Nuclear stations may stay on line to bridge the gap

Finally, they've noticed they can't do it in short or long term with wind!

The Telegraph
June 12, 2006

For months, the Government has been softening the public up to the idea of more nuclear power stations.

Tony Blair declared last month that nuclear power is "back on the agenda with a vengeance". He added last week for good measure: "It is very difficult to see how you are going to be able to have a secure energy supply in the future unless you are replacing at least the nuclear power stations that are going to be decommissioned."

Nuclear power provides 19pc of Britain's electricity needs today and Mr Blair wants to keep it at that level. Maintaining a diverse range of power sources should deliver a greater security of supply, Mr Blair believes.

Yet the proportion of electricity generated from nuclear power is set to drop to 7pc by 2020 if older plants are closed as scheduled. Replacement plants cannot be built in time to make up the shortfall, which raises the next question in the energy debate: should Britain's ageing reactors be kept running for longer than originally planned until enough new plants are built?

Four of Britain's oldest nuclear plants, called Magnox reactors, are still running but will be closed by 2010. Relatively small and inefficient, with some of them up to 40 years old, few expect these reactors to be saved from decommissioning.

However, Britain's eight other nuclear plants, which are owned by British Energy, could have their lives extended. Seven are earmarked for closure by 2023.

The decision on whether to extend the lives of the seven advanced gas-cooled reactor (AGR) plants rests with British Energy. The lure of extra revenue from extending for another few years is clear, especially against the backdrop of high electricity prices. Last September British Energy extended the life of the Dungeness B reactor in Kent by 10 years to 2018.

However, extending the lifetime of nuclear plants also carries risks and costs. Older reactors suffering from wear and tear frequently require extra investment to meet safety standards set by the Nuclear Safety Directorate, the industry regulator.

Not only can costs rise but revenue can be hit as reactors often have to be turned off during additional safety tests.

Plus, if a large safety concern rose in future years the plant could still be closed by the regulator.

"They could invest quite a lot of money and still be failed by the Nuclear Safety Directorate," said Tony Ward, director of power and utilities at Ernst & Young.

The biggest problem for British Energy's AGR reactors comes from cracking graphite bricks, which are a critical component of the nuclear core. In more severe cases plants may have to be shut down by the Nuclear Safety Directorate.

British Energy declined to comment for this article but the company warned in 2004 that four plants - Hinkley Point B, Hunterston B, Heysham 2 and Torness in Scotland - may not be able to be extend their lifetimes because of cracked graphite bricks. Prolonged outages at Hartlepool and Heysham reactors within the past two years were required following the discovery of graphite cracks.

No technique is known that can eliminate the cracks but the Nuclear Safety Directorate has required British Energy to carry out more frequent inspections of the bricks.

In light of such difficulties, some nuclear engineers are questioning whether the plants can be used for much longer.

Independent nuclear engineer John Large said: "These reactors were designed for a 30-year life. I am rather sceptical about the success of extending these."

The scope for extending the lifetimes of most of British Energy's reactors is less than in other countries. In America some reactors have been given the go-ahead to run for up to 60 years as they use the more advanced pressurised water reactors (PWRs). Britain has only one PWR plant, Sizewell B, which opened in 1995 and is earmarked for closure in 2035.

Yet to return nuclear to providing a fifth of the country's electricity needs by 2020 KPMG estimates that British Energy will need to extend the lifetime of three more AGR plants after Dungeness.

Rob Cormie, head of the energy group at KPMG Corporate Finance, said: "What we are advocating is lifetime extensions to some of the British Energy plants and in between time we start advancing, planning and pre-licensing new reactors."

KPMG assumes the earliest a reactor could start being built after all the planning approvals are obtained would be 2011 with no more than an average of two gigawatts capacity built every three years.

Britain's nuclear capacity today is 11.9 gigawatts. Such a building speed would be relatively fast given that it took 15 years to complete Britain's last plant, Sizewell B.

If British Energy does not or is not allowed to extend the lifetime of its nuclear plants, alternative energy sources will need to be found. British Energy has yet to decide which or how many nuclear plants may have their lives extended. New nuclear plants look to be almost a certainty but the prospects for Britain's existing nuclear fleet are still unclear.