



*Q1. How should Scotland provide for its energy needs over the next 5,15,30,45 years, in the context of likely UK, European and global energy environment?*

The objectives of energy policy in Scotland should be:

- moving towards a low carbon economy in alignment with the UK Government;
- ensuring security of supply at competitive prices;
- encouraging and supporting energy efficiency across all sectors of society.

Scotland can not develop an energy policy independently of the rest of the UK, or the EU or the international community. To do so runs the risk of doing severe damage to business competitiveness and our long-term economic prospects. It would not, for example, be appropriate to set a separate, greenhouse gas emission target for Scotland. Nor should Scotland seek to opt out of the liberalised, UK energy market, as this will deny Scottish businesses the opportunity to enjoy the benefits of price competition

The market-based approach to energy in Scotland and the rest of the UK has generally served business well and we believe that it will continue to be the most effective method of driving innovation and technological development, and maintaining competitive energy prices. Political 'interference' in the market should be kept to a minimum to maintain investor confidence.

That does not mean that the Scottish Executive does not have a role to play in limiting the risk to the market of meeting our future energy supplies, but it is a very specific role. The Scottish Executive should limit itself to:

- policy clarity so that business users of energy and energy supply businesses can plan business decisions and investment strategies with more confidence;
- political leadership to facilitate national debate and inform public opinion on contentious issues (role of nuclear) and, more fundamentally, educate the public on the need for the behavioural and lifestyle changes that will almost certainly be required to make serious inroads into energy consumption;
- timely decision making – existing infrastructure will reach a generation 'cliff-edge' in around 10 to 15 years but plant build time will mean that decisions will need to be taken much sooner;



- exert all the influence it can over the Treasury to create a stable and supportive North Sea fiscal regime to encourage the maximum cost-effective exploitation of UK indigenous oil and gas reserves;
- R&D support for new energy technologies;
- ensuring that the planning reforms outlined in the recent White Paper are implemented so that strategic energy infrastructure is delivered through the National Planning Framework.

*Q2. Should Scotland aim to be self-sufficient in energy in general, and in electricity in particular, despite trends towards interdependence within Europe?*

Self-sufficiency would bring the advantage of security of supply but it would not be a viable policy unless self-sufficiency can be achieved at an affordable/competitive energy price for business.

*Q3. 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?*

The transition to becoming an energy importer is not a fundamental problem in itself (most industrialised countries are in this position), but it will need to be managed carefully, by the Government working with the energy industry. Whatever decisions are taken about new nuclear generation, the UK will need to import significant amounts of gas as UK Continental Shelf production declines. The Government should free up obstacles to the necessary infrastructure investment (e.g. planning laws), and promote the importance of gas being imported from a diverse range of sources (which is the likely outcome of current private sector investment strategies). In addition, the UK Government must promote liberalisation of the EU gas market.



*Q4. What are the feasibility, availability, reliability, sustainability, efficiency, capacity and risks of the different energy generation technologies?*

We are not qualified to offer a detailed analysis of the relative technical merits of the different power generation techniques that are available. However, there is no reason to believe that any of the technologies that are currently under consideration, from nuclear to wind to wave to biomass to carbon sequestration, could not be developed sufficiently to meet all or part of our energy needs.

Current market mechanisms are focusing investment on cost effective and proven technologies (such as gas-fired power stations and onshore wind). Any decision to adopt a different mix will, ultimately, be a political choice. It will be determined by the political sensitivities and consequences of different options (nuclear, for example) and the extent to which the Government/Scottish Executive is prepared to invest in R&D to develop and test new technologies that the market perceives to be too risky or uneconomic.

The priority of business is for the politicians make choices that recognise the primacy of business competitiveness in global markets and which, as a consequence, do not result in unnecessarily high energy costs on business.

Two other issues of practical significance also need to be considered. First, construction/civil engineering capacity in Scotland is already being stretched. For example, the industry already has to cope with record levels of investment in new and upgraded water and sewerage infrastructure, as well as the pull on resources/skills caused by other large-scale, national, construction projects (Terminal 5). This may also impact on the ability to deliver the construction programme required to replace and upgrade existing generation and distribution capacity.

