

The Sizewell C Project Examination

IP 20026017

Statement for Issue Specific Hearing 9 (ISH9) on Policy and Need

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Previous Submissions

I attended the Open Floor Meeting 8 on May 20 and subsequently submitted a Statement of Interest to the Examining Authority on June 2 setting out reasons why the site for the proposed Sizewell C power station is not ‘potentially suitable’ on the grounds that it is unsustainable, unmanageable and unacceptable. I presented my views at the ISH on Coastal Geomorphology held on July 14 and submitted a Supplementary to my Statement in relation to certain issues covered at the meeting to which I added clarification and comment.

In particular I commented on the issue of Need for SZC and on the Policy that identifies the site as *potentially suitable* for the deployment of a new nuclear power station. I further commented on government policy with respect to the long-term management of radioactive wastes. I was concerned that need and policy had been taken as given and, consequently, out of scope for the Examination. It has long been clear that to exclude these fundamental matters from consideration was unreasonable and would unduly restrict and potentially compromise the overall assessment.

I was pleased that the Examining Authority decided to hold an Issue Specific Hearing devoted to Policy and Need. Accordingly, I prepared this written submission which essentially develops argument in my two previous submissions but with a focus on key issues of policy within the context of Climate Change.

Concerns about ISH9

However, I was most disappointed with the process and substance of ISH9. The Agenda focused squarely on the interpretation and validity of the policy on need as expressed in National Policy Statements on Energy (EN-1) and Nuclear Power Generation (EN-6) now more than ten years old. Moreover, the process favoured a legalistic approach which played into the hands of the lawyers deployed by the developer and the two local authorities. With such a tightly controlled Agenda it proved virtually impossible for other participants to open up the discussion to the wider issues of Policy and Need. Consequently, fundamental questions such as how much, if any, new nuclear is needed and, specifically, whether Sizewell C is an essential component of the energy mix were treated by the developer in particular as matters of legal interpretation of policy rather than as matters for policy evaluation and review. The question of whether Sizewell C is potentially suitable for nuclear deployment as indicated in EN-6 was a policy area scarcely touched upon.

My concern, then, and that of some other participants was that wider issues of Policy and Need were excluded from this ISH. In particular the overriding issue of Climate Change attracted only marginal discussion. The recent report of the IPCC must be

regarded as a transformative document which provides definitive and incontrovertible scientific evidence of the scale and scope of the impacts of Climate Change. Its findings have direct bearing on the development of a nuclear power station such as Sizewell C on a coastal location. Above all it is relevant to Policy on strategic siting assessment and the long-term management of radioactive wastes.

Given the relevance and significance of Climate Change to Policy and Need I was surprised that my submission was ruled out of scope for this ISH. Although I was able to put some of my argument at the ISH it was suggested I put my concerns in writing. This I have done in the following submission.

Submission on Policy and Need

I have commented on Policy and Need in both my previous submissions, and also in responses to earlier stages of the DCO Application process and in a paper published in *Town and Country Planning*¹. I have focused on new nuclear power in relation to Climate Change: whether new nuclear, and Sizewell C in particular, is an essential component in meeting the goal of Net Zero; or, whether the impacts of Climate Change present an existential risk to the Sizewell C project, especially in the longer term.

The argument revolves around three key issues of Policy:

1. *On the issue of need.* It is no longer tenable to rely on the assumption, endorsed in the NPSs EN-1 and EN-6 that there is a vital and essential need for there to be sufficient sites to allow nuclear to contribute ‘as much as possible towards meeting the need for 25GW of new capacity’ (p.13).
2. *On the issue of site suitability.* The policy that all the sites listed in EN-6 ‘are potentially suitable for the development of new nuclear power stations by the end of 2025’ (p.44) is clearly no longer credible, if it ever was. Only one site, Hinkley Point C, has proceeded to construction. It is reasonable to conclude that both the remaining sites under consideration, Sizewell C and Bradwell B, are wholly unsuitable for the development of new nuclear power stations.
3. *On the issue of decommissioning and the long-term management of nuclear waste.* The sustainability and resilience of the site under deteriorating coastal conditions resulting from Climate Change during the operational phase is an issue that has been much discussed. The sustainability of the site in the period after reactor shut down has received only scant attention. In the period of decommissioning and radioactive waste management extending well into the next century the risks to the sustainability of the site are incalculable in conditions that are unknowable. Moreover, the government policy that suggests ‘effective arrangements will exist to manage and dispose of the waste’ (p.25) is, at present, an aspiration.

