



# Together Against Sizewell C

## TASC Response to BEIS revised

### EN6

#### Proposed Criteria for Nuclear Power Reactors over 1GW 2026-35.

9-3-2018

Pages 1-7

TASC is extremely concerned that the suggested criteria appear to be a developer's charter, and gives little guidance to planners or consultees as to the acceptability of the criteria. In many cases we believe the regulators should have the right to override the nominators judgement, especially since the consequences of harm from this type of development are potentially so great, cumulative and long lasting.

The case for new nuclear is poor there is no National need or IROPI.

Our response to the proposed criteria on Pages 19 and 20 at 2.15 follows.

Specifically our answers to the consultation questions are as follows.

**QUESTION 1. We do not consider any of the proposed exclusionary and discretionary criteria are appropriate.**

**BEIS only exclusionary criterion, demographics, is based on incorrect data. We detail our rationale for our opinions below.**

**QUESTION 2. We wish to make the following comments and recommendations:-**

#### NUCLEAR SAFETY AND SECURITY

- **Flood risk, Tsunami and storm surge.**

We submit this criterion should be exclusionary.

In view of climate change, sea level rise, East Anglia land tilt, increased storms and lifetime risk **ie spent fuel hazards on site until energy generation ceases plus up to 100 years.** Refer to DEFRA climate change reports, EA Flood zones, I.Mech E report. **There should be no sites allocated in EA flood zone 3. (I in 100 year event).** This therefore excludes previously nominated sites at Bradwell, Oldbury, Hartlepool, and part of Sizewell **which were only included in the original EN6 because of the policy need for nuclear before 2025.** We believe that Dungeness was removed from the original EN6 because of severe flood risk, but we are unable to find any reference to this exclusion. A notional Sizewell C will require a foundation depth of 50 metres, and much of the construction and operation will be below sea-level. We submit at all times there should be no risk of flooding from sea or weather. Increased risk of flooding, both from fluvial and the sea, to neighbouring property, towns, villages and transport routes must be taken into account.

The increased risk from flooding to neighbouring hazardous facilities eg Sizewell B, Hartlepool AGR and Bradwell ILW store should be exclusionary. The substantial and combined risk indicates this should be **an exclusionary criterion and the regulator's view should be final. The policy refers to a sequential test but we submit this should already exclude the four sites mentioned above but also cannot be assessed due to the fact that sites are in different ownership. EU directive 2014/87 design 14 and 15 may apply. Sizewell C fails this criterion for example the proposed site platform is higher than Sizewell B, but lower than Sizewell A. Flood risk in the neighbouring town of Leiston is already high. A report was prepared by AECOM for Suffolk County Council on Leiston Surface water management but we cannot find the link to this report.**

<http://www.imeche.org/policy-and-press/reports/detail/climate-change-adapting-to-the-inevitable>

DEFRA various reports on climate change including.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69254/pb13358-climate-change-plan-2010-100324.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69254/pb13358-climate-change-plan-2010-100324.pdf)

Environment Agency Flood risk map for Sizewell area. <https://flood-map-for-planning.service.gov.uk/summary/645966/263714>

- **Coastal Process.**

This should be an exclusionary criterion.

Referring to the Sizewell C project the impact of an operational cooling water system and groyne effect and the temporary effect of (when temporary could mean 10 years) jetties or piers on an already eroding coast line, added to increased risk of erosion from storms could indicate a catastrophic impact on neighbouring communities and further damage to cliffs forming a SSSI at Thorpeness. Failure to adhere to previously agreed planning limits at the east of the site will also lead to coastal squeeze. The Shoreline Management Plan for this zone, even without any SZC, considers loss of the river sluice at Minsmere north of the SZC site and breakout of the Alde River at Slaughden south of the site. This is a sign that the whole coastline is unstable, particularly over the site life time. There should be no marine dredging in a prescribed area. **This should be an exclusionary criterion and the regulators view should be final. This criterion should cross refer to flood risk and cooling water criteria. Sizewell C fails this criterion.**

Shoreline management plan for the area.

<http://www.suffolksmp2.org.uk/policy2/smp7index.php>

- **Hazardous facilities.**

This should be an exclusionary criterion.

