23 November 2021

Re: Nuclear Energy (Financing) Bill

Dear Committee Members,

We are writing to outline our reasons for opposing the use of a RAB financing model for large scale nuclear projects. Given the clearly stated understanding that the purpose of the Nuclear Energy (Financing) Bill is to facilitate Sizewell C, we have also explained why this project does not, in our view, meet key UK policy objectives.

We would first like to commend the evidence of Professor Stephen Thomas, Dr Doug Parr and Mycle Schneider to your hearings and wish to convey our disappointment that the evidence was heavily weighted towards representatives of the nuclear industry and those supportive of it, including Trade Unions.

Sizewell C is not necessary for the UK to reach net zero, and specifically would not help the government's deadline of a 78% reduction in CO2 by 2035.

- Energy Systems Catapult found that further nuclear power would disrupt and diminish the overall economic value of a more flexible electricity system championed by the National Infrastructure Commission. Imperial College's analysis met system security standards without Sizewell C and noted that new nuclear at plausible prices led to increased consumer bills. The most ambitious decarbonation scenarios of both National Grid ESO and the Climate Change Committee did not include Sizewell C; indeed National Grid's "*Leading the Way*" scenario is net negative for CO2 emissions by 2032, at least two years before Sizewell C would be on line.
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- It's slow, taking up to 12 years to build. Changing proposals and problems such as water supply because the water authority cannot deliver extended the planning process and EDF has pushed its anticipated Final Investment Decision back, making it even more challenging to meet the 2035 target.

- As mentioned above, the EPR reactor has an appalling track record. Flamanville (France), Olkiluoto (Finland) and Hinkley C are overrun (the first two by a decade) and overspent. The only working examples are at Taishan in China; Taishan I is shut down because of fuel failure after less than 3 years of commercial operation. The UK Office of Nuclear Regulation recognises the need to establish the implications for Hinkley C and CEO Mark Foy shared with NGOs in a recent forum that Taishan II is about to enter the period of

service when Taishan I started to show problems. The French Nuclear Safety regulator (IRSN) in 2018 identified a problem with vibration in the pressuriser at Olkiluoto EPR which will affect all EPRs of the same design including Flamanville, Taishan and Hinkley Point. They are concerned that the issue does not also occur in the simplified EPR2 that France is considering ordering from EDF. The report states "IRSN recommends that Framatome identify the origins of the high vibrations of the expansion line of the pressurizer observed on various EPR reactors and present, at an early stage of the design, the changes required on future EPR2 reactors to overcome this vibration problem".

- Compared to the expected future energy mix, EDF initially estimated that 6.2M tonnes of CO2 emitted during the construction of Sizewell C would take around six years to offset (see page 31 of hyperlink) meaning it wouldn't contribute to net zero until 2040. EDF has more recently reduced the carbon footprint of the build to 3.7Mt, however it would still take nearly 4 years to offset on the basis of its original calculation.

Sizewell C cannot provide value for money within the expected costs for net zero

- EDF's estimated cost is £20bn but this is "illustrative and non-binding" (page 8). EDF's financial advisers Rothschild's say they are looking for "in excess of £20bn".

- Analysis by Professor Steve Thomas has concluded that it would be decades before EDF's claim that power from Sizewell C could cost as little as £40-£60/kwh was realised. Ministers have yet to provide an answer to questions on the expected cost of power from Sizewell C.

- Major UK infrastructure investors such as Legal and General, Prudential, Nest, Abrdn and Standard Life have said they are not looking to invest in Sizewell C. The UK government wants China General Nuclear out, meaning that even more capital will be needed.

- Sizewell C compares poorly with an estimated £50bn for 30GW of offshore wind (9x the power for 2.5x the cost) and SMRs, estimated to cost 1/10th of Sizewell C for 1/7th of the capacity.

- Sizewell C is easily the most controversial element of the debate about the high cost of net zero and how much consumers will need to pay in order to get there.

Other nuclear sites offer far better potential to help the UK level up

- A benchmarking study by consultancy Development Economics shows that a development at Hartlepool, Moorside, Wylfa, Heysham and Bradwell would all contribute more to levelling up the UK than Sizewell.

- There is legitimate concern that Sizewell C will negatively impact the local economy.

Serious environmental impacts and questions about contribution to biodiversity net gain.

- The Sizewell site is considered the most environmentally sensitive in the National Policy Statement EN-6, being wholly within the Suffolk Coast & Heaths AONB. Sizewell C would permanently take around 10 football pitches of rare SSSI habitat at Sizewell Marshes and

the RSPB says it could be "catastrophic for wildlife" at Minsmere and continues to oppose Sizewell C alongside Suffolk Wildlife Trust.

