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The Government's climbdown on nuclear power leaves its energy policies in a shambles. Walter Patterson argues that a new breed of cleaner, more efficient gas and coal stations should now be built but fears that electricity privatisation will work against change

## Now what?

As Britain's nuclear power programme sinks slowly in the west, we bid farewell to the shining, not to say radiant, vision that has dominated energy thinking in Whitehall for three decades. Is it really the end for nuclear power in Britain? If so, what might emerge in its stead - in an ideal world, or in the less-than-ideal world of Britain in the 1990s?

Anyone acquainted with the true history of British nuclear power will be acutely aware that those responsible for nuclear policy have long been able to believe six impossible things before breakfast. Even on 9 November and after, Energy Secretary John Wakeham proclaimed that removing the nuclear stations from privatisation, and inviting the Central Electricity Generating Board to think again about its applications for pressurised-water reactors (PWRs) beyond Sizewell B, would "maintain the nuclear option". Clearly reality has yet to cross the threshold at the Department of Energy. When Mr Wakeham duly announces the abandonment of Sizewell B, he will doubtless characterise it as a vote of confidence.

For abandoned it must surely be. Sizewell B now becomes a one-off reactor - yet another in Britain's inexorable series of unique demonstration plants, and already manifesting the attributes of its precursors. Only two years into construction its cost is already substantially over the estimate given to the planning inquiry. The CEGB told the inquiry that Sizewell B would produce electricity so cheap it was worth building ahead of the need for new capacity. The latest official leak indicates, on the contrary, that Sizewell B's electricity will cost 8 to 10p per unit - three times the cost of coal-fired electricity.

Indeed, Joe Coral and William Hill could entertain the punters by offering odds as to which "unassailable" nuclear plant is next for the chop. Sizewell B is clearly the favourite; but Dungeness B, the hag-ridden "flagship" of the AGR programme, must be close behind. For those who fancy a flutter on a long shot, try an each-way bet on THORP, the Thermal Oxide Reprocessing Plant at Sellafield.

Earlier this year the House of Commons Select Committee on Energy referred to the story of THORP thus far as a "sorry saga". Estimated to cost £300 million, it has now passed £1.4 billion; and its schedule continues to slip. British Nuclear Fuels nevertheless assured the Committee that its contracts with the British electricity industry were unbreakable. They are "cost-plus" contracts, to reprocess spent AGR fuel in THORP, at whatever price BNFL eventually sets, to recover the cost of THORP and give BNFL a handy profit.

The rocketing cost of reprocessing figured prominently in the City's rejection of nuclear power. However, even BNFL senior management now admit that reprocessing is unnecessary. One executive even pointed this out to BNFL staff during the filming of the fascinating documentary "Inside Sellafield" broadcast, ironically, on 9 November, while the first impact of the government pull-out was still reverberating. Will the Treasury sit twiddling its thumbs, while BNFL taps into the jugular of the new state-owned nuclear power company? Might the Treasury not instead suggest that the new company put at least some of the floundering AGRs - not only Dungeness B but also Hartlepool and even Heysham A - out of their misery right away?

In any case, AGR fuel can be stored unprocessed in a dry vault, pending research into final disposal; and the CEGB has already applied to build a dry vault at Heysham. Moreover, BNFL's contracts with foreign clients allow BNFL to return their spent fuel unprocessed after 1993 - without paying back a single yen or deutschmark. What price THORP? Place your bets.

None of the above means that Britain's nuclear power will disappear. On the contrary, its leftovers - defunct reactors, spent fuel and a multitude of other radioactive encumbrances - will be with us and our descendants for generations to come. Unfortunately, babysitting radioactive hulks is no bright youngster's idea of a rewarding career.