This criterion should include existing and/or still hazardous nuclear facilities in the immediate vicinity of any construction site which potentially risks the safety of those reactor sites. Eg. Use of tower cranes during construction may not be possible. Vibration may compromise the seismic detectors. Sizewell, Sellafeld, Wylfa? This should be **Exclusionary and reference should be made to the emergency plan for the nuclear site. This confirms the need to include construction as a part of National criteria. Sizewell C**

**fails this criterion. EU Directive 2014/87 Article 8A, 14,15,17,and 21 may apply.**

- **Civil aircraft.**

Sites next to airports should be rejected. Even if the reactor is proof against air crash the other facilities on site may not be. See the Lydd airport case ONR PAR. Should be an **Exclusionary Criterion.**

- **Demographics.**

This is already an exclusionary criterion but the evaluation in the proposals is incorrect. This must be an exclusionary criterion based on realistic data similar to the ONR reference as below.

We do not understand the table in 2.47. This implies that up to **870,000** population could live within 3-5kms of the site. We are of the view that the inclusion of this table is **a serious error in the consultation.** The original EN6 Demographics for Sizewell stated at C.8.7 that the semi urban criteria was exceeded. In the case of Sizewell, the local population up to 4kms radius from the reactor is around **7500** people. The table does not concur with the Hinkley Point assessment ONR-DEF-AR-12-067 page 4 of 23 <http://www.onr.org.uk/hinkley-point-c/site-evaluation.pdf> which proposed site reference limits of **417 persons per square kilometre for new build sites.** The semi urban criteria was assessed as 1250 persons per square kilometre. Sites which may be nominated were originally remote sites with a reference density of 250 persons per square kilometre. We agree that this criterion should be **exclusionary** but seriously question the use of the Hansard table as (wildly inaccurate and potentially misleading) reference limits. Nominees should use the **417** persons per square kilometre as a reference, and refer to the ONR PAR assessment for any emergency plans for neighbouring sites with live reactors, fuel in pond or store, or in the case of Sellafield the whole site. We submit this will not be a difficult calculation using the ONR PAR reports or Local authority emergency plan as a guide. This should be considered alongside the emergency plan for severe accident. **Exclusionary. EU Directive 2014/87 14,17 and 21 may apply. Sizewell C may fail this criterion.**

## **ENVIRONMENTAL PROTECTION.**

- **Internationally designated sites.**

This should be an exclusionary criterion and cross reference should be made to many other environmental protection features.

There is no case for new build in a designated area or impacting on designated sites since no national need can be justified. It is not possible to minimise or mitigate the many cumulative environmental effects caused by construction of this magnitude. **Exclusionary. Sizewell C fails this criteria.**

- **Nationally designated sites.**

This should be exclusionary criterion.

There is no special case for building in, or adjacent to, a National Park or Area of Outstanding Natural Beauty, or in a SSSI, therefore this should be **exclusionary. Sizewell C fails this criteria.**

- **Areas of Amenity and cultural heritage and landscape value.**

This should be an exclusionary criterion.

Natural Capital justification. Setting and cumulative impact on the landscape should all be exclusionary. Negative Impact on AONBs designated for landscape quality cannot be justified. Impact of construction has to be considered. This should be **exclusionary. Sizewell C fails this criteria.**

### **OPERATIONAL REQUIREMENTS**

- **Size of site.**

This should be an exclusionary criterion.

This cannot be discretionary as the size of the nuclear licensed site should be limited by ONR in EN6 2011 comment C.8.89 at 30-50 hectares per reactor. We do not agree that the Sizewell B size of site of 26 hectare should be used as an example of a suitable size of site. Hinkley Point C (HPC) is at least 66 hectares albeit for two reactors. The size of many sites is decreed by geographical and geomorphologic factors, previously agreed planning lines and visual impact statements. The developer should be encouraged to show the actual size of site. For example at Sizewell the original scoping report indicates a site size of 31ha. Since then the size of site has not been divulged allowing the promoter to continue to state that there could be **two reactors replicating HPC**. This scale of development cannot even be achieved by raising the site and expanding it over a marsh (described as a swamp by Nuclear Electric in their 1993 submission) which is also a SSSI and by diverting a river. Only 36 hectares are available. The proposal from nominees must include all necessary facilities including radioactive waste, encapsulation plant and Spent fuel stores. The latter are large buildings roughly 110 metres by 50 metres for Sizewell B, but the capacity and consequent footprint will have to be calculated for any new build sites. We wish to draw attention to the situation at HPC where the later inclusion of spent fuel storage buildings and variation to coastal wall have resulted in a “non-material change” application to the authorised plans which in no way can be described as a minor change. These HPC changes both potentially impact the size of nuclear licenced site. All plans should include ancillary buildings. Without this there will be creeping development of extraneous buildings which affect both size of overall site and landscape visual impact. The footprint of all buildings and usage which is intended for the site must be fixed at time of the DCO. The Planning Inspectors should be given authority to recommend refusal if the application of new build exceed the ability of the site to contain all the growth needed for the Nuclear new build.

