenging domestic target of 20% reduction in CO<sub>2</sub> emissions by 2010, based on 1990 levels. Should a reduction of 60% by 2050, as suggested by the Royal Commission on Environmental Pollution, be adopted as a further target, this would become the principal driver of energy policy, requiring very significant changes in energy production and use.

50. The joint industry/Government working group on embedded generation produced recommendations earlier this year on how best to accommodate the proposed levels of embedded generation on distribution networks envisaged within the Government's environmental policies. Whilst we believe that delivery of the recommended actions would ease the connection of generation, this in itself is unlikely to be material in delivering the levels of generation implicit in the Government's targets.

51. It would clearly be sensible to ensure at a high level that the contribution embedded generation could make to reducing carbon emissions was worthwhile, after allowing for the increased emissions arising from the manufacture of the generating plant and the network equipment needed to connect it to the system. Should financial support for embedded generation be felt to be necessary, this should be provided in a way which is cost neutral for distribution network operators and does not conflict with their incentives for long term investment in the network.

52. Focus on these issues must not be restricted to the electricity industry. It is paramount that both Building Regulations and Planning Guidance be developed to further encourage the use of 'energy saving' options - most particularly inclusion of support for PV, wind, micro-CHP and CHP types of embedded generation (either for individual premises or for 'estates'). Inclusion at the design stage will promote adequate network design and

connection to be included as sites are developed. The Government's targets for new building illustrate the impact that this could have.

### *Flexible Mechanisms*

53. The EA supports the use of flexible mechanisms and electricity companies have participated fully in the DETR initiative to develop a UK pilot emissions trading scheme. Emissions trading should enhance the economic opportunities for more sustainable forms of generation and would be a preferable option to any future extension of energy taxation.

### *Renewables*

54. The EA supports increasing use of renewable generation, both as a response to climate change and as a means of increasing energy diversity and overall security. We consider that the proposed Renewables Obligation represents a good example of how intervention to achieve a particular policy objective can be managed by a market-based approach.

55. The proposed mechanism for renewables demonstrates that policy obligations can be designed to be compatible with competition in the electricity sector and illustrates the need for determining an appropriate timescale and predictability when setting targets. The debate around the Obligation also illustrates the importance of policy clarity:

- < The Obligation is designed to produce a significant scale roll-out of renewables projects in the UK, where current levels are compared unfavourably with other countries' operational capacity, rather than as an R&D mechanism for technologies. Calls by some commentators for banding of the Obligation to support a wider range of under-developed technologies undermine this fundamental objective.
- < There have also been calls for increasing the Obligation target from 10%, or for setting targets now for beyond 2010. Again, the Obligation is designed to bring a number of renewables technologies towards commercial viability. If it is successful in this, the need for increased obligations will become redundant.

56. The EA welcomes the positive approach taken by Government to establishing the proposed first tranche of offshore wind farms.

### *Nuclear*

57. Nuclear generation is currently a crucial contributor to UK electricity production, and to the avoidance of significant CO<sub>2</sub> (and other) emissions. Unless the Government positively encourages and facilitates the replacement of current nuclear capacity, the contribution of nuclear will inevitably decline beyond 2005. Given lead times, action is needed now to replace this low-emission capacity, or to obviate the environmental consequences of its closure. A public debate is essential to consider fully the environmental benefits and impacts of nuclear energy. This is also true for alternatives such as renewables and reducing the demand for energy.

### *Energy Efficiency*

58. Electricity companies have consistently adopted a positive stance to developing and implementing the Energy Efficiency Standards of Performance (EESoPs), to be replaced by the Energy Efficiency Commitment (EEC). The purpose of the EEC might be seen as leading to the development of Energy Service Companies (ESCOs) in the domestic sector. However, there is no mechanism for judging when this transition has occurred, or otherwise, and therefore ending the Commitment. There is also less long term financial commitment to reducing consumption than to making sure the UK has an increasing proportion of environmentally benign generators.

