

How not to go nuclear: Hinkley and Sizewell



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If the hope is one day to bring less expensive low carbon electricity to millions of British homes, the giant Hinkley C nuclear project being currently built in Somerset certainly is not going to be part of it. Nor is the intended identical “replica”, Sizewell C, planned to be built in Suffolk.

Not only have the estimated costs for the twin nuclear reactors being constructed by Electricité de France (EDF) at Hinkley Point soared by *five* times, admittedly with soaring inflation playing a part. Not only has the Chinese company, China General Nuclear Group (CGN), who were in

for 30 percent of the finance, stopped paying up. Not only has the completion date — once 2017 — been delayed to 2029, and it may be later still. But the price for Hinkley C's product when it comes, guaranteed in the deal with the UK Government, was fixed (in 2012) at £93.50 per megawatt hour, (at that time about twice the going rate), to be indexed upwards in the years ahead. Now it stands at more than £128 per MWh), still about twice the commercial rate.

If you want home-grown, low carbon, reliable electricity, say the apologists, as British law insists and commits, that's the way these vast gigawatt projects go. Like big railway plans and state-backed infrastructure, they always underestimate at the start, always overshoot before they are finished.

But every single one of the half dozen or so nuclear plant of the "EPR" design being deployed at Hinkley that have been, or are being, built round the world, has had, with one exception, enormous cost and timing overruns. The exception is the project which was completed on time at Taishan in China, jointly built by EDF and China General Nuclear. But that, too, has had a string of operational problems and one reactor has had to be closed.

The EPR design was meant to be the proud grandchild of the highly successful Westinghouse Pressurised Water Reactor (PWR) model, of which brilliant French engineers managed to construct no less than 58 in the 1950s and 60s. (All are now growing old.) But something has gone wrong with this successor design. Even a former chair of EDF has said that the EPR is "too complicated and almost unbuildable".

Still, if that were the only problem, it would be worrying but not insuperable. Determined managers, plus experienced contractors and technicians, could at least have a go at minimising further cost inflation and delay.

But the EPR design is not the only problem, by a very long chalk.

Take finance first – the immediate crisis. This is not just a matter of finding the cash to meet the enormous budget overrun. The Chinese payments halt at Hinkley leaves a growing gap. Love or hate them nowadays, they have already been edged out of the Sizewell plan (they were actually paid

£100m to leave), so the very large Chinese contribution there will also have to be found from elsewhere.

But EDF has no more money, and the French think the British Government should open its chequebook. HM Treasury thinks no such thing. So, to repeat, who is going to fill the gap?

Copying Hinkley, and certainly copying its financial story, looks less attractive by the day. The British hope is that at Sizewell a new financial model, requiring consumers and customers to pay extra for years in advance for their electricity, will entice in investors, to replace the Chinese. One allegedly interested “private investor” is said to be the not-so-private United Arab Emirates government. But is that the kind of swap — the very non-aligned UAE in place of the Chinese — that we need?

The Hinkley “hiccup” of the kind now occurring throws even more doubt on the viability of these enormous structures. Replica of Hinkley C or not, Sizewell C will still take far more than a decade to build and cost a minimum of £25 billion, (of which the Government has already stumped up £1.3 billion). Sizewell B, which I authorised as Energy Secretary as long ago as 1979, produced its first commercial current in 1995. No genuinely private investors are nowadays going to touch risks of this kind or for this length of time with a bargepole.

Finally – and perhaps this should have come first — for Sizewell to follow in tramline bureaucracy style from Hinkley C is a major and out-of-date diversion from the new technology of civil nuclear power. Nowadays this is all about much smaller designs, taking quarter of the time to construct, mostly off-site, with new and less dirty fuels and plenty of private finance already interested. A string of innovative firms, including our own Rolls Royce, are ready to take orders and have these in every respect much more manageable plants up and running by 2030 (mostly at existing or disused nuclear sites). We need about 500 of them to replace all fossil fuels.

This is where the unquestioned priority in British nuclear should lie, if we want a reliable, affordable and low carbon electricity supply system – at least three times the size of our present one, dovetailing nuclear with

intermittent wind power — by 2050. This is where many of the world's advanced economies are moving fast – away from the old behemoths.

The deepening Hinkley C imbroglio plainly indicates we are on the wrong track to meet the needs of an all-electric age. If the UK wants to steer through the vast energy transition and stay abreast of an ever more competitive, new and cleaner world, then it should be on a different path — as of now. It's far too late to halt Hinkley C, but the Sizewell C decision plainly takes us in entirely the wrong direction. It is not a moment too soon to change course.