**This therefore should be exclusionary. EU Directive 2014/87 14,15 may apply. We submit two reactors cannot be built on the Sizewell C site which is only 36 hectare.**

### **ADDITIONALLY 1**

**The following should be an exclusionary criterion.**

**There is concern for the total size of site during the building process.** Some sites are in very sensitive areas and consideration should be given to all the processes to be used, for construction, borrow pits, layup areas, storage of spoil and any accommodation need. This also applies to adequacy of the road/rail network, park and ride and freight consolidation. It is essential to allow for the cumulative environmental impacts from noise, dust and pollution on residential amenity over a long construction period and long periods of working up to 24/7. This should cross refer to other criteria for their combined impact which may affect many of the environmental status criteria. This is not primarily an issue for regulators but should be taken into account by Planning Inspectors. Therefore we submit the total and overall combined effect of the construction of a massive undertaking must be considered in the whole throughout building, operation and decommissioning. **Sizewell C would fail this criterion. The local authority has already commented about negative impacts on the surrounding area arising from the construction site.**

***Footnote prior to or coincident with construction of a Sizewell C there would be a 54 month site preparation task to rearrange Sizewell B facilities. This could and probably will be undertaken alongside the dismantling of (parts of) the redundant Sizewell A. The combined impacts of all these tasks must be known and the impacts on highways, environmental receptors and workforce availability should be assessed. The Rochdale Envelope which appears to be an attempt to bundle up and even generalise impacts without full assessment needs to be considered and must be resisted.***

- **Access to suitable sources of cooling (water).**

The impact of cooling water systems on coastal process, cumulative thermal impact on safe operation of other working reactors, allied to temperature rise of the sea due to climate change may approach the safe operating limit of the chosen reactor, sufficient to reduce the output and utilization of the plant. Fish, fry and eggs mortality and presence of nearby fishing and breeding grounds and consequential impact on bird habitats must be **exclusionary** or at minimum compensatory. Eg **Heysham** appears to have a cooling water temperature issue related to multiple sites due presumably to depth of waters. The additional temperature and pollutants introduced into the sea or river by the sites return system must be assessed against OSPAR and be shown to not breach its criteria. The impact of any cooling water towers on the landscape must also be assessed. Bradwell A which had lower output reactors of around 500MW capacity already has had a cooling water issue and **Bradwell should be excluded** from the list, certainly for higher output reactors.

**This should be an exclusionary criterion and the regulators view should be final. EU Directive 2014/87 14,15 may apply. Sizewell C may cause damage to the marine environment**

**ADDITIONALLY 2**

- **Town water availability.**

**This should be an additional criterion and the regulators view should be final.**

This has not been considered at all in the consultation documents and must be an **exclusionary criterion. There must be an adequate supply of pure town water at all times for safety and operational purposes and human need shall override industry need.** The impact of desalination plant which might be considered as an alternative source must be assessed alongside the size of site and any impact on the environment from chemicals used as part of any desalination process. The demand for water for construction purposes must also be assessed, alongside adequate sewage treatment and effluent control. EU Directive 2014/87 15 may apply. **There may be insufficient water supplies to Sizewell.**

### **Matters flagged for detailed consideration by PINS/ONR/EA**

#### **Nuclear safety and security.**

We believe the following criteria are best **considered as part of the nomination process.** They form part of the safety principles and acceptability of risk without which the whole nuclear policy and public acceptability, openness and transparency will fail. We would draw attention to the views of Otterhampton Parish Council, post DCO for HPC, which complained of errors in the process and a general concern that members of the public were ignored during the public examination. We also do not believe it right that there is a split responsibility with ONR and EA. It is considered too late in the planning process for the following to be taken into account at the DCO stage. These criteria should be used to assess site suitability at an early stage.