59. In contrast to the Renewables Obligation, the policy objectives and end-point of the EEC are much less clear. The aim of the Renewables Obligation is to bring renewables to commercial viability and the structure of the mechanism allows for cost convergence in due course such that the support to those technologies gradually declines. Without similar criteria, it is difficult to judge the rationale for the EEC in relation to the general principle of removing intervention at the earliest opportunity.

60. The EA recognises that reducing energy demand offers a broad range of benefits in terms of the different themes of sustainable development and therefore supports efforts in this area, including improved building regulations and appliance standards. The EA proposed during the Climate Change Levy consultation that the Levy receipts should be recycled to fund a range of climate change measures including a programme of energy efficiency measures for the business sector. Transport is a growing sector where demand reduction remains to be fully addressed.

61. The recognition of the need to reduce demand for energy emphasises that it is oversimplistic to put the onus of improving energy efficiency on energy providers without fully addressing other stakeholders, such as appliance manufacturers, architects, builders, companies promoting new energy-consuming technologies and end-users.

### *Emissions Policy*

62. The developments over the last decade in the policies aimed at reducing emissions of the gases NO<sub>x</sub> and SO<sub>2</sub> provide an example of the effects of policy uncertainty. These gases give rise to environmental effects both in terms of air quality (health) and acidification (of ecosystems). At the level of overall objectives, the UK has its Air Quality Strategy, reflecting the European Directive, and is also a signatory to the UNECE Convention on Long Range Transboundary Air Pollution, designed to address acidification. In addition, the European Commission's IPPC Directive ensures a range of industrial processes, including power generation, are individually regulated in terms of their emissions. Nevertheless, the European Commission and Parliament sought to introduce their own National Emissions Ceilings Directive and ever more prescriptive control via the Large Combustion Plants Directive which have just been agreed.

63. Thus the industry's investment planning for improving the environmental performance of its existing power stations has been fragmented and hindered during the ongoing state of policy uncertainty while each of these agreements has been negotiated successively. This underlines our call for a clear policy direction and consistency of regulatory decisions across a range of bodies. The Environment Agency and SEPA should also be obliged to

consider the potential impact on Government's overall environmental, security and fuel diversity objectives in reaching its decisions.

### *Transport*

64. Transport accounts for about a quarter of UK CO<sub>2</sub> emissions. Most of this (about 80%) comes from road traffic. With transport emissions continuing to grow much more rapidly than those of the economy as a whole, changes to transport policy are of fundamental importance to UK climate change strategy.

65. UK Government's 'A New Deal for Transport: better for everyone' (DETR 1998) is written in 'win/win' terms. It gives opportunities for public transport, the car user, local government, etc. The paper projects that, over the next 20 years, car traffic could grow by a third and lorry and van traffic by even more. It also quotes the CBI's estimate that congestion costs the economy around £15bn per annum. These projections are seen as having 'unacceptable environmental, economic and social consequences'.

66. The latest report from the National Travel Survey (DTLR, 2001) provides statistics showing a steady rise, each year since 1975/6, in the total miles individuals travel.

67. Considerable importance is attached to the role transport plays in greenhouse gas emissions across the European Union. The EU Security of Supply green paper states that it is in the transport sector 'that the greatest efforts must be made to reduce emissions'. It sees 90% of the growth in CO<sub>2</sub> emissions coming from the transport sector.

68. The European Commission and car manufacturers reached a voluntary agreement in 1998 to reduce average CO<sub>2</sub> emissions from new cars by about 25%, on 1995 levels, by 2008. European environment ministers have set a more challenging target of around 35% reduction by 2010. The UK Government's Climate Change Programme anticipates that the EU car strategy, together with additional UK measures, will reduce the projected UK transport emissions in 2010 by about 12-14%.

69. We believe that the Energy Review provides the UK government with an important opportunity to take an objective look at the transport sector, to identify the reasons for apparent lack of achievement so far of the measures set out in their 1998 proposals and to secure a firm remedial action programme that ensures that the identified potential CO<sub>2</sub> emission savings from the transport sector are achieved.

**Electricity Association  
30 Millbank  
London SW1P 4RD**

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