



**Scottish Conservative Response to The Royal Society of Edinburgh’s Inquiry
into Energy Issues for Scotland**

July 2005

The following is the response of the Scottish Conservative MSPs to The Royal Society of Edinburgh’s Inquiry into Energy Issues for Scotland, submitted by Alex Johnstone MSP, Scottish Conservative Spokesman for Energy and the Environment.

The Royal Society’s Inquiry comes at a time when issues surrounding the future of energy provision for Scotland are rising to the top of the political agenda. While we note the terms of your remit is apparently limited to Scotland, we believe that energy policy should be developed on a UK basis.

Difficult decisions must be made in the very near future on the major developments necessary to safeguard all our futures. We welcome this Inquiry and await its conclusions with great interest and offer our position for consideration.

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General

For both domestic and business consumers of electricity, security of supply is perhaps the single most important factor that an energy policy needs to address. Security of supply became headline news in the aftermath of the terrorist outrages in September 2001, coupled with the fact that the UK will no longer be self sufficient in terms of oil and gas by the end of this decade and could be dependent on gas imports within 20 years.¹

Overdue reliance on imports risks exposing Scotland and the rest of the UK to the obvious dangers of interruption to supply from a number of factors outwith our control; these include finite resources, price increases, political instability and conflicts.

In its report on 16 March 2005, "[Meeting Scotland's Future Energy Needs](#)", the House of Commons Scottish Affairs Committee stressed that it is "vital that decisions are taken now, to obviate the possibility of, quite literally, the lights going out in Scotland in the foreseeable future"².

David Anderson, Chair of the Institute of Civil Engineers' Energy Board, is critical of the Government's policy: ³ "The Government simply isn't taking on board the generation mix that will be needed beyond 2020 if security of supply and meeting our environmental commitments are both to be achieved. A return to the blackouts that marked the 'Winter of Discontent' and the country grinding to a halt are very real possibilities in less than 20 years time".

In Scotland, the Executive has failed to outline an energy strategy setting out total requirements for our future energy production – instead it has only focused on a narrow proportion of it, namely the proportion of electricity that is generated by renewable energy sources. Currently, most of Scotland's power comes from five big plants, of which two are coal-fired, one gas and two nuclear. The coal-fired plants have life expectancies of under 20 years and there are no plans to replace their capacity (3.5GW). The gas plant (1.5GW) has under 30 years and the two nuclear plants (2.7GW) are licensed to run until 2011 and 2023.⁴

¹ Utility Week, *Can the Energy Review provide the over-arching framework the Government wants?*, 2nd November 2001

² House of Commons Scottish Affairs Committee, 2nd Report of Session 2004-05

³ ICE Press Release, '*Short-Sighted Energy Planning Threatens Bleak Future*', 1st July 2003

⁴ Professor Roger Scott, 'The Mighty Atom', *Holyrood Magazine* 15 December 2003



We now need real long-term policies for Scotland to maintain our future energy generation, and to ensure that this supply is secure.

In addition we must also consider the desirability of sustaining our energy exports to the rest of the UK, which benefits the Scottish economy as a whole.

Energy Supply

Renewables

We believe that the Executive's current energy policy has allowed wind power to get ahead in the market to the detriment of the other technologies. This has resulted in mounting local opposition throughout the country to large scale developments with consumers facing increasingly higher costs in order to meet the Government's targets. The Institute of Public Policy Research (IPPR) warned that the move towards green energy could push gas and electricity bills up by as much as 20% by the end of the decade.

Renewable energy is supported by considerable amounts of public money. The Department of Trade and Industry estimates that UK-wide, the industry will benefit from around £700 million per annum of support. This comes in a number of forms, ranging from the Renewable Obligation Certificates, grants and research funding and is borne by the consumer through higher energy prices and by the taxpayer.

A key question is: are we deriving value and benefit from our onshore windfarm developments? We are sceptical given the large scale local and environmental opposition to many of the developments, which are dividing communities and damaging the local eco-systems. If the windfarms were generating enormous amounts of low-emission electricity this would be accepted – however this is not the case. When each new farm is announced much is made regarding its generation capacity, but capacity is not the same as actual generation.

In 2003 the DTI identified that wind turbines in the UK generated 24% of their theoretical maximum⁵. The British Wind Energy Association (BWEA) quote a higher figure for Load Factor of 30% but even with this higher figure wind farms still produce a very small amount of energy. To put their output into context, Scotland's most powerful windfarm, Rothes near Elgin, is expected to produce 120 to 145 GWh a year. This is equal to 0.4% of the total energy consumed in Scotland per annum.

⁵ DTI's Digest of United Kingdom Energy Statistics



In addition to this, onshore wind farms do not deliver the huge cuts in emissions with which they are credited. Stand alone wind farms are obviously emission free, once they have generated enough energy to offset that used in their development, but of course, wind farms do not and cannot stand alone.