Need for New Nuclear

¹ Statement of Interest, 2 June 2021; Supplement to Statement of Interest presented at ISH on Coastal Geomorphology July 14; *Climate Change – hubris or nemesis for nuclear power?* Town and Country Planning, Sept./Oct. 2020, pp. 339-344.

In the decade since the original statement of the need for an undefined generating capacity of new nuclear energy (16GW was estimated) an energy transition has been gathering pace. This has been spearheaded by a rapid deployment of renewables, notably wind power, and nuclear has fallen away both in terms of competitiveness and deliverability. Arguments for base-load or firm power have grown more feeble as various scenarios have demonstrated that nuclear can fulfil a much smaller part of the energy mix and, some will say, can be eliminated altogether as a necessary low carbon source of electricity. The new nuclear programme has, so far, only commenced development of one potential GW station, Hinkley Point C, and the Government has recognised the downward trend in its 10 Point Plan and Energy White Paper which has the modest aim of bringing ‘at least one large-scale nuclear project (presumably Sizewell C) to the point of Final Investment Decision (FID) by the end of this Parliament’². Even this ambition is heavily qualified by the proviso, ‘subject to clear value for money and all relevant approvals’.

Therefore, the need for further GW stations is hardly enthusiastically endorsed by Government which, one suspects, is moving towards SMRs and the illusion of fusion for an improbable nuclear future. With the shut-down of all remaining AGR stations, nuclear will be providing approximately 5GW of generating capacity from Sizewell B and Hinkley Point C by the end of this decade and will continue to contribute up to and beyond the point of Net Zero carbon by 2050. If Sizewell C gets the go-ahead and begins generating by, say, 2135 it would add a further 3GW to the nuclear capacity though, if embedded carbon from construction is deducted, its contribution to the goal of net zero by 2050 would only be for around ten years. Although substantial for a short while, it can hardly be described as making a significantly beneficial impact on carbon displacement. It is highly likely that, by the time Sizewell C comes on stream, it will be producing at the expense of more competitive, flexible and safer alternative sources. Moreover, it would continue to displace alternative and cheaper sources until the end of this century. Far from being needed, Sizewell C would be an unwanted and unnecessary surplus to requirements.

I consider it is safe to conclude that new nuclear will not be needed as part of the low carbon future for the UK. In any event, a substantial nuclear component will continue until well beyond the critical net zero date of 2050. In that context, it must clearly be recognised that the high opportunity costs represented by Sizewell C would be embarrassing and profligate. On the issue of need, there is a clear case for the Sizewell C project to be withdrawn.

Government policy on the question of the need for new nuclear is far more restrained than a decade ago. Although the Government continues to favour new nuclear, its commitment to a substantial nuclear programme has faltered though not to the point where it has been abandoned. While Government is clinging to its claim that additional nuclear beyond Hinkley Point C will be needed, the prospect of new nuclear is clearly qualified by various issues, including: the expectation that costs will reduce by 30% by 2030; that an appropriate financing model can be agreed; and that all relevant approvals can be secured. All these reservations apply to Sizewell C, including the need to achieve a DCO on a ‘potentially suitable’ site.

² Energy White Paper, Chapter 02 Power, p.48

Potential Suitability of the Site

Sizewell was one of eight sites listed in the NPS EN-6. The framing of the announcement is interesting: ‘The Government’s preliminary conclusion is that the following sites are potentially suitable for the deployment of new nuclear power stations by the end of 2025’ (EN-6, p.44). Hardly a ringing endorsement of the sites and certainly a recognition that not all the nominated sites would, eventually, be deemed suitable. In the case of Sizewell it was considered ‘reasonable to conclude that a nuclear power station at the site could be protected against coastal erosion, including the effects of climate change, for the lifetime of the site’ (p.237). The NPS was less sanguine on the risk of flooding, pronouncing the site ‘could potentially be protected against flood risk throughout its operational lifetime [around 160 years] including the potential effects of climate change, storm surge and tsunamis, taking into account possible countermeasures’ (p.234).

