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In Perspective: UK Rab Model Will Shift Risks to Consumers

The financial model being investigated by the UK government to help encourage nuclear newbuilds beyond EDF's Hinkley Point C in England and Hitachi's Wylfa Newydd in Wales is the Regulated Asset Base (NIW Sep.21 '18). In this opinion piece nuclear expert Steve Thomas, a professor at the University of Greenwich, examines the implications of the adoption of this model for the nuclear industry.

The cost of power from EDF's Hinkley Point C newbuild in Somerset, made the financing deal for the project desperately unpopular, even with strong supporters of nuclear power. As a result, the arrangements for follow-on newbuilds will have to appear very different, with a much lower expected price of power. The problem for nuclear projects is that if they are to be financeable, most of the financial risk must fall on the public, as either consumers or taxpayers, rather than on those providing the finance. This means that the primary way to get a lower price of power for EDF's Sizewell C newbuild project in Suffolk than for Hinkley Point C is for the public to take on even more of the construction risk. Lowering the risk to financiers will reduce the cost of capital, and thereby significantly reduce the consumer cost of power -- but only as long as things do not go wrong.

The plan for Sizewell C, and for most of the UK's other prospective nuclear newbuild projects, now appears to be that it will be treated and regulated as if it was a monopoly facility, like a transmission line. Under this model construction and likely even operational risks will be largely covered by the "Regulated Asset Base" (Rab). This means the owners would earn a "fair" rate of return on the money invested as well as recovering their operating costs. This fair rate of return should be the rate of return earned by private-sector projects with a similar degree of risk and for network facilities is reassessed every five to eight years. Currently, monopoly energy companies are allowed to earn a real rate of return of about 6%.

The model cited by nuclear developers is the Tideway water project for London. This is a much smaller project, with an estimated cost of £4.2 billion (\$5.5 billion), but rather than it being owned by the local water company, it will be owned by a consortium of institutional investors. A major advantage of this model for the nuclear sector is that it would mean developers like EDF would not have to finance and own a facility they cannot afford, while still increasing their order book. In EDF's case an order for EPRs would be a boost for its Framatome reactor vendor business.

The Tideway project itself already has plenty of critics who doubt its worth. There is scope for costs to overrun with Tideway, but the record of large water projects is nowhere near

as bad as recent nuclear projects. The output from newbuilds built using the Rab model would presumably be bought by the government's Low Carbon Contracts Company set up to buy the power from Hinkley Point C, and while some indicative power costs would be given for the newbuild they would only be set in retrospect when costs and performance were known. Any arrangements for recovering the extra cost of power from consumers would have to be squared with the government's promise from November 2017 that there would be "no new low carbon electricity levies until the burden of such costs on energy bills is falling."

A nuclear Rab model would be reminiscent of the period from 1990-96. Privatization of the UK electricity industry revealed a nuclear sector so uneconomic that income from selling power did not even cover reactor operating costs and the contribution to the funds needed to decommission the plants. A new publicly owned company, Nuclear Electric, was created in 1990. This was kept afloat by a consumer subsidy, the Fossil Fuel Levy (FFL), calculated as whatever was needed to keep the company solvent (in practice about 10% of consumer bills). A Non-Fossil Fuel Obligation required electricity retailers to buy all the nuclear output at cost. Of the £6 billion raised by the FFL, about half was used to finance the construction of the pressurized water reactor at Sizewell B. This regulated framework ended in 1996 when the UK's newer reactors were privatized, essentially given away, as British Energy, meaning the FFL funds spent on Sizewell B were lost. British Energy went bankrupt in 2002 and required about £10 billion of public money to save it, after which it was eventually sold to EDF to become EDF Energy.

Could this be repeated? Under UK regulation of monopoly facilities, companies are allowed to start recovering their costs from consumers as soon as they start to invest. While this will be a major positive to investors, it places a major additional risk on consumers. One of the factors that allowed construction to start on the ill-conceived Vogtle and Summer AP1000 newbuild projects in the US was the allowance by regulators for the utilities to start recovering their costs from consumers even before

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construction started. Consumers will be lucky to get much of the money they have spent on these projects back. The obvious questions to ask are who will pay if construction cost is more than anticipated and who will pay if plant reliability and costs are worse than expected.

The UK government is now set to test the market with a nuclear Rab scheme, surveying institutional investors worldwide to see whether a project using this model is bankable,

what the cost of finance will be and whether a reassessment of rate of return every five to eight years is acceptable. The details that have emerged so far are slim. If the market says no, or requires a rate of return that makes the power price too high, the government will have to move even more of the risk onto consumers or abandon its newbuild ambitions. The willingness of the UK government to take a substantial financial stake in Hitachi's Wylfa Newydd underlines its determination not to allow any of the nuclear projects to collapse.