Wind generated power is unpredictable, inappropriate to demand and impossible to control and accordingly has to be backed up by other generators to maintain a constant supply to the grid. David White of the Institution of Chemical Engineers explains:

“Fossil-fuelled capacity operating as reserve and backup is required to accompany wind generation and stabilise supplies to the consumer. That capacity is placed under particular strains when working in this supporting role because it is being used to balance a reasonably predictable but fluctuating demand with a variable and largely unpredictable output from wind turbines. Consequently, operating fossil capacity in this mode generates more CO₂ per kWh generated than if operating normally.”⁶

Germany and Denmark know this all too well. Germany needs over 80% back up to supply energy on windless days and Denmark is forced to export 85% of its wind energy to Norway and Sweden at a net loss in 2003 of £100 million, because when wind energy generation is high Denmark cannot consume it all.⁷

Of course, Denmark is advantageously placed to be able to export its wind energy, whereas as an island we will face problems, not least with our grid provision. The research group Scottish Wind Assessment Project (SWAP) calculates that there are currently 228 wind farms in the planning system, including 12 already built or under construction, 25 approved but not yet started, 62 new applications with a further 97 pre-application proposals under way with tests being carried out at a further 32 sites across Scotland to measure wind speeds. If all these proposals come to fruition this would result in 5000 new turbines being built in the Scottish countryside⁸.

The increasing “rush to wind” will result in the building of more pylons in order to incorporate the wind energy production into the national grid. This will cause great damage to the environment and to Scotland’s landscape.

⁶ David White FIChemE., Reduction in carbon dioxide emissions: Estimating the potential contribution from wind-power, October 2004

⁷ Renewable Energy Foundation Manifesto 2005

⁸ Scotland on Sunday, 23 January 2005



We want the Scottish Executive and the UK Government to revisit their renewable energy policy. Firstly we feel that the current planning regime provides inadequate guidance to local authorities, communities and developers in relation to the siting of wind farms and urge the Scottish Executive to bring forward new planning guidance on this. Until such guidance is implemented, we call for the Executive to declare a moratorium on the determination of locally-opposed wind farm planning applications. Dumfries and Galloway Council has announced just such a moratorium on wind farm applications in its area until the Executive brings forward a “National Location Strategy” for wind farms.⁹

Secondly, we need to review the ROC system, to encourage entrepreneurs to develop the next generation of renewable energy providers that will provide reliable and constant emission free energy, like wave and tidal power, and energy from biomass and fuel cells technology. We should take a more balanced approach in supporting other renewable technologies which offer long term potential and commercial opportunity for Scotland, at a lower cost to our landscape.

With regards to wave power we must take advantage of our natural resources and build on the success of the LIMPET, (Land Installed Marine Powered Energy Transformer), the world’s first commercial wave power station, which has been generating electricity on Islay since 2000; And the Pelamis, developed by Ocean Power Delivery Ltd in Edinburgh and Orkney.

Biomass is another form of renewable energy that is underdeveloped in Scotland at the moment and which has great future potential. It is an abundant resource which would provide a boost for rural employment and unlike wind biomass generation output is simple to control.

Nuclear

Professor David Simpson, of the David Hume Institute, in his paper, *Tilting at Windmills*, April 2004, called for the government to dump wind farms in favour of building more nuclear power stations. He argued that nuclear power is half the price of wind power as subsidies for renewable sources are currently adding 2% to domestic electricity bills, and may end up costing consumers £2 billion extra each year.

⁹ Dumfries and Galloway Standard, 27 May 2005



It is highly unlikely that renewables can bridge the gap in supply that Scotland will face as their supply is too little, intermittent and the transmission system necessary to deliver the energy from the installations to households does not currently exist.

The First Minister has outlined that the Scottish Executive will not make any decisions on the future of nuclear power in Scotland until “*the issue of radioactive waste management must be resolved properly*”¹⁰. This, of course, reflects the delicate policy mix of the Liberal Democrat’s opposition to nuclear power and Labour’s unwillingness to rule it out. The Executive’s position is highly ambiguous as the First Minister would not set out when he would consider the waste question to be adequately resolved – whether it was when the Committee on Radioactive Waste Management’s Review for Managing Solid Radioactive Waste in the UK reported or when a new waste facility is built and operating, which could take up to 25 years.

We feel that the two exercises, of waste resolution and commissioning new nuclear stations, can and must run in parallel as the lengthy commissioning process means that decisions about new nuclear stations cannot be left until the last minute. We want to ensure secure and sustainable supplies of energy at competitive prices from a diverse range of energy resources through a policy founded on free enterprise and fair competition.

