

The Article

Sizewell: in nuclear power, small is beautiful



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16 March 2023

The Government seems to have reached a massive and truly long-term investment decision – to construct a second large-scale nuclear reactor plant at Sizewell in Suffolk. It is to be a replica of the giant being built at Hinkley Point in Somerset, based on the so-called EPR design.

So here is a strategic commitment, sustainable, relevant, in-line with the obvious need to replace and repair our sources of low carbon reliable power, so deplorably allowed to run down under successive past administrations, Tory and Labour.

Surely a moment for three cheers. But alas, no. One cheer at the most. Why? Because while the aspiration to replace our aging nuclear fleet is fine, the design being chosen betrays a truly fatal misapprehension, not just of fast-changing global nuclear power technology, but of the whole path of national industrial strategy and advance now and in future.

The provenance of the EPR design model, being used at Hinkley under EPF direction, and with Chinese financial support, is truly awful. No EPR ever built has so far been anywhere near on time, anywhere near budget, or, worst of all, has ever worked properly, if at all.

Flamanville, on the Cherbourg peninsula, described as “the litmus test” project for the EPR, is running 11 years late and currently \$10 billion over original budget. Olkiluoto, the Finnish project, and one of the largest in the world, about to come on stream in a limited way and subject to start-stop decisions and much wrangling, is 12 years late and 8 billion Euros over Budget. At Hinkley C, under construction, the original opening date was 2019 and cost was to be in the £19 billion range. Now it is scheduled for 2028 at the earliest and the cost estimate, with inflation playing its part, is now £32.7 billion. Even the plant at Taishan, China, built between EDF and the Chinese CGN (as at Hinkley)

and hailed as the one EPR success, has suffered dangerous gas leaks and is now closed “for safety reasons”.

This decision to build another EPR is not what we want, not what we should be repeating and not what we can afford.

Even if they start digging now at Sizewell in Suffolk, and everything goes smoothly (some chance!), there is not the slightest likelihood of commercial operation before the mid-to late 2030s. By contrast the builders of much smaller, and faster built designs, the so-called Small Modular Reactors (SMRs), insist they can have nuclear sets built in series, on site and in operation by 2031, or even earlier.

The Japanese firm Hitachi say they are ready with 32 of their 400 MW models for the UK, if only they are allowed to get through all the tests, including Generic Design Assessment (GDA), with reasonable speed. Holeric (also Japanese) say they can sell the UK a stream of nuclear tiddlers (160MW) right now. Rolls Royce is coming along as well, and claim they can have SMR models (400MW) operative by 2030 at the latest. Ship-based SMRs (to avoid local site concerns) are also being built now by — of all people — the Russians.

Japan, the US, South Korea, France, China and Canada are all pushing head fast with SMR development. Here in the UK the Prime Minister has been talking up the issue, as have other Ministers. The Chancellor mentioned them in this week’s Budget. So it is not that the SMR cause has been neglected. But it has not been accelerated — and that is the missing bit.

SMR development, including all necessary testing, licensing and GDA, is the path of the new generation of nuclear energy that we should be on right now, not just as a possibility at some future date. The decision to go instead for the old size and design at Sizewell is not only an opportunity lost in energy policy. It affects the whole of British industry and the whole pace of the supposed great energy transition to a carbon-free infrastructure.

Finance directors, not just in firms with direct energy infrastructure interests (i.e. not only in big oil and gas companies, but right across UK industry), are waiting for a strong Government lead here to tell them whether to invest, and in what. We hear calls every day for “an industrial strategy”, “a proper long-term plan”, from all quarters, from campaigners on climate change as much as from the gas turbine builders and hydrogen planners, battery producers,

component-makers, the vehicle sector and its suppliers, and all related services.

The UK's national (and legally binding) target of Net Zero by 2050 — meaning all-electric power and total fossil energy replacement — looks increasingly remote. But there is just a chance, with rapid-build SMRs, that at least in the power sector a clean performance might be reached.

But a Sizewell that is merely a “replica” of the Hinckley Point EPR will put paid to that.

Instead, it will signal more delay and uncertainty across a wide front as the Government hugs old (and unreliable) technology and long delay, financed (of course) by the taxpayer. The much vaunted Regular Asset Base system, whereby hapless consumers are invited to pay extra on their bills from the very start, years before any electricity is generated, is not enough to overcome investor reluctance to be involved in projects which take ten years-plus to build — besides being to a problem-laden design — and which may never work properly.

Piling still more charges on household electricity bills, given present soaring burdens, anyway sounds like political suicide.

By contrast SMRs take two years to build, mostly off-site, and can attract private money a-plenty. It has been argued that large-scale units must achieve economies of scale. But these will always be overwhelmed by the ten-year timescale and the capacity for endless design error.

So the Sizewell design decision is totemic, iconic and central to our future. A wrong decision there injects further doubt and uncertainty into the whole industrial investment pattern of British industry and leaves us further behind all our competitors. It will do nothing for national reassurance and recovery. It will contribute little or nothing to combating global warming.

The right decision — namely, to go all out, both at Sizewell and beyond, for the new SMR generation — would truly signal the dawn of a high tech, science-leading, decarbonised and reliable energy economy. Above all, it would be a powerful signal to attract outside investment, which ministers and policy strategists keep talking about, but so far are just not on the right route to deliver.
