

Why Stop Sizewell C?

Overview: Sizewell C Ltd is a joint venture between the UK government (HMG) and EDF, proposing two 'EPR' reactors on the Suffolk Heritage Coast at an expected cost of at least £30bn. [Planning consent was controversially granted in July 2022](#) and [is being challenged](#) (see Site Suitability). HMG became a partner in Sizewell C in November 2022, ejecting China General Nuclear, and has invested £2.5bn so far - [£100m](#) (Jan 22), [£679m](#) (Nov 22), [£170m](#) (July 23), [£341m](#) (Aug 23) and [£1.3bn](#) (Jan 24), well over the £1.7bn allocated in 2021 to get a GW nuclear project to Final Investment Decision (FID) within this parliament.

Finances

- **Sizewell C is expensive.** The only [published cost is "circa £20 billion" in May 2020](#) (p5). Officials have admitted privately it will cost "£30 billion plus", but Ministers refuse to publish an updated cost estimate. An Office for Nuclear Regulation Inspector told Stop Sizewell C it is "an expensive site to develop" (see Site Suitability). [Frazer-Nash](#) was commissioned to examine nuclear costs but their report is not published. There is no transparency on cost, including how much electricity would cost consumers, making external scrutiny of Value for Money against other electricity sources impossible.
- **Who will invest?** EDF will take a [maximum 19.99% equity stake](#) but HMG has not yet indicated what size stake it is prepared to take. A [capital raise process began in September 2023](#) with a FID targeted for 2024. [UK pension funds are not enthused](#), with Legal & General, Nest, BT and NatWest ruling Sizewell C out. The Treasury plans to [include nuclear in the UK's "green" taxonomy](#) but as of February 2024 the consultation has not yet taken place and is in any case [unlikely to be a game changer](#).
- **Risk borne by households:** Sizewell C's only chance of attracting private finance is through [use of the Regulated Asset Base funding model](#), which would load construction risk onto households via a "tax" on energy bills during the lengthy construction period to give investors an immediate return. [HMG has claimed this levy would be around £1 a month](#) but refuses to publish its calculations. [The Science Innovation and Technology Committee](#) has said: "*A headline lower cost than Hinkley Point C is not justified if the value of the risk is too great. This is true even if it forces a conclusion that... gigawatt scale new nuclear is not financeable on defensible terms, and that the UK's nuclear ambition would need to be pursued through other nuclear technologies*" (para 41). In January 2024, [Citizens Advice told Ministers](#) "*at Sizewell C in particular, 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...*"
- **Track record of the EPR reactors.** In its latest update, January 2024, [Hinkley Point C's cost is up to £35bn\[2015\], £17bn more than its £18bn budget - £46bn in today's money](#). Following the refusal of China General Nuclear to pay more, [France now wants HMG to contribute to completing Hinkley C](#). Olkiluoto in Finland [was 14 years late](#). Flamanville in France [is at least 12 years late and not due online until later in 2024](#). [EDF claims Sizewell C will be cheaper, benefiting from being a replica of Hinkley](#), however it is not possible to replicate the site. [To read more on this subject click here](#).
- Sizewell C will divert resources and investment away from renewable and net zero projects. [The i reported that BEIS reallocated £136m in 2023 from the electric car fund to Sizewell C](#).

Technical concerns with the EPR reactor

- Only three EPR reactors are in operation. [Taishan 1 in China closed for over a year with fuel failure](#) early in its life and [was offline again from February to November 2023](#). EDF frames Taishan's fuel failure as about the robustness of fuel assemblies, but [French regulators still demand design changes at Flamanville to limit core vibration](#) (p6). After extended testing Olkiluoto 3 entered commercial operation in April 2023 but [experienced two unexpected outages](#) in November 2023.
- Unlike the UK, France will not build any more EPR reactors. Former EDF CEO [Henri Proglio said in December 2022](#): "*The EPR is too complicated, almost unbuildable.*" France instead intends to build six reactors of a simplified design called the EPR2, [the first at Penly](#) (p6).

Contribution to energy security and addressing climate change

- **Sizewell C is slow**, taking at least [10-12 years to build according to EDF](#), so with a FID not due until 2024, it is unlikely to generate any power until after HMG's [target date to decarbonise the UK's electricity of 2035](#) ([Labour's target is 2030](#)). Future governments will therefore have to install some other form of electricity generation - such as cheaper, quicker renewables - to meet their targets.

