

Debunking EDF's claims that Sizewell C would be different to Hinkley Point C, and what that would mean for consumers and Value for Money

On 23 January [EDF announced](#) that the overnight cost of Hinkley Point C will be up to £35bn [2015] - £46bn in today's money - £17bn more than its £18bn budget [2015]. Completion of Unit 1 is delayed to between 2029 and 2031 - 4 to 6 years later than planned at the start of construction. [EDF's claims](#) that problems constructing the European Pressurised Reactor/EPR are due to Hinkley C being "First of A Kind", and that Sizewell C will benefit from replication and "learning" which would reduce construction time and cost, should be treated with considerable scepticism, and the implications for consumers and value for money considered.

1. The EPR technology is "too complicated, almost unbuildable"

Every EPR reactor project has been late - between 6 and 14 years late and, where costs are known, at least double the expected budget. Rather than First of A Kind, Hinkley is the 5th and 6th EPR globally, and EDF has made five cost and completion revisions since construction began; the first in 2017, just a year after its Final Investment Decision (FID). These failures suggest that there has been no learning from the four previous EPR projects. Olkiluoto 3 in Finland [was 14 years late](#). Flamanville 3 in France, not due online before late 2024, [is at least 12 years behind schedule](#) and four times over budget; £11.2bn [2015] for a single reactor. With costs up to £17.5 bn for each of two reactors, the experience of Hinkley Point C suggests replication *increases* cost. Taishan I & 2 in China took [double the predicted build time and were 50% over budget](#). The only figure for Sizewell C in the public domain is £20bn (pub May 2020) which is widely held to be completely unrealistic, but current cost estimates are secret.

These repeated delivery failures strongly suggest that Sizewell C would not be delivered on time or on budget. Given the apparent lack of learning, the alternative assumption is that the problem lies with the technology, not just the poor execution of Hinkley Point C and the other EPR projects. Former EDF CEO [Henri Proglio told the French Assembly in December 2022](#): "*The EPR is too complicated, almost unbuildable.*" No amount of replication can render a complex technology simpler. As a result, EDF has announced that France will not build any more of the EPR design used for the existing six EPR orders, and proposed for Sizewell C, but proposes to construct six reactors in France of a modified design, the EPR2, which is described on EDF's website as ["simplification and optimisation of the design of the EPR.](#)

EDF's attempts to [blame the Office for Nuclear Regulation](#) for Hinkley overruns, saying "*we have had to substantially adapt the EPR design to satisfy British regulations, requiring 7,000 changes, adding 35% more steel and 25% more concrete*" were [swiftly denied by the ONR](#): "*In relation to the volume of additional steel and concrete required at Hinkley C, we do not recognise our regulatory requirements as being the principal factor in these increases, as they are broadly similar to the requirements in France.*" DESNZ continues to refuse repeated requests to publish updated cost estimates or even a target completion date for Sizewell C.

2. Sizewell C is dependent upon EDF

Regardless of who pays for Sizewell C, it is EDF's technology so EDF has to supply and build it, despite its appalling track record. There is a legitimate question whether - with Hinkley C overrunning and six EPR2 reactors planned in France, on top of the challenges with the existing French fleet - renationalised EDF would overreach itself.

It was originally intended that the gap between the start of construction of Hinkley C and Sizewell C should be two to three years, enabling skilled workers to transition from the completion of a construction stage at Hinkley to Sizewell. However, Sizewell C has also been significantly delayed, and the gap has grown to at least eight years. Sizewell C's stated intention to utilise the Hinkley

workforce is understandable as an attempt to de-risk the project, but there is little opportunity to implement “learnings” if Hinkley’s skilled workers, having completed their roles, have been forced to seek employment elsewhere and are therefore not available for Sizewell C. Equally there is an opportunity cost of diverting skilled personnel to Sizewell C from other technologies.

A solitary silver lining in Hinkley C’s dramatic overruns and overspends is that at least EDF must own and pay for its mistakes (see point 4 for the implications for consumers for Sizewell C). Reports that DESNZ’s exploration for a third GW nuclear project would look beyond EDF and the EPR suggest incoherence in the government’s position: if replication is truly beneficial, why would there not be more of it? Perhaps the government’s view of replication is not in fact quite so rosy, but it makes ongoing support for Sizewell C even more incomprehensible.

3. It is impossible to replicate the project location

Sizewell C has been described by a senior Office for Nuclear Regulation source as “an expensive site to develop” compared to Hinkley C. The same source expressed the view that any savings the project might expect to make through the above-ground replication of Hinkley C are likely to be absorbed by the complex groundworks required at Sizewell.

Sizewell is a smaller, more constrained site, geologically different, backed by marshes and adjacent to an internationally renowned nature reserve, with the platform requiring a 60m deep cut off wall to enable dewatering. Sizewell C’s location also presents climate change related risks, being an already severely water stressed area, situated on one of the fastest eroding coastlines in Europe, increasingly vulnerable to rising sea levels, increased storm surges and more extreme weather events. [Sir David King](#), former UK chief scientific adviser and nuclear supporter, said Sizewell C will be ‘*very difficult to protect from flooding*’. These issues raise questions about future costs that would impact Sizewell C construction or longer term operation, that should be identified now.

