

RESPONSE TO RSE ENERGY INQUIRY

- 1. How should Scotland provide for its energy needs over the next 5, 15, 30, 45 years, in the context of the likely UK, European and global energy environment?**
The Industrial and Power Association has a particular focus upon electricity, and sees the power needs of Scotland in the short term (5-10 years) being met from the existing and developing wind power infrastructure.
In the longer term, Scotland will need a balanced and sustainable power supply, comprising a mix of renewable power and sustainable non-renewable power. This will be determined by the operational needs of an integrated electricity generation, transmission and distribution system.
- 2. Should Scotland aim to be self-sufficient in energy in general, and in electricity in particular, despite trends towards interdependence within Europe?**
With regard to supply and demand, Scotland is presently self-sufficient in electric power within an integrated UK system, and is an exporter of power. To maintain good balance in an integrated UK power system, there needs to be significant power generation in Scotland. It is the fuel aspect of power that determines true self-sufficiency, and Scotland is unlikely to be self-sufficient in fuel for power.
- 3. What are the possible implications and consequences for Scotland, and the UK, of becoming increasingly reliant on imported oil and gas for their energy needs?**
In the context of electricity and security of supply, the options for Scotland include power generation from renewable, nuclear and coal based systems. Thus there is a solution to supply and cost issues associated with oil and gas.
Oil is not used to any great extent within the Scottish power system. However, there are gas powered facilities that could well become uneconomic as the North Sea source depletes.
Hence the longer term strategy should focus upon renewables, coal and nuclear.
- 4. What are the feasibility, availability, reliability, sustainability, efficiency, capacity and risks of the different energy generation technologies?**
The key factor missing from this question is economics. Economics is the key factor because energy is a matter for the market place and not for government, and as such, economics will determine the way ahead for the energy sector.
One can consider the various technologies, and, in the future, the economics of electricity production, for example, will be significantly affected by the impact on the environment of the technology of production, and by the need for security of supply.
The role of government is to set standards for environmental performance, and, for national security purposes, security of supply.
A brief comment on currently available technologies in response to the question,

 - Wind; proven, reliable, sustainable, high availability, low risk, but inefficient in energy capture and of low and intermittent capacity,
 - Nuclear; proven, reliable, high capacity, high availability, low risk, questionable sustainability (waste), low efficiency

- Coal; proven, reliable, high availability, medium efficiency, low risk, but needs to be proven as a low carbon technology
- Gas – Combined Cycle; proven, reliable, sustainable, high availability, low risk, high efficiency, high capacity, but needs a high quality fuel
- Hydro; proven, reliable, sustainable, high availability, low risk, medium efficiency, but water supply can cause intermittency, and the high capacity sites have been exploited in Scotland

5. What are the likely trends, and uncertainties, in the availability and cost of energy sources over the next 20/45 years?

Two years ago, no one would have predicted an oil price of \$60 per barrel in 2005, even although the reserves picture for oil was well established. The uncertainties, caused by the over-stimulated economies of China and India, dissident and political action affecting supply and supply infrastructure, serve to undermine predictions. It is certain that the desire of lesser developed countries to enjoy the standards and comforts of developed countries will apply great pressure to the availability and cost of energy.

Market forces may cause a dampening effect on the rate of growth of energy demand, but the rate of demand will continue to increase.

6. What are the economic issues of capital investment in the supply and distribution of energy that need to be considered?

Whilst electricity is a market commodity, the industry today is totally influenced by government policy, whether it is environmental standards, planning legislation, consents, etc.

Like any industry, the power industry aims to produce the lowest cost product, and therefore decisions on capital investment are made to an eye on policy and legislation.

Every major capital investment in the power industry over the last 15 years has been made as a result of government policy. The Privatisation and Dash for Gas policy introduced by the government in the late '80s resulted in a capital investment of around £10 billion, and the Renewable Energy policy now in force will bring about capital investment of similar proportions.

The issues for the economy are that the invested capital will be spent and has been spent by and large in other countries on foreign supply to the detriment of Scottish and UK industry.

7. What are the key issues surrounding the development of Scotland's bulk electricity transmission and local distribution systems?

It is accepted that, for the potential of renewable energy to be realised, capacity within the present transmission system is an issue.

There has to be a solution, in terms of investment (and who pays), planning difficulties and acceptance of the public of the "marching towers".

Other issues include the matter of future capacity for marine renewables, should capacity be reserved at the expense of wind power expansion?

Should the current capacity required by coal and nuclear power be reserved for the replacement in future of these facilities?

8. What will the impact of energy availability and price be on the demand for energy by commerce and industry in Scotland?

The impact is likely to be that demand will reduce, since high energy users will be forced to relocate to lower labour cost and low taxation countries to maintain competitiveness .

9. What are the likely trends in the domestic demand for energy for space heating and other purposes? What would need to be done to achieve major savings? What are the investment costs?

The domestic demand for energy will be affected by the economic state of the nation. If the UK and Scotland remain as a prosperous country (in relative terms), the demand will not reduce. The population have achieved a level of comfort, leisure activity and social activity that will not be sacrificed for the sake of the planet. Major savings are not possible in this sector unless energy prices and/or taxes are raised to the level of “pain”. However, consideration of fuel poverty will impact upon such decisions.

10. What are the likely trends in the demand for energy for transportation in Scotland? What is the likely time-scale and scope for substituting other power sources for fossil fuels? What are the likely investment costs?

Unable to comment on transport.

At present, wind power is being introduced to reduce the use of fossil fuel power.

This is possible only through financial support by the taxpayer.

As environmental legislation takes effect, the low and zero carbon power sources will become the only source of power, without subsidy.

A potential solution is to use fossil fuels for power with the removal or abatement of CO₂, therefore fossil fuels will most likely remain as a source of power.

Likely timescales are;

- Wind, 2010 for significant substitution
- Marine Energy, 2015 for modest substitution
- Nuclear, 2015 for substantial substitution
- Clean Coal, 2020 for substantial substitution

Investment costs are too difficult to predict with any accuracy at this stage.

11. What are the environmental concerns that need to be taken into account, in terms of the impact on ecological and other natural resources, as well as waste management and impacts on the landscape?

Unable to comment

12. Can the objectives of environment improvement and economic growth both be met without a major increase in energy costs? What steps should be taken to enable an informed debate on the issue?

The major increase in energy costs will come about due to market conditions, rather than through meeting the objectives of environment improvement and economic growth.

13. What are the social values and consequences of energy generation and distribution to employment opportunities, health, and energy affordability?

The outstanding renewable and other energy resources in Scotland should result in significant opportunities in employment. However, recent history has shown that the exploitation of these resources have brought little benefit to Scotland or the UK due to the lack of action by government to ensure that the economy benefits from policy. The response to Question 6 refers to this point.

With regard to health, a comparison of countries where electricity is not widely available and developed countries shows that lack of electricity is detrimental to health. Electricity = health.

Fuel poverty within certain sections of the community is a matter of concern in Scotland as energy prices rise. However, it is a matter for government to solve this problem, albeit at taxpayers expense.