



The Sizewell C Project

6.11 Volume 10 Project-wide, Cumulative and Transboundary Effects

Chapter 1 Introduction and Methodology

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VOLUME 10 CHAPTER 1: INTRODUCTION AND METHODOLOGY

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1. Introduction and Methodology

1.1 Introduction

1.1.1 This volume of the **Environmental Statement (ES)** presents details of the different cumulative effects assessments of the Sizewell C Project (hereafter referred to as 'the proposed development'). These take into account the following:

- inter-relationship effects;
- project-wide effects;
- effects with other plans, projects and programmes; and
- transboundary effects.

1.1.2 This chapter provides details of the following for three of the four (inter-relationship, project-wide, and other plans, projects and programmes):

- the scope and structure of the assessments;
- relevant legislation, policy and guidance; and
- the assessment methodology.

1.1.3 The cumulative effects assessment (for inter-relationship effects, project-wide effects, and effects with other plans, projects and programmes) is then set out in **Chapters 2 to 4** of this volume respectively.

1.1.4 **Chapter 5** of this volume sets out the scope and structure, relevant legislation, policy and guidance, assessment methodology, and the assessment of transboundary effects.

a) Overview of the Sizewell C Project

1.1.5 SZC Co. is proposing to build a new nuclear power station at Sizewell in East Suffolk, known as Sizewell C. As described in **Volume 2** of the ES (Doc Ref. 6.3), the proposed Sizewell C nuclear power station would comprise¹:

¹ This does not form an exhaustive list. For full information on the Sizewell C power station please see **Chapters 2 to 5** of **Volume 2** of the ES.

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- nuclear islands, including two UK European Pressurised Reactor (EPR™) buildings;
- conventional islands, including two turbine halls and associated electrical buildings;
- an operation service centre;
- two cooling water pumphouses and associated buildings;
- ancillary buildings;
- marine works and associated infrastructure including the cooling water system and combined drainage outfall; and
- other structures and infrastructure including the beach landing facility, flood defences and coastal protection measures and new sports pitches at Alde Valley School in Leiston.

1.1.6 The Sizewell C Project also comprises a number of other off-site associated developments to support the construction and operation of the Sizewell C nuclear power station, as described in **Volume 3 to 9** of the **ES** (Doc Ref. 6.4 to 6.10). These are:

- two temporary park and ride facilities, one at Darsham, as described in **Volume 3** of the **ES** (Doc Ref. 6.4), and one at Wickham Market, as described in **Volume 4** of the **ES** (Doc Ref. 6.5);
- a permanent road to bypass Stratford St Andrew and Farnham, as described in **Volume 5** of the **ES** (Doc Ref. 6.6);
- a permanent road linking the A12 to the Sizewell C main development site, as described in **Volume 6** of the **ES** (Doc Ref. 6.7);
- permanent highway improvements at the junction of the A12 and B1122 east of Yoxford (referred to as the ‘Yoxford roundabout’) and other road junctions to accommodate Sizewell C construction traffic, as described in **Volume 7** of the **ES** (Doc Ref. 6.8);
- a temporary freight management facility at Seven Hills, as described in **Volume 8** of the **ES** (Doc Ref. 6.9); and
- a temporary extension of the existing Saxmundham to Leiston branch line into the main development site and other permanent rail improvements on the Saxmundham to Leiston branch line, as described in **Volume 9** of the **ES** (Doc Ref. 6.10).

1.1.7 The components listed above are referred to collectively as ‘the proposed development’ within this volume of the **ES** and are shown in **Figure 1.1** of this volume.

b) [Overview of the assessment of inter-relationship effects, project-wide effects and effects with other plans, projects and programmes](#)

