

Sizewell C Design Principles: the local perspective

The production of these design principles has been led by Suffolk County Council & Suffolk Coastal District Council in collaboration and discussion with National Trust, RSPB, Suffolk Wildlife Trust and the Suffolk Coast & Heaths AONB.

Introduction

- a. Sizewell C should be an environmental exemplar demonstrating how a large infrastructure project can be delivered in an area of very high environmental sensitivity¹.
- b. Sizewell C is wholly within the Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB) and on the Suffolk Heritage Coast (EN-6 vol II c.8.102 (i)). It is the only nuclear new build proposed within a protected landscape in England. The Appraisal of Sustainability² identified that there is the potential for some long lasting adverse direct and indirect effects on landscape character and also visual impacts on the Suffolk Coast & Heaths AONB and Heritage Coast, with limited potential for mitigation, such that it could have an effect on the purpose of the AONB designation. To further understand these effects and the effectiveness of the mitigating actions proposed by the nominator of the site, further detailed assessment at project level will be required – the Appraisal of Sustainability suggests through the provision of an integrated landscape, heritage and architectural plan. The potential for remaining effects can best be fully assessed when detailed plans come forward. However, given the limited scope for mitigation, a level of impact is likely to remain.
- c. The Appraisal of Sustainability has also identified the potential for impact on national & international wildlife sites. It outlines the potential for mitigation and compensation of biodiversity effects on UK sites (Sizewell Marshes SSSI), including the creation of replacement habitat. It states developers can avoid or minimise disturbance to protected species through careful site layout, design, routing, location of the development, associated infrastructure, and construction management and timings. The Appraisal of Sustainability finds that there is potential for habitat creation within the wider area in order to replace lost ‘wet meadows’ habitats of the Sizewell Marshes SSSI. The applicant will need to develop an ecological mitigation and management plan to minimise the impacts. Impacts on bats & reptiles particularly will need adequate mitigation or compensation.
- d. Sizewell B is seen as an iconic structure, and one that arguably adds to the intrigue and character of the Suffolk coast. It represents a significant step change in design from Sizewell A. Sizewell B proves that innovative design can go hand in hand with operational functionality and safety and security requirements.

¹ [SCC Cabinet report of 29/01/2013](#)

² Which accompanied the National Policy Statement EN-6

- e. The design and layout of the principal and ancillary buildings and associated infrastructure (including lighting and fencing) at Sizewell C are a fundamental component of how this project can be sensitive to place. This is a prerequisite of the criteria for “good design” set out in the National Policy Statement EN-1. Furthermore, the nuclear specific National Policy Statement EN-6 goes further to state that consideration of design is important to mitigate the negative effects of development, such as landscape and visual impacts. A summary of the relevant extracts of the National Policy Statements is appended to this note.
- f. Design and layout of the site and its associated infrastructure needs to work across a number of inter-related areas including landscape, ecology, hydrology and the vision for EDF’s estate. These issues must be afforded considerable weight alongside the safety, security, operational and engineering aspects of the development.

Suffolk’s Design Principles

1. Sizewell C must be sensitive to place, both in terms of design, layout and finishes, sited as it will be in a nationally protected landscape and heritage coast area and adjacent to and on wildlife sites of national and international importance. A return to the incongruous design and bare concrete of Sizewell A is unacceptable. The design should also have regard to any future decommissioning of Sizewell A & B and the visual changes decommissioning will incur over the next century or more.
2. Given that EN-1 & EN-6 both state that design is an important part of mitigating the impact of new infrastructure, the design and treatment of Sizewell C’s principal structures must relate well to the surrounding landscape and seascape, existing buildings and the way in which they may change over the next century. In particular, the design must respect and work with the iconic design and treatment of the B station. Sizewell B demonstrates ‘the art of the possible’, with a combination of innovative design solutions that meet operational, security and safety requirements.
3. The appearance and proportions of the Sizewell C domes and stacks are a critical design issue given the design of Sizewell B. EDF will need to fully justify why the bare concrete domes and visible stacks, cannot be incorporated under a clad superstructure, as with Sizewell B. Given the national landscape designation of the area and the importance of sensitivity to place, cost should not be the sole determining factor.
4. All design should be robust through time and finishes should be long lasting and capable of being refreshed.
5. The Generic Design Assessment for the principal buildings should be tested, in terms of the latitude for innovative design and treatment, within the confines of operational, security and safety requirements. This should include the height of the stacks, which should be fully justified in the context of visual and potential ecological impacts.