4. The implications for consumers

The Regulated Asset Base financing framework would require consumers to contribute to the construction of Sizewell C for over a decade in advance of the generation of any electricity. Credible concerns that the scenario of Hinkley Point C may be replicated at Sizewell C result in the inevitable conclusion that households would pay more, for longer, for the only benefit of (eventually) receiving electricity that is more expensive than from other sources. All UK households (aside from N Ireland) would pay, regardless of whether they are on a 100% renewables contract, or reside in Scotland, where there will be no nuclear new builds.

In a response to a DESNZ consultation on proposed revisions to the Sizewell C’s electricity generation licence, [Citizens’ Advice on 29 January wrote](#): *“Our concern [is] that consumers are not simply exposed to the cost of capital, but also the volume of capital that needs to be employed. If the volume of capital required balloons, the project may offer consumers poor value for money even if it is cheaply financed. Consumers may also be on the hook for any delays in the delivery of the project, still being required to pay a commercial return for the construction costs despite it not producing any output at that time ... the scope for material cost and time overruns is very significant. Consumers need to be protected from those risks. They have no way to manage them, and are reliant on the department to take steps to ensure that they are not on the hook for cost or time overruns”*. This was reported by [The Guardian on 19 February](#), with comment from Stop Sizewell C: *“The government emphasise that Hinkley Point C is EDF’s risk and responsibility, but when Sizewell C overspends and overruns – as it inevitably will – future ministers will have to explain why it was considered acceptable to put its construction risk on to consumers and taxpayers. Why has the Hinkley fiasco not taught the government that a RAB-funded Sizewell is a bad idea?”*

In July 2023 the Science Information and Technology Committee [said of Sizewell C](#): “A headline lower cost than Hinkley Point C is not justified if the value of the risk is too great”. There is no information in the public domain concerning proposed risk allocations for Sizewell C, let alone - as mentioned above - updated costs estimates or completion schedules.

5. Sizewell C and Value for Money

The two largest parties have stated commitments to decarbonise the power system by 2030 or 2035. A plausible business case for Sizewell C must therefore be built on the assumption that this objective has been met. Achieving it will require putting in place an electricity system that can meet projected levels of electricity demand at an affordable price prior to the target date. We take this to mean at real prices equivalent to those of 2024. Since Sizewell C would not be producing electricity by 2030 or even 2035, this objective could only be met by putting in place an electricity system that can meet projected demand affordably without Sizewell C. The project’s business case must therefore demonstrate that it can add value beyond 2030/35, at a competitive price that could not be met otherwise by simply scaling up the 2030/35 system.

In addition to the concerns already mentioned - the appalling delivery track record of the EPR reactor, its abandonment by France in favour of the EPR2 design, claimed to be cheaper and easier to build, and the use of the Regulated Asset Base model - there are a number of further Value for Money-related questions.

There is already evidence that the electricity supplied to consumers by Sizewell C will be more expensive than that which would otherwise be available to them. Offshore wind prices for electricity are already less than half of the price of that currently supplied by nuclear and whilst the real costs of offshore wind are falling those of nuclear continue to rise. Offshore wind projects generally attract a competitive field of bidders, do not require a substantial government equity stake and, unlike the nuclear RAB model, the offshore wind CfD financing model places much of the project risk on the developers, not on consumers and taxpayers.

There is good reason to believe that the inclusion of Sizewell C on the grid is likely to increase rather than reduce system costs. Of significance here is DESNZ’s continued reliance on the Dynamic Dispatch Model for Sizewell C’s Full Business Case, despite it being incapable of modelling storage over 24 hours, without any publicly available evidence that a model containing longer-duration storage would not affect Sizewell C’s value for money. A new model, BID-3, is undergoing testing and will be available by the end of this year. It would be deeply unfortunate to take a Final Investment Decision on Sizewell C only to discover that a rerun of the modelling for 2050 with BID-3 reveals Sizewell C not to be needed.

The capital intensity of Sizewell C is such that it makes a large but not yet specified call on currently constrained public expenditure. This makes a reliable assessment of the opportunity cost of that expenditure, essential to a judgement of its value for money, impossible.

There is no evidence to suggest that non-monetised benefits of Sizewell C have been compared to the non-monetised benefits of other paths to achieve climate and security of supply objectives. In particular, the relative merits of nuclear and non-nuclear pathways do not appear to have been assessed in terms of their contribution to levelling-up. Furthermore, the number of long-term jobs is relatively small, and do not take into consideration jobs lost in the East Suffolk local economy during the construction period; in tourism, hospitality and SMEs.

Our climate change and security of supply objectives can be met with greater certainty and at lower cost to consumers without Sizewell C. More detail on [Sizewell C’s Value for Money here](#).