1.1.8 The assessment of cumulative effects presented in this volume of the **ES** includes consideration of:

- **Inter-relationship effects:** Effects that occur when different environmental impacts interact with one another with the potential to result in significant effects on a resource and/or receptor (for example, noise, dust and visual effects on a particular receptor, or changes to hydrology on ecological receptors). With the exception of inter-relationship effects on residential properties, commercial facilities and schools, these inter-relationships are generally already assessed and presented in the site-specific technical topic chapters of **Volumes 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10). Inter-relationship effects on residential properties, commercial facilities and schools are detailed in **Chapter 2** of this volume, together with a summary of those inter-relationships identified in the technical topic-chapters of **Volume 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10).
- **Project-wide effects (intra-project):** Effects that occur when environmental impacts from different components of the proposed development combine, resulting in the potential for a significant effect (for example, the combination of road traffic noise of one component of the proposed development and road traffic noise of another component of the proposed development on a residential receptor). If considered in isolation, the individual environmental impacts may not lead to significant effects.
- **Effects with other plans, projects and programmes:** Effects that occur when environmental impacts from the proposed development combine with impacts from other planned/potential third party projects, plans and programmes (normally in the vicinity of the site), resulting in a change to the overall magnitude of impact acting on a receptor and potentially resulting in a significant effect.

1.1.9 In addition to the assessment of inter-relationship effects, project-wide effects and effects with other plans, projects and programmes, the scope of the Environmental Impact Assessment (EIA) includes an assessment of and transboundary effects. Transboundary effects occur when the impacts of the proposed development extend beyond the United Kingdom (UK) to another

European Economic Area State. These impacts are assessed on a project-wide basis and are detailed in **Chapter 5** of this volume.

1.2 Environmental impact assessment and this environmental statement

a) Requirement for environmental impact assessment

1.2.1 Schedule 1 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/572) (as amended) (hereafter referred to as the 'EIA Regulations') (Ref. 1.1) lists development for which an EIA is mandatory. Nuclear power stations are listed as Schedule 1 development, and consequently an EIA is required for the proposed development. Further detail on the requirement for an EIA is provided in **Volume 1** of this **ES** (Doc Ref. 6.2).

b) Environmental impact assessment scoping

1.2.2 In June 2014 SZC Co. obtained a scoping opinion from the Secretary of State, under Regulation 8 of the 2009 EIA Regulations (Ref. 1.2). In May 2019 SZC Co. submitted a further request to the Planning Inspectorate for a scoping opinion to include the scope of assessments for the revised proposed development which were not previously scoped for, as provided in **Volume 1, Appendix 6A** of the **ES** (Doc Ref. 6.2). This also included the scope of assessments for the additional environmental effects to be considered under the 2017 EIA Regulations (in particular, climate change, human health and risk of major accidents and disasters). A scoping opinion was issued by the Secretary of State in July 2019, provided in **Volume 1, Appendix 6B** of the **ES** (Doc Ref. 6.2).

c) Structure of the environmental statement

1.2.3 This volume should be read in conjunction with **Volume 1** of the **ES** (Doc Ref. 6.2), which presents an introduction to SZC Co. and the proposed development; the application for development consent; the EIA process and methodology; the legislative and policy context; the strategic alternatives considered; a description of the other permits and licences required; and a glossary of terms and list of abbreviations.

1.2.4 This volume, **Volume 10** of the **ES**, is structured as follows:

- **Chapter 1:** Introduction and Methodology (this chapter).
- **Chapter 2:** Assessment of Inter-relationship Effects.
- **Chapter 3:** Assessment of Project-Wide Effects.

- **Chapter 4:** Assessment of Effects with Other Plans, Projects, and Programmes.
 - **Chapter 5:** Assessment of Transboundary Effects.
- 1.2.5 This volume should also be read in conjunction the **Consultation Report** (Doc Ref. 5.1) which summarises the responses received from the public and statutory stakeholders to SZC Co.’s consultations and explains how the proposed development has evolved in response to the consultations.
- 1.2.6 In line with the requirements of regulation 14(4) of the EIA Regulations, this **ES** has been prepared by competent experts. A statement of competence outlining the relevant expertise and qualifications of the technical specialists, along with their role in undertaking the EIA has been provided within **Volume 1, Appendix 1B** of the **ES** (Doc Ref. 6.2).
- 1.3 **Legislation, policy and guidance**
- a) **Inter-relationship and project-wide effects**
 - i. **International**
- 1.3.1 Directive 2014/52/EU (Ref. 1.3) of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment (‘EIA Directive’) (Ref. 1.4) states the following:
- “The environmental impact assessment shall identify, describe and assess in an appropriate manner, in the light of each individual case, the direct and indirect significant effects of a project on the following factors:*
- (a) population and human health;*
 - (b) biodiversity, with particular attention to species and habitats protected under Directive 92/43/EEC and Directive 2009/147/EC;*
 - (c) land, soil, water, air and climate;*
 - (d) material assets, cultural heritage and the landscape;*
 - (e) the interaction between the factors referred to in points (a) to (d).”*

ii. National

Legislation

Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

- 1.3.2 The EIA Regulations (Ref. 1.1) transpose the EIA Directive into UK law and states that the interaction between different environmental factors must be considered.