- **Seismic risk.** Exclusionary
- **Faulting** no comment
- **Non Seismic ground condition.**

This may preclude certain sites due to “waste” costs eg landfill taxes, transport of waste and stability of ground. The impact on groundwater, some of which is tidal, and potential pollution of groundwater is of concern. The prospect of ground heave needs consideration.

- **Meteorological conditions.**

See previous comments on climate change. DEFRA report.

- **Aircraft movements.** Exclusionary.

- **Mining Drilling and underground operations.**

Exclusionary plus co-ordinate with any fracking site or GDF proposals.

- **Emergency planning.**

The ONR PAR report should set the criteria which also has to include severe accident planning according to EU2014/87 at 21 and article 8A. A suggestion in the Nuclear Safety Standards Bill that **the operator, and, or the local authority, should be involved in setting emergency plans** should not be permitted because of a potential conflict of interest. The LA and Operator should only be involved in **implementing** an Emergency Plan. Even so for Sizewell, Suffolk CC has carried out the

VECTOS evacuation modelling but this assumes 75% self evacuation. Under new severe accident criteria (EU2014/87) and judged against IAEA standards there is a need for action within a “few hours” (ONR PAR for Sizewell B allows for up to 30kms). Existing VECTOS evacuation study for Sizewell indicates around 5179 people could be evacuated in 164 minutes. The construction of new reactors alongside an existing hazard eg Wylfa, Sellafield and Sizewell B significantly adds to the size of the local population, with day visitors, holiday makers in caravan accommodation and a number of outage and construction workforce of anything up to 7500, all requiring immediate evacuation. The construction of wind farms in the immediate vicinity of Sizewell B has already confirmed that those people without hard shelter require immediate evacuation and pre-distributed K iodate in the event of an off-site incident at Sizewell.

Emergency planning should be guided by the Demographics criteria and considered as part of the site nomination process.

**We therefore contend that new build is not safe alongside a live or fuelled reactor nor at Sellafield. Therefore must be Exclusionary.**

The VECTOS evacuation modelling can be found at

<file:///E:/Documents/VECTOS%20report%20from%20SCC.pdf>

The Sizewell Site Emergency Offsite Plan (subject to review) is at

<http://www.suffolkresilience.com/assets/PDF-plans/Sizewell/NPM-Sizewell-Off-Site-Plan-Issue-3.5-dated-28-Feb-17.pdf>

## **SOCIETAL ISSUES**

- **Significant infrastructure/resources.**

A transport study is essential early in the process based on independent analysis. The modal split chosen should not interfere with existing services. Highways routes in themselves should not introduce environmental problems.

## **OPERATIONAL REQUIREMENTS**

- **Access to transmission infrastructure.**

**This should be an exclusionary criterion and form part of the national process.**

We do not consider large scale generation is essential or advisory for security of supply. Grid lines become an easy target and may become unstable due to climate change. DEFRA report. We consider that there should be a full study of all proposed connections and an assessment of how storage technologies eg hydrogen should be sited. The potential for marine connections and interconnections with European and other countries needs assessment. In a number of cases the grid lines are potentially damaging to nationally significant sites including Sizewell, Bradwell, Wylfa and Sellafield. In previous CEB and Nuclear Electric site assessments, grid connections were taken account of and sites rejected for unacceptable impacts from grid lines. DEFRA reports on climate change can be found at:-

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69254/pb13358-climate-change-plan-2010-100324.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69254/pb13358-climate-change-plan-2010-100324.pdf)

- **Size of site for decommissioning and construction.**

**This should be an exclusionary criterion and form part of the national process.**

Any construction requires enormous lay-up and spoils storage areas and associated hostel accommodation over a long period of time. This impacts on the environment and amenity and must form part of the national criteria. The long-term impact of construction means it must be considered as part of National criteria, taking into account environment, emergency planning, waste management and demographics. **Sizewell C would fail this criterion, requiring 300ha most within an AONB.**

**Written and sent on behalf of TASC (Together Against Sizewell C )**

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