Furthermore, nuclear power is currently estimated to save the UK annual emissions of 8 million tonnes. At a time when our CO₂ emissions are rising, can we afford to turn our back on such a low-emission power source? In addition the Council for Science and Technology has said that a new generation of nuclear power stations is expected to increase the current volume of radioactive waste by no more than a tenth over a 60-year period.

We believe that renewable and nuclear energy are complementary and a balanced energy policy means that no one existing or potential resource should be ignored. We need to replace nuclear with nuclear to ensure that energy supply and exporting capacity are retained and existing jobs are protected.

Looking to the future, we watch the development of nuclear fusion technology with much interest and with the hope that it will indeed prove to be safer and cleaner with no long lived nuclear waste. The industry estimates that it will be at least 30 years

¹⁰ First Minister’s Question Time, Thursday 12 May 2005



until a commercial fusion reactor is available¹¹, however with the International Experimental Reactor (Iter) being commissioned in France perhaps nuclear fusion could be of use in the not too distant future.

Energy Demand and Efficiency

It is generally accepted that energy demand will increase exponentially in line with our technology reliant lifestyles. According to the [BP Statistical Review of World Energy 2004](#)¹², global electricity demand rose by almost 3% in 2003, with European Union 15 demand rising by 2.5% and the UK demand rising by 2.1%. Based on these figures, if UK electricity demand continues to increase by 2.1% per annum, then Scotland will consume **43471 GWh in 2010**.

This trend needs to be reduced and improving our energy efficiency is the quickest way to do so. Energy efficiency is widely recognised as the cheapest, cleanest and safest way of achieving Britain's climate change commitments. For instance, if every British household replaced just one 100W bulb with a 20W CFL lightbulb, the energy saved would be equivalent to that produced by Sizewell B nuclear power station.¹³

In addition, energy efficiency can make an important contribution to other energy priorities including fuel poverty, supply shortages and sustainability. Best of all, energy efficiency actually makes money for those that invest in it. For instance cavity wall insulation pays for itself in just three to four years, and then continues to save the householder £100 every year.¹⁴

We would like to see more done to promote energy efficiency in Scotland – shifting the focus from onshore wind farms to energy efficiency would be more cost effective and makes more sense for the long-term sustainability of the economy.

We now need radical measures to ensure that we make real progress in this area. Fiscal incentives must be used to encourage homeowners and businesses to become more energy efficient.

Transport

A quarter of carbon emissions come from the transport sector, a proportion that is forecast to rise as demand for road travel continues to increase, and aviation is now

¹¹ House of Commons Scottish Affairs Committee, 2nd Report of Session 2004-05

¹² <http://www.bp.com/subsection.do?categoryId=95&contentId=2006480>

¹³ Source: Centre for Alternative Technology

¹⁴ DEFRA, *Energy efficiency fact sheet*, 25 May 2004



the fastest growing source of emissions - policies must be developed to address these two areas.

However it is important that we do not penalise the motorist or the overseas traveller. Instead greener choices must be encouraged and the market for new technologies that can cut vehicle emissions must be grown and supported with additional investment in research and development. In addition public transport must be improved to provide people with a viable and attractive replacement for their cars.

Environmental and Social Issues

The formulation of energy policy has immediate impacts on both the environment and on social issues via planning and the affordability of electricity. The Executive's policy has already put many communities into direct conflict with large renewable energy developments and we want the Scottish Executive and the UK Government to revisit that policy. We believe that the current planning regime provides inadequate guidance to local authorities, communities and developers in relation to the siting of wind farms and urge the Scottish Executive to bring forward new planning guidance on this. Until such guidance is implemented, we call for the Executive to declare a moratorium on the determination of locally-opposed wind farm planning applications.

With regards to social issues, we know that there are still many Scottish households with lower incomes who are spending a high proportion of their income on fuel costs. However, much was achieved by the privatisation of utilities by the Conservative Governments of the late 1980s and early 1990s. As stated by the OECD:

*"since privatisation, most of the regulated utilities have achieved substantial improvements in productivity, and consumers have benefited from large reductions in real prices as well as improved quality of service"*¹⁵

Since privatisation, the consumer has benefited as follows:

- 29% fall in domestic electricity prices in real terms¹⁶
- 29% fall in domestic gas prices in real terms¹⁷

The Conservatives also introduced the Warm Deal Scheme which, alongside the Executive's Central Heating Programme, is due to end in March 2006. The Executive needs to act now to re-commission or replace these schemes to ensure that continued

¹⁵ Conservative Campaign Guide 1997

¹⁶ As stated in the Electricity Association Press Release, 21st January 2001

¹⁷ Figures from House of Commons Library, based on ONS database



support is available for those who need assistance in upgrading their heating systems and improving the energy efficiency of their homes.

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