- HMG has frequently made the case, eg in [Powering Up Britain](#), that Sizewell C/nuclear power is essential to provide ‘**baseload**’ power generation, but in response to a [PQ asking for an estimate of the baseload electricity required each day](#) HMG replied: ‘*there is no formal definition of this term ..the Department also does not place requirements on generation from particular technologies.. as such it is not possible to provide this information*’. Baseload is clearly not a policy relevant concept, and should not be used as justification in Value for Money assessments.
- **Is Sizewell C a priority for France?** Only EDF could build Sizewell C (even if not on time and budget), and this would place the project in competition with France’s own plans to build six EPR2 reactors. [French Finance Minister Bruno Le Maire has stated EDF’s priorities should lie in France](#).
- **It’s not needed.** A [PQ on the relative costs to consumers of an electricity system including additional nuclear or reliant on renewables alone](#) shows DESNZ ‘*did not look at a renewable only scenario ...as this cannot ensure security of supply*’. However many energy scenarios, eg by [Oxford University’s Smith School](#), [UCL](#), [LUT \(Finland\)](#) and [Energy Systems Catapult](#) (for Good Energy) affordably and quickly reach net zero without any new nuclear power beyond Hinkley C. Significantly, HMG’s current Power Sector Model - the Dynamic Dispatch Model - which will be used for the Sizewell C Full Business Case, cannot model longer-duration storage (source: *correspondence with DESNZ*) and [is being replaced](#). [Load-following is difficult and economically undesirable](#) for GW scale nuclear: [EDF is exploring load following for the EPR but it has never been done in the UK before](#) (para 128). EDF’s talk of [Direct Air Capture](#) and Hydrogen production (same link) demonstrates recognition that Sizewell C’s electricity may often be surplus to requirement and would need to be diverted to other uses.

Contribution to Economic Development and Levelling Up

- **Sizewell C would not help the UK level up.** [A study by Development Economics](#) found that five of the seven remaining “potential” sites in the nuclear National Policy Statement would likely benefit more.
- **Sizewell C would only create [900 long term jobs in Suffolk](#)**; at £30 billion this would be £33m per job. For this sum, the UK could buy much more renewable energy and finance a mass energy efficiency programme which would create tens of thousands of sustainable jobs.
- **Sizewell C would [damage the Suffolk local economy](#).** Research by the Suffolk Coast Destination Management Organisation - and EDF - show that visitors would stay away, losing the tourism industry up to £40 million a year, at an estimated cost of 400 jobs. EDF admits 725 ‘local’ staff would be recruited from existing businesses.

Site (un)Suitability

- [The RSPB says wildlife will be damaged during Sizewell C’s construction](#). It is also opposed by the [Suffolk Wildlife Trust](#). The site is surrounded by protected wildlife habitats and adjoins internationally famous Minsmere. Some of Sizewell Marshes SSSI will be built on. The site is wholly within the Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB); construction would cut the AONB in half.
- **Water:** the [Planning Inspectorate was unable to recommend Sizewell C be granted Planning Consent](#) due to the lack of an identified long term supply of potable water; this is the root of [a legal challenge](#). Sizewell C needs [4 million litres/day during construction, and 2 million litres/day during operation](#). A desalination plant - initially rejected on environmental grounds - was approved for the construction period, but no long term source has as yet been assessed. Suffolk is one of the driest parts of the UK.
- **The site is more complex and harder to access than Hinkley Point C.** The platform will require a [60 metre cutoff wall so it can be dewatered](#) and existing soil swapped out for more suitable material, and huge sea defence, making it (as stated by an ONR Inspector) “expensive to develop”.
- EDF’s case for **coastal stability** at Sizewell, despite serious erosion on the coast close by, depends on the presence of two offshore banks to reduce the power of waves on the Sizewell foreshore, but [these banks have shifted in past decades](#). Cefas has stated “[it is generally only possible to predict detailed changes to the coastline over the next 10 years](#)”. Unexpected erosion of the existing Sizewell sacrificial dune has occurred in the past 12 months. Sea defence plans are not yet finalised.
- **Nuclear waste** would have to remain on the coastal site until the middle of next century. The dates to which the site would need protection from sea level rise are disputed.
- Suffolk has **considerably less infrastructure** (the un-dualled A12 compared to the M5) and a smaller local workforce than Somerset where Hinkley C is under construction. [76% of the construction workers](#) (6,000 out of 7,900) would be required to relocate from outside the area.