- EDF's calculations for how the project fares against DEFRA's 25 Year Plan for biodiversity net gain erroneously claim a total of 18% biodiversity net gain (Table 8.1.1) and completely ignore significant biodiversity loss during the 12 years of construction. Local communities calculate that this loss would not be offset by future gains for about 34 years into the operating life of the station, i.e. late 2060s.

- Sizewell C has not secured its water supply. There is insufficient potable water and infrastructure in the region to deliver up to 4m litres/a day required and this major issue appears to be unresolved. During the examination Northumbrian Water issued a holding objection to Sizewell C.

- As stated by Ministers from Germany, Austria, Denmark, Luxembourg and Spain in a letter to the European Commission about its taxonomy review *"nuclear power is more damaging to human health and to the environment than other forms of energy generation, such as wind and solar energy".* Their concerns include the risk of "*potentially serious nuclear reactor accidents and their cost in terms of lives, health and whole swathes of land becoming uninhabitable over long periods of time"* and disposal of nuclear waste, stating in 60 years *"not one single fuel element has been permanently disposed of anywhere in the world….For decades to come, there will be no effective waste disposal solution for the large amounts of dangerous waste generated. This violates the principle of 'no undue burdens on future generations'".*

In addition to the above in support of our opposition to the Bill, we wish to make some points about the legislation specifically:

* Almost 100,000 people have already said "No" to RAB. It is likely that those on 100% renewable tariffs, who have rejected nuclear energy, and many Scottish billpayers - who have voted not to have any more nuclear power stations built - will not wish to pay for the construction of Sizewell C.

* A RAB-type model in the United States for a cancelled nuclear plant in South Carolina is costing ratepayers $2.3bn. The developers of another plant, near Atlanta Georgia, whose costs ballooned, are being allowed to pass a extra $2.1 billion in overspend on to consumers.

* The most often-quoted example of using a RAB for infrastructure projects is the Thames Tideway (TT) Tunnel or "Super Sewer". However, the capital cost is only a quarter of Sizewell C, and the Financial Times recently revealed that the project developer wants to pass overspends onto consumers, raising the surcharge on bills from about £18 per year to £20-25. The project is two years behind schedule. A further key difference is that those paying are limited to Thames Waters' customers.

* Ministers have provided no information to support the claim that the surcharge might be £12/year (twice the £6 EDF was reported to have suggested when RAB was first discussed in the media) at the peak of construction. BEIS's Impact Assessment contains a range of capital

costs and rates of return, but no information on the number of consumers charged. We urge the Committee to press the government to publish these workings immediately, including the expected cost of the power that would be generated by Sizewell C.

* There is no commitment in the Bill for any deal struck with EDF for Sizewell C to be made available for scrutiny before it is contractually binding. We support the suggestion made by Richard Hall of Citizen's Advice that an independent third party should conduct and publish an impact assessment and an analysis of the government's Value for Money assessments before any deal is confirmed.

* The Bill seems to let investors off the hook for the cost of decommissioning new nuclear power plants. Given the high cost and major implications of decommissioning it is totally inappropriate for investors to profit without the responsibility of clearing up the mess.

We wish to conclude by making the following observations about the evidence of Julia Pyke, Sizewell C Co:

- Ms Pyke's comment that EDF did not know how Ministers intended to use the £1.7 billion pledged in the Budget did not seem credible to us, as Alan Whitehead MP queried. The Minister's observations about the nature of commercial negotiations enhances our concerns that deals are being struck - that will have significant impact for taxpayers - behind closed doors without independent scrutiny.
- Ms Pyke suggested a 50:50 split on risk sharing on the project might be appropriate. This underlies our basic concern about RAB. The high cost of finance for nuclear new builds is a direct reflection of the high risk of such projects. It is impossible to eradicate this risk, you can only shift it onto someone else. For consumers to take half the risk, when they have zero ability to impact the outcome of the build, is unacceptable.
- We would beg to differ with Ms Pyke's comment that the nuclear industry knows how to build reactors (as follow up to saying no plants were cancelled for technical reasons). As stated above, the Flamanville and Olkiluoto projects suggest that EDF and its partners are having considerable difficulty building the EPR reactor, the technology under construction at Hinkley Point and proposed for Sizewell C. Furthermore, the closure of Taishan I because of fuel failure lends additional weight to the legitimate question of whether the EPR reactor actually works.

Yours sincerely,

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on behalf of Paul Collins
Chair, Stop Sizewell C

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