While this "sorry saga" rolls on, what of the real world? The government is determined, come hell or high bills, to privatise the rest of the electricity industry during this Parliament. But removing nuclear power leaves the reorganised industry broken-backed, invalidating the key reason for its new structure. National Power was created to be large enough to carry the nuclear burden. Without this burden, it will be able to throw its weight around, to ensure that "competition", the government's favourite buzz-word, cannot unsettle the cosy long-term stranglehold of the existing generators. Furthermore, 20 per cent of load - the continuous "base load" - is to be pre-empted to keep the remaining nuclear plants off the street.

If the CEGB have their way, scarcely any of the new power plants the government keeps extolling, "competition" for National Power and Powergen, will ever get off the drawing board. No independent generator will build a plant that can operate and earn an income only at times of peak load.

That is a pity: because the technologies that independent generators now propose offer cleaner and more efficient electricity generation. They are small, flexible, modular designs, with fewer economic and environmental problems than traditional generating technologies. The prime candidate is gas-fired "combined cycles": burning natural gas in a gas turbine, and using its hot exhaust to raise steam for a steam turbine.

A gas-fired combined-cycle plant emits no sulphur dioxide, and can achieve an efficiency well above 40 per cent for pure electricity generation, compared to under 35 per cent for traditional coal-fired plant with sulphur removal. This reduces carbon dioxide emission at least 20 per cent. Combined-cycle plants can be built in less than three years, and expanded rapidly as necessary; they are now springing up around the world like mushrooms. Just before the government's nuclear about-face, Norweb, the present electricity board, contracted with Lakeland Power to buy the output of Britain's first independent gas-fired combined cycle plant. Will it be the last?

Natural gas, for all its advantages, may yet become too scarce and expensive to waste 50 per cent of its energy generating electricity. Coal, too, offers innovations. One is fluidised-bed combustion (FBC), in several variants, able to burn almost anything, with very low emissions of sulphur and nitrogen oxides. FBC plants, too, are burgeoning elsewhere, especially in industrial cogeneration and combined heat and power applications, often in urban areas, with efficiencies above 80 per cent and minimal environmental impact. Both pressurised FBC and coal gasification can drive combined cycles for pure electricity generation.

All these technologies are now proven and operational, on offer on straightforward commercial terms from major engineering firms in many countries. But none will be built in Britain if the government, despite its fervent rhetoric, carves up the market and hands it over to existing generators for years to come.

Both the government and nuclear promoters paint nuclear power as green as they can, because, they say, its waste includes no carbon dioxide; and this, they say, warrants paying a premium price for it. The same argument could be used to support paying a premium price for renewable energies like wind - and even more emphatically for investing similar funds in improving end-use efficiency. What about the government's own vast array of buildings, for starters? They could be showplaces all over the country, for all the latest

technologies: high efficiency lighting; selective windows; computerised comfort control; the list goes on and on.

That would cut carbon dioxide emissions swiftly and permanently; demonstrate how effective such measures can be; create hundreds of thousands of jobs; and open up major business opportunities for British industry, at home and abroad. But no chance: the government's true concern about carbon dioxide is evident from its plans for vastly expanding the road network. Has the government not been told that petrol too is a fossil fuel? It's easy: just remember the "car" in carbon dioxide.

No, the official arguments do not add up. The electricity package is gaudy with glittering wrappings, promising competition, cheap electricity and more care for the environment. But under the wrappings is a misshapen clump of incoherent notions masquerading as a policy. To judge from the lopsided criteria applied - obsessive coddling of nuclear power, while coal is exposed on a mountainside - the government's primary motive is to avenge itself against coal. A second motive is to exalt the ideology of the free market - except when the market will not buy nuclear power. A third motive, as with all privatisations, is to fatten government coffers.

This last, however, may fall well short of fulfilment. Even after its nuclearectomy, the stitched-up electricity industry is still a lumbering monstrosity; and its sell-off may realise only a pittance for the public purse. Rational analysis would now dictate a fundamental rethink of the entire undertaking. Failing rational analysis, put your money in candles.

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