Second, in order to maintain and develop a diverse range of technological options for power generation, it is necessary to be able to draw on a range of appropriate engineering, technical and science skills. There are concerns that the UK's engineering and technical skills base is declining and this will have severe implications.

*Q5. What are the likely trends, and uncertainties, in the availability and cost of energy sources over the next 20/45 years?*

The position is not clear but higher prices for the foreseeable future seem to be a natural consequence of growing global demand, the cost of carbon reduction and the need to invest in generation, transmission and storage infrastructure. The need to replace 30% of UK generating capacity (as existing nuclear reaches the end of its life and coal generation is increasingly constrained by EU environmental legislation) will also be a factor.

Looking further ahead, there are many factors creating uncertainty:

- long-term, economic growth rates in the developing world and the extent to which these countries will be incorporated into the global response to climate change;
- the danger of global, political instability and its impact on energy supplies;
- how quickly new technologies develop and become economically viable;
- whether Scotland can establish technological leadership in emerging technologies, which would enable us to secure valuable export markets and income, thus partially offsetting the overall 'cost' of energy;
- the extent to which the market will be allowed to dictate the pace of technological development and the impact of Government intervention on investor confidence and the operation of the market moving forward;
- the extent to which different energy users, and business in particular, will be expected to subsidise lower energy prices for low income groups;
- how far and how fast the EU's environmental agenda will progress.

*Q6. What are the economic issues of capital investment in the supply and distribution of energy that need to be considered?*

We are not able to respond to this question.

*Q7. What are the key issues surrounding the development of Scotland's bulk electricity transmission and local distribution systems?*

We are not able to respond to this question.



*Q8. What will the impact of energy availability and price be on the demand for energy by industry and commerce in Scotland?*

Business, particularly in the manufacturing/engineering, sector has already become much less energy intensive over the last 30 years, through a combination of commercial pressure/global competition and the implementation of public policy measures such as Emissions Trading and the Climate Change Levy. None of these pressures is likely to diminish significantly and energy prices are likely to remain higher than in the 1990s', so this trend will continue and the manufacturing and engineering sectors will strive to become even more energy efficient, although for many, diminishing returns have already started to set in.

The trend towards energy efficiency is not restricted to manufacturing and engineering. Some of Scotland's largest financial services companies are already working extensively with organisations such as the Carbon Trust to improve their performance. This trend is likely to continue as more and more commercial/service functions can be outsourced or moved offshore and there is a compelling need to improve the efficiency of UK sites to compete.

In its recently published strategy document "Going for green growth: a green jobs strategy for Scotland", the Scottish Executive highlighted the extent to which many different business sectors are already responding to new environmental standards by directly improving their energy efficiency or indirectly improving it through better overall resource management.

All businesses have to respond to higher energy prices by improving their energy efficiency and this is particularly true of the SME sector, where efforts to date have been patchier. Public policy has, to date, offered little incentive, and raising awareness of the opportunities for energy efficiency and incentivising change needs to be a key element of Scottish Executive policy moving forward.

*Q9. What are the likely trends in 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?*

We are not in a position to answer this question in detail. Reducing household energy consumption and/or improving household energy consumption will be necessary. But it is very clear that significant shifts in behaviour and lifestyle will be required and it is not yet apparent that the majority of people are willing to make the changes necessary. A sustained 'education' campaign will be required to facilitate change.

*Q10. What are the likely demands 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?*

A number of public policy initiatives are already planned that could significantly impact on car usage and, therefore, reduce the demands for energy for transportation. In Scotland, the Executive is now putting 70% of its transport budget

into public transport and this should, eventually, produce tangible results and create viable alternatives to the car as a mode of transport for more people. The UK Government, meantime, has announced plans for a national road-pricing scheme. In addition, changing working practices and greater use of ICT mean that homeworking is growing in popularity. The most recent DTI Workplace Employment Relations Survey reveals that homeworking is available in nearly 30% of workplaces (almost doubling since 1998).