Even a decade ago the policy statement on flooding and coastal processes in conditions of Climate Change was tentative, using provisional terminology, ‘reasonable to conclude’, ‘potentially be protected’. Sizewell has missed the deadline of deployment by 2025, but a ten year extension has been granted to enable the continued inclusion of ‘those sites meeting the strategic criteria as well as demonstrating they are credible for deployment by 2035’³. However, the NPS is out of date and under review. The Government was due to consult on a draft list of sites during 2019 and this has now been pushed back until towards the end of this year, 2021. It may be presumed that the strategic siting criteria will be revised in the light of more recent knowledge and predictions of the impact of Climate Change on sea-level rise (SLR), storm surge and coastal processes. In effect we are in a policy limbo with respect to site designation and strategic siting criteria. In this situation it may be preferable to make an assessment of whether the site is unsuitable rather than it being potentially suitable. This places the onus on the developer, if they can, to demonstrate that the site is sustainable.

In my previous submissions I have commented upon the sustainability of the site during its operational phase until the end of the century. There has been much discussion of coastal processes, including the role and potential vulnerability of the Sizewell/Dunwich ridge, and the role and relationship of the proposed soft and hard defences. The feasibility of adaptive management measures has been questioned. The Responding Party (RP) has argued that the design of coastal defences ‘is viable with sea level rise as presently anticipated up to 2099’⁴, ie the operational phase. Under the more severe but no longer improbable scenarios, the resilience of the nuclear island to the most severe impacts may be questioned. But, at least, the levels of risk may feasibly be calculated. It is a question of what level of risk may be regarded as acceptable in terms of the potential consequences. This is a matter of judgement. What is clear is that, as uncertainty increases with respect especially to SLR, storm surges and coastal processes, there will be a low (but increasing) risk of high

³ Government Response: Consultation on the Siting Criteria and Process for a New National Policy Statement for Nuclear Power with Single Reactor Capacity over 1 Gigawatt beyond 2025, p.71

⁴ Sizewell C Project – Written Submissions arising from Issue Specific Hearing 6, 1.11.6, p.6

(possibly catastrophic consequences). It may be judged that, improbable though it may be, a low probability/high consequence risk is not worth taking and is sufficient reason in itself to abandon the project.

Radioactive waste management and decommissioning

Once electricity generation ceases at the end of this century, Sizewell C will enter its decommissioning phase, anticipated to end at around 2165. At this point it is assumed site clearance will be attained. It is also assumed that radioactive wastes, including highly active ILW and spent fuel will have been removed from the site to a Geological Disposal Facility (GDF) by that time. The proposals for decommissioning and radioactive waste management lack detail and any conviction or solid evidence base. This is hardly surprising. The NDA is the authority for decommissioning and has presented proposals for its approach to decommissioning in its 4th Strategy⁵. But this only applies to existing and legacy facilities. The NDA's strategy relies on the availability of a GDF to accommodate the long-lived highly radioactive waste. The question of whether a GDF might be available for new build wastes does not arise in the NDA's strategy.

As noted above, radioactive waste management relies on Policy which states that 'effective arrangements will exist to manage and dispose of the waste'. At present this effectively means reliance on a GDF to take all the wastes from the site. There are two problems with this:

- The provision of a GDF cannot be assumed. Any GDF must be both scientifically and socially acceptable. Both conditions are being worked on by RWM and each faces serious challenges. While a GDF may be assumed for the disposal of legacy wastes, it cannot be guaranteed.
- There can be no presumption that a GDF will be available to take new build wastes. And, there is no guarantee that alternative methods of long-term management will exist either.

