



Supporters of Nuclear Energy

The above organisation submits the following note to the Government's energy policy review because it believes that Britain's present approach to energy is contradictory and prejudices our economic performance in the medium term.

SONE

SONE is a group of individuals - it has no corporate members - who have come together to proclaim their belief that, on the basis of the past 45 years' experience, nuclear is a safe, reliable, economic and clean way of generating electricity and should remain part of our overall energy supplies.

We would point out that during that period not a single death has been recorded in Britain as a result of a radiation accident. The current nuclear output of base load power, representing 25% of total electricity generated, also avoids the production of 62mt a year of carbon dioxide, the main greenhouse gas, being poured into the atmosphere, or some 11% of total production. We deal with the question of nuclear's economics below.

CURRENT ENERGY POLICY

We claim that current energy policy is contradictory for a variety of reasons:

1 - it encourages the consumption of energy by seeking to depress the price when the stated objective is to minimise greenhouse gas output and thereby minimise climate change.

2 - its so-called climate change levy discriminates against 25% of Britain's electricity output (nuclear) which does not pollute the atmosphere with greenhouse or acid rain gases.

3 - it does not require all sources of energy - only nuclear – to reflect the best estimate of the cost of their impact on the environment, of rectifying that impact and of decommissioning and clean up costs in their current price; in other words, by failing to require a consistent approach to pricing it distorts the market.

4 - it places undue reliance on the development of often unproven and unreliable renewable sources without strict regard for costs apparently for political reasons; wind power, the most advanced renewable source, is seriously defective in an advanced

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industrial economy by its lack of continuity and the need, in the absence of a means of storing its output, for expensive stand-by generating plant.

5 - it similarly places undue reliance on energy conservation which, while important in improving the efficiency with which energy is used, is likely on the basis of experience at best only to shave the growth in energy consumption.

LIKELY CONSEQUENCES

As things stand, the Government recognises, on the evidence of its public utterances, that it will fail to maintain its Kyoto obligations soon after it has achieved them, assuming it does even that given the likely rate of increase in demand for energy. This is because the current 25% component of electricity supply generated by nuclear means will be progressively run down over the 15-20 years from 2006 to a mere 3% or less, and then ultimately to zero.

On the bold assumption that renewables make a 10% contribution to electricity generation (as distinct from energy supply) by 2010 - and the fact that their role is limited thereafter by the technical requirements of the national grid - an alarming gap in clean electricity supplies is likely to open up during the second decade of the 21st C.

To reduce the situation to simple arithmetic – and assuming no growth in electricity demand - a 12% shortfall in pollution-free electricity supply can currently be forecast ie $25-22=3$; $3+10=13$; $25-13=12\%$. But the gap is likely, on present policies, to be far larger than that, given the likely growth in demand, fuelled by information technology which is now estimated to take anything from 8-13% of Californian electricity output.

To fill it would require a) a massive increase in the use of fossil fuels for electricity production or b) a swingeing increase in energy taxation to damp down consumption, with consequent effects on economic performance; and a vigorous energy conservation programme. A combination of all of these measures seems inevitable without a technological breakthrough into, for example, the fuel cell/hydrogen economy (which would require a massive input of energy to secure the hydrogen) or some undreamt of method of producing clean electricity.

This is because the nation persistently refuses to contemplate developing a tried and tested means of clean electricity generation - namely nuclear.

WHY WRITE OFF NUCLEAR?

Until recently, the Government's policy, reiterated in consultative document after consultative document, has been to write off nuclear power for three main reasons:

- 1 - it is claimed to be uneconomic ;
- 2 - it is said to have an unsolved nuclear waste problem.
- 3 - its reputed problem with public confidence and acceptance.

"Uneconomic "

In spite of providing 25% of current British electricity output, nuclear is generally dismissed as uneconomic as compared with its cheapest but unclean rival: gas. In fact, its current disadvantage after the recent doubling in the price of gas is put at 0.7p a unit. This would be a serious disadvantage if the comparison compared apples with apples. In fact, it does anything but that.

Gas, like coal and oil, does not take account of the estimated costs of its pollution in its current price. Its 0.7p a unit advantage ignores the medical costs of its atmospheric pollution and the financial consequences of its production of greenhouse gases. No allowance is made for the exceptional sensitivity of the price of gas which roughly doubled to industry in the year 2000. Nor is there any calculation of the cost of the risks which will increasingly be run by relying on imported gas, often from politically volatile areas.