However, balanced against this is the fact that travel to work distances are increasing for many people (in many cases because house price affordability is constraining the choice that many people have about where they live relative to their place of work). And, ultimately, Scotland is geographically remote from many of its main markets, and raw materials and finished products often need to be transported long distances, and much of that will be transported on the road network. Freight transport is likely to grow by around 5 to 7% per annum. Urgent action is required to improve rail freight facilities and capacity so that more goods can be economically moved by rail or by water (canals).

In terms of developing new technologies to replace fossil fuels, other organisations, such as ITI Energy in Aberdeen, will be better qualified than we are to comment on this. Our understanding is that hydrogen fuel cells for cars could take as long as 30 years to reach the mass-market stage, and there are some big obstacles to achieving this target. In particular, how you generate, transport, store and use the hydrogen in a safe, cost effective and energy efficient manner.

Battery powered electric vehicles are also potentially viable but much more research is required to secure greater battery capacity.

With regard to lorries and freight transport, we have been advised that it is unlikely that alternatives to diesel will form more than a niche market for many years for goods vehicles over 7.5t gross weight. Transport is a very competitive market with low profit margins and it would be a very brave freight operator who invested in an alternative fuel with unknown residual values for the vehicles.

Natural Gas (CNG and LNG) will continue to have a small penetration into the market but the UK Government's very rigid and tight interpretation of what it believes to be the EU rules has effectively killed any expansion. Grants of up to 70% of the additional vehicle cost (around £20,000) used to be available. These have now been stopped pending agreement from the EU on the details of the revised grant scheme. It is believed that this will limit the grant to only 30% of the additional cost less any savings from the reduced cost of the fuel over the first five years of the vehicle's operation. This will reduce the grant for a typical gas vehicle from £14,000 to around £4,000.

Bio-diesel will continue to increase its market share but, at present, only a 5% blend of biodiesel in fossil diesel (with both having to meet strict standards) is accepted by most engine manufacturers. Some new engines are available which will accept a higher percentage blend, but virtually all of the existing vehicle parc will only accept the 5% blend.

From the Governments own forecasts, hydrogen is not expected to be used as a fuel for heavy goods vehicles within the next 40 years.

For goods vehicles up to 7.5t gross weight LPG (a fossil fuel) is in common use but it is expected that hybrid diesel/electric vehicles will become more common. At present these are expensive and heavy with unknown lifetime costs but development work is taking place.



*Q11. 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?*

Business recognises that decisions can not be taken without regard to their environmental impact. Other organisations are better qualified than the CBI to comment in detail on the environmental impacts of different energy generation options.

*Q12. Can the objectives of environmental 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?*

We believe that the twin objectives of economic growth and environmental improvement can both be met without the need for a ‘major’ increase in energy costs. It seems inevitable that all energy users will pay more for their energy in the future than they have done in the recent past but these increases need not be excessive.

From a business user perspective, what is critically important is that the pace of environmental improvement is not driven significantly further or faster in this country than it is elsewhere, so that our businesses can maintain relative, competitive parity with their global competitors.

It is also important that price rises are, as far as is possible within a largely market-driven system, predictable so that businesses can plan appropriate adaptation strategies. In our answer to Q1, we highlighted the importance of the Scottish Executive providing political clarity so that its short, medium and long-term policy objectives, and the potential impact on energy prices, are well known and understood. This will assist businesses to prepare and adapt.

*Q12. What are the social values and consequences of energy generation and distribution on employment opportunities, health and energy affordability?*

Tackling fuel poverty will be a central plank of the Scottish Executive’s energy strategy moving forward and some resources will probably be directed to ensuring that energy bills for low income groups will be kept down. We would prefer to see these resources provided directly from the Scottish Executive’s overall spending budget, and not from subsidies from business through higher energy bills. Increasing business costs in this way will risk competitiveness and jobs, undermining long-term prosperity for more people.