There should not be any reliance on government policy which claims but cannot conclude that effective arrangements will be available to deal with wastes remaining on site. Moreover, it cannot be assumed that the wastes can be safely managed in interim storage until around 2165. The uncertainties are incommensurable. Above all, the impacts arising from Climate Change into the next century and beyond suggest that conditions at the site could make safe decommissioning and radioactive waste management impossible.

Climate Change and Site Viability

The publication of the Intergovernmental Panel on Climate Change (IPCC) 6th Report reinforces the points I made with respect to climate change impacts in my previous submissions to the Examining Authority. The IPCC has spelled out in uncompromising and unequivocal terms the imminent, accelerating, irreversible threat to our planet from global warming caused by human action. According to the

⁵ Nuclear Decommissioning Authority, Strategy Effective from March 202

scientific evidence it is already inevitable that the global temperature will rise by 1.5°C over pre-industrial levels (it is 1.1°C already). It is highly likely that it will reach 2°C by the end of the century or by around mid-century, if present trends are not arrested. This is the ultimate level scientists regard as manageable.

The RP claims that the plans submitted ‘demonstrate that the design meets the necessary criteria for the worst case but plausible climate change scenario’⁶. But, it also notes that the ONR will need to be satisfied that the site is protected from external hazards, taking full consideration of climate change and extreme events’. It seems that the RP is relying on the ONR to validate its claims through the site licence process. It would be preferable for the RP to present its proposals so that they might be tested and challenged before a DCO is granted.

At 2°C SLR will be of the order of a metre but, even if temperatures are held there, it will continue to rise. However, according to the IPCC, a rise of 2m. by 2100 and 5m. by 2150 ‘cannot be ruled out due to deep uncertainty in ice sheet processes’⁷. Moreover, the Report also states that, as sea levels rise, so the frequency and severity of coastal flooding and erosion will increase and extreme events that occurred once per century in the recent past are projected, under some scenarios, to occur annually in the future. The impacts and their regional implications will be set out in more detail in part 2 of the OPCC report. Meanwhile, there is already sufficient information to indicate that the impacts of CC on SLR, storm surges and coastal processes could render the Sizewell site unviable and threaten the decommissioning process and the security of interim stores at a highly vulnerable location.

While the RP recognises the indeterminacy of conditions at Sizewell during the next century, it confesses it ‘has made no specific projections for coastal change this far into the future but intends to provide an assessment of mitigation beyond 2100 with a modelling of more extreme future coastal conditions for Deadline 7.’⁸ Thus, whereas plans for the defence of Sizewell B during its period of operation are sufficiently developed to be subject to scrutiny and challenge, plans for the period of decommissioning and radioactive waste management are effectively non-existent. We are told that work is ongoing to assess viability and adaptive defences but nothing has been vouchsafed beyond a rather vague promise that modelling of sea level rise and shoreline change appropriate to the decommissioning phase will be undertaken and reported on.

This is a blatant case of too little, too late. The most recent IPCC and other scientific reports on the uncertainties of Climate Change impacts represent a major change in circumstances. They require a thorough reappraisal of the proposals for Sizewell C which take into account the increasing possibility that extreme events are more likely and may become more frequent and that they pose a potential existential threat to the proposals especially during the next century.

In terms of Policy and Need we may conclude:

⁶ See footnote 4, 1.11.5, p.6

⁷ Intergovernmental Panel on Climate Change, 6th Assessment Report, AR6 Climate Change 2021, The Physical Science Basis, Summary for Policy Makers, p.28, B.5.3

⁸ See footnote 4, 1.11.8, p.7

1. That the need for new nuclear at Sizewell is no longer axiomatic.
2. That the policy under EN-6 which lists sites identified as potentially suitable is out of date and under review. Changing circumstances indicate that Sizewell must be considered an unsuitable site.
3. That the policy for the long-term management of radioactive wastes is uncertain and inapplicable in the unknowable circumstances at the Sizewell site in the far future.

Climate Change is the overriding issue facing the Sizewell project. Sizewell's contribution to meeting Net Zero is likely to be minimal. There is little, if any, justification for Sizewell in terms of need. In view of the potential risks to the sustainability of the project and the risks imposed on present and future generations and environments the proposal should not proceed.

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September 3, 2021