By the same token no credits are given to nuclear for the cleanliness of its power generation, for the ample availability of recycled uranium fuel or for the predictable stability of the cost of that nuclear fuel over the longer term.

Planning regime

On the contrary, every effort is made to handicap the development of nuclear energy and the current regulatory process seems admirably designed for that purpose. Nuclear has to secure two-stage approval for its projects involving the Nuclear Installations Inspectorate (NII) and the Environment Agency (EA). The NII is generally in the lead during the design and construction phases but, with developers then already committed, the EA has to approve the environmental impact. This involves an extensive consultation exercise to which the EA has introduced the need not only for the plant's justification in terms of discharges but also its commerciality.

There is no doubt that if our other energy industries or the chemical or hydrocarbons industries were regulated in the same way, Britain would soon become an economic cripple.

In short, the claim that nuclear is uneconomic is superficial and facile. Instead, investment decisions turn not on a rational examination of comparative real costs but on the higher front-end costs of nuclear compared with gas, regardless of the likely 50-year working life of a modern nuclear power station, compounded by all the uncertainties arising from the two-stage regulatory system.

Nuclear R & D

Claims that nuclear is "uneconomic" also take no account of the R&D in train across the world on new nuclear capacity and especially the work in developing a derivative of the British High Temperature Reactor called the pebble bed reactor in Japan and China and in South Africa where British interests are closely involved. The pebble bed

reactor has two beneficial features: its high degree of safety and its susceptibility to production in relatively small units - eg 110MW.

Nor does the dismissal of nuclear's economics take account of the fact that nuclear energy could cleanly power the development of a hydrogen/fuel cell future. In other words, nuclear power is admirably suited to meeting our existing and possible future requirements.

Nuclear waste "problem"

We can state authoritatively that there is no scientific or technological problem involving the handling, treatment and safe storage over the long-term of radioactive waste. The problem is entirely a political one. It lies in the political courage, which has so far been lacking, of politicians to designate a site or sites in the UK as, for example, the Swedes have done.

Public Opinion

It is claimed that the public is hostile to nuclear power. But there is no evidence that the majority of people whose local economy is underpinned by a nuclear power station or a nuclear processing plant are also hostile. Nor is there any evidence that public opinion would remain hostile if nuclear power were seen as a proven way of reconciling the need for continuous supplies of electricity with combating global warming while, at the same time, avoiding high taxation to damp down demand.

There is much evidence that the entire nature and record of nuclear energy has been grossly distorted by anti-nuclear campaigners who exploit public ignorance. There is every reason to suppose that, if the Government were to decide that Britain's future needs demanded a regeneration of the nuclear industry and set in place a public education campaign to counter anti-nuclear propaganda, it would steadily win consent. Put another way, the public would not lightly forgive a Government which, for want of that political courage and effort, permitted the nation to run short of clean electricity or to be taxed unnecessarily and rendered commercially uncompetitive.

WHAT THE GOVERNMENT SHOULD DO

We return to the arithmetic. If the Government is serious about its medium term need to achieve and sustain its Kyoto commitments and to secure Britain's electricity supplies, it needs to encourage the development of nuclear energy NOW. Not tomorrow, but today.

The reason for the urgency is the time it takes to plan, secure the permits and then build a nuclear power station. This is currently put at some 10 years. If the gathering shortfall in clean electricity generation (and gathering excess of greenhouse gas production) is to be avoided in the second decade of this century, we need to be building new nuclear stations now.

Unless we do so, we may well discover that when the need for nuclear power becomes acute we shall have to import nuclear expertise and capability which ironically, as it

would then appear, Britain pioneered.

To develop nuclear power in the national interest requires four things:

1 - The Government should dispel public anxieties about safety by declaring that nuclear power not only can but has been developed safely, as its record in Britain over the past 45 years show, and that the Government's own inspectors exist to ensure that this record is maintained.

2 - The Government should make it clear that there are no scientific, safety, health, engineering or cost issues in the way of a dealing with nuclear waste and should get on with designating a site for a repository.

3 - The Government should ensure that nuclear is at no disadvantage vis a vis other sources of energy whether emitting greenhouse gases or not.

4 - The Government should secure a fair and effective regulatory regime for nuclear energy which does not place nuclear developments in the double jeopardy of successive NII/EA approval; consent for construction and operation should be simultaneous.

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