Arthur D Little

Press release

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The Real Issues in a New Nuclear Programme The Current Energy Review is Just the Beginning

The public may have the impression that any "new nuclear power" decision in the Energy Review is a simple yes / no. But any decision by the Government in favour must say how. A simple "yes" from the Government will not persuade the private sector to finance and build a nuclear power programme.

There are four main reasons for building new nuclear stations - carbon free electricity production, energy diversity in terms of fuel source, geographic source etc to ensure security of supply, a hedge for electricity consumers against the risk of high fossil fuel prices, and a view that as a long term commercial investment new nuclear might be a fully competitive method of electricity generation. The fundamental problem is that many of the public policy benefits of nuclear do not accrue directly to a private sector owner. Unless the Government puts in place appropriate structures, a private generator cannot capture in financial terms the full benefits of carbon-free generation, energy diversity and the value to electricity consumers of a hedge against fossil fuel prices. And the private sector will not build significant nuclear capacity solely as a bet that new nuclear stations will be the cheapest form of electricity generation.

The answer to "how?" must be to create an environment in which the private sector is prepared to invest in 15 to 20 GW of nuclear capacity at a cost of say £15 billion to £25 billion. (Building only a small number of stations will not achieve the public benefits outlined above). Creating this environment for nuclear poses a number of fundamental questions - the nature of competition desired in new nuclear, the nature of competition with other generation technologies (including renewables), arrangements for back-end liabilities, and the level of financial and contractual support required to promote new nuclear generation.

The Government has to decide what type of market it wants within nuclear generation. Competition could be stimulated by licensing multiple designs from

different manufacturers, ensuring the availability of suitable sites and ensuring that there are a number of competing nuclear operators.

But equally important is the interaction between nuclear generation and renewables. Quotas for each could be set, with each form of carbon free generation operated in isolation. One of the arguments against nuclear generation is that renewables can provide all the carbon-free generation required. But renewables have their own environmental objections. Nobody can be sure of the competitiveness of renewables against new nuclear in 10 or 20 years' time. One answer could be to allow renewables, new nuclear and even some new clean coal technologies all to compete towards fulfilling a requirement, rising to say 50%, for carbon-free generation. Clearly the current Climate Change Levy would have to be replaced by a mechanism that favoured all carbon-free forms of generation.

The fact that some of the technical issues for nuclear decommissioning and nuclear waste disposal are still unresolved is often put forward as a major reason why new nuclear stations should not be approved. However the creation of the NDA and the precedent of British Energy's new arrangements, where the Government has a share of the cash flow for assuming back end nuclear liabilities, give a blueprint of how to find a basis for new nuclear in this respect.

Any financial support required by new nuclear will inevitably have to come from electricity consumers, probably through a premium income. Is it fixed or variable? Related to some form of carbon credit? If nuclear subsequently proves to be unexpectedly highly profitable, will consumers be compensated for their earlier support?

The Government could also address ways of minimising the cost, time and risks of the planning process and ensure that designs can be licensed at an early stage, with an assurance of no further changes. Given the scale of investment and the long lead times, investors will want to be certain that the basis of the original investment cannot be changed by a subsequent Government or by a change in the regulatory regime. Some form of contractual arrangement with Government is probably required

If the Government does decide that it would like to see a new private sector nuclear programme, one must recognise how much work lies ahead, before the construction of the first plant can start. Replacing all nuclear existing capacity by 2023 seems almost impossible. But the Government should not take any initial decision until it can see a way of resolving the "how?" issues.

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Notes to Editors:

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