6. The design, layout and finishes of ancillary buildings and infrastructure (including bridges, lighting and fencing) on the C station should also be designed to ensure that they minimise visual impact, such as through the use of green walls. Low level visual clutter should be minimised, and the amalgamation of the ancillary buildings should be fully explored. The height of the buildings adjacent to the edges of the site should take into account the visibility from the surrounding countryside.
7. All temporary infrastructure used to facilitate construction should be removed following construction and the visual impact of any remaining 'footprint' or remnant of temporary development minimised.
8. Landscaping to minimise the visual intrusion, and enhance local landscape character and biodiversity must be considered hand-in-hand with building design. The landscape and visual impacts, as set out in the Appraisal of Sustainability (accompanying NPS EN-6), will be such that offsite compensatory landscape and amenity enhancements to the wider area (AONB landscapes and beyond) will be required. The seascape and visual impacts should also be assessed, given the protected AONB landscape of the coast and also the extent of the Heritage Coast definition off-shore. The requirement to consider seascape as part of the landscape and visual effects of energy projects is set out in EN-1 section 5.9.1. The UK Marine Policy Statement (section 2.6.5) similarly points to the need to assess impacts on seascape.
9. Design of the main and ancillary infrastructure should have regard to the potential for embedded ecological mitigation and enhancement (such as green & brown roofs, green walls, appropriate vegetation planting and bird nesting habitat, including but not limited to black redstart, peregrine falcon and swift). The design should also have regard to the need to minimise any adverse impacts on species and habitats, with particular attention to bridges, lighting, large areas of glass and baffling of noise sources. The ecological impacts of Sizewell C, as set out in the Appraisal of Sustainability (accompanying NPS EN-6), will be such that offsite compensatory habitat and enhancements to the wider area (AONB landscapes and beyond) will be required. Where compensating direct losses of habitat, these will need to be functioning in advance of any losses.
10. Coastal protection and MOLF design must demonstrate sensitivity to place and coastal processes. Design should take advantage of opportunities to enhance land/seascape character and terrestrial & marine biodiversity.
11. Public access, both permissive and statutory, must be fully considered as part of the design. This is particularly important in terms of coastal protection and the MOLF, regarding maintaining access to the beach. However, design must have consideration of the visual amenity of permissive and statutory routes both coastal and further inland.
12. Sizewell C should be an exemplar in terms of innovative nuclear power station design in the 21st century and add to the intrigue and character of

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the Suffolk coast. The development should be something that both local communities can embrace and that EDF-Energy can be proud of as a legacy.

ANNEX

Design and the National Policy Statements EN-1 & EN-6

EN-1 provides some very clear direction to applicants in relation to good design, principally in section 4.5, entitled “Criteria for “good design” for energy infrastructure, which sets out that;

- Applying good design to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible.
- Good design is also a means by which impacts can be mitigated.
- PINS should satisfy itself that the applicant has taken into account both functionality (fitness for purpose & sustainability) and aesthetics (contribution to the quality of the area in which it will be located) as far as possible.
- An acknowledgement that applicants may have limited or no choice in terms of physical appearance (though this paper notes that the example of Sizewell B demonstrates what is possible in terms of innovative design of a nuclear power station).
- Application documents should present process, choices, reasons for favoured choice etc of design.
- PINS should take into account the ultimate purpose of the infrastructure and bear in mind the operational, safety & security requirements which the design has to satisfy.

Section 5.9.1 of EN-1 states the landscape and visual effects of energy projects will vary on a case by case basis according to the type of development, its location and the landscape setting of the proposed development. In this context, references to landscape should be taken as covering seascape and townscape where appropriate.

Section 5.9.11 of EN-1 states PINS should ensure that projects consented in AONBs should be carried out to high environmental standards.

EN-6 (Volume I) provides further guidance regarding design issues, in particular Section 2.8 which further qualifies the design tests set out in EN-1 in requiring that;

- Good design should be applied to all Nationally Significant Infrastructure Projects. The need for safety and security of the nuclear power station, and the need to control the impacts of its operations, must be given substantial weight.
- PINS should consider how good design can act to mitigate the impacts of new nuclear power stations, such as landscape and visual impacts (the effectiveness of the B station design is an example of this).
- The Generic Design Assessment, site licensing and environmental permitting processes will consider certain aspects of design, which PINS should not replicate.

Section 3.10 of EN-6 concerns landscape and visual impacts of nuclear development. It:

- Identifies the potential for long-term effects on visual amenity at Sizewell, given the Suffolk Coast & Heaths AONB.
- Acknowledges that cooling towers may increase a nuclear power station's visual impact on the landscape and further states that applicants should justify the use of a natural draft cooling system given that towers are large and can emit significant steam plumes.
- States that PINS would not expect visual impacts to be eliminated with mitigation, given that the scope for mitigation will be quite limited. Mitigation should however be designed to reduce the visual intrusion of the project as far as reasonably practicable.

Volume II of EN-6 discusses the Sizewell C site in detail, noting that the nominator has proposed that visual impacts could be mitigated by siting the main buildings on the same visual axis of the existing stations.

Although the layout proposed in the Stage One consultation does broadly meet these criteria regarding the easterly line, reactor buildings are further west than that of the B station. Furthermore the western peripheral buildings appear to be larger than those of the B station, thereby potential increasing the east-west depth of large buildings, particularly from views up and down the coast.

Furthermore, the accompanying Appraisal of Sustainability identifies that;

- While existing power stations at Sizewell are already prominent features within the AONB, the new power station, given the scale of the development, is likely to cause long lasting adverse direct and indirect effects on landscape character and visual impacts of the AONB.
- There is the potential for some long lasting adverse direct and indirect effects on landscape character and visual impacts on the AONB, with limited potential for mitigation given that the nominated site is wholly within the AONB.
- That Sizewell C could be so damaging as to have an effect on the purpose of the designation.