Policy

National Policy Statements

- 1.3.3 As stated in **Volume 1, Chapter 3** of the **ES** (Doc Ref. 6.2), whilst other matters may constitute important and relevant considerations in the decision making process under section 105(2)(c) of the Planning Act 2008, significant weight should be given to the policies contained within the Overarching National Policy Statement (NPS) for Energy (NPS EN-1) (Ref. 1.5) and the NPS for Nuclear Power Generation (NPS EN-6) (Ref. 1.6).
- 1.3.4 The NPSs set out the Government’s energy policy; the need for new infrastructure; and guidance for determining an application for a Sizewell C Development Consent Order. The NPSs include specific criteria and issues which should be covered by applicants’ assessments of the effects of their scheme, and how the decision maker should consider these impacts. The formal status of the NPSs is explained in Chapter 3 of the Planning Statement Doc Ref. 8.4).
- 1.3.5 The need to consider effect interactions is also set out in the NPS EN-1 (Ref. 1.5) paragraph 4.2.6 stating that the Infrastructure Planning Commission “..should consider how the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place”.

iii. Regional

- 1.3.6 There is no legislation or policy relevant to the assessment of inter-relationships or project-wide effects at a regional level.

iv. Local

- 1.3.7 There is no legislation or policy relevant to the assessment of inter-relationships or project-wide effects at a local level.

v. Guidance

1.3.8 There is no established EIA methodology for assessing and quantifying effects on sensitive receptors or resources resulting from the interaction of different impacts from the same project. However, the European Commission has produced guidelines for assessing effect interactions (Ref. 1.7) and gives *“advice on ... how to adapt the approach to a specific project and suggests methods and tools for identifying and assessing indirect and cumulative impacts, as well as impact interactions.”*

1.3.9 It is noted though that these guidelines *“are not intended to be formal or prescriptive, but are designed to assist EIA practitioners in developing an approach which is appropriate to a project...”*.

b) Effects with other plans, projects, and programmes

i. International

1.3.10 The EIA Directive (Ref. 1.3) sets out how an EIA should cover cumulative effects; this has been transposed into UK law through the EIA Regulations (Ref. 1.1) and is discussed in the following section of this Chapter.

ii. National

Legislation

Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

1.3.11 Schedule 4, paragraph 5 of the EIA Regulations (Ref. 1.1) requires *“A description of the likely significant effects of the development on the environment resulting from, inter alia - (e) the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources’ and that ‘The description of the likely significant effects on the factors specified in regulation 5(2) should cover the direct effects and any indirect, secondary, cumulative, transboundary, short-term, medium-term and long-term, permanent and temporary, positive and negative effects of the development...”*.

Policy

National Policy Statements

- 1.3.12 The need to consider cumulative effects is set out in the Overarching NPS EN-1 (Ref. 1.5) paragraph 4.2.5, which states *“When considering cumulative effects, the ES should provide information on how the effects of the applicant’s proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)”*.
- 1.3.13 The NPS EN-6 (Ref. 1.6) references cumulative effects as an important consideration throughout. The nuclear Appraisal of Sustainability (AoS) (Ref. 1.8) indicates that cumulative effects need to be considered in project level EIAs and Habitat Regulations Assessments (HRAs). Within paragraph 3.7.4 of the NPS EN-6, reference is made to NPS EN-1 reinforcing the importance of cumulative effects when considering the consent application stating that: *“The Infrastructure Planning Commission (IPC) should consider the cumulative effects of a development consent application for the construction of a new nuclear power station at a specific site with other major infrastructure proposals in accordance with the requirements of EN-1 (in particular Section 4.2 of EN-1)”*. Cumulative effects should be considered holistically for all disciplines, Paragraph 3.9.4 within NPS EN-6 pays specific attention to ecological effects stating that: *“At the project level, baseline studies on nationally and internationally important habitats and species that may be affected as a result of the development should be undertaken by the applicant to inform the assessment of the cumulative ecological effects”*.
- 1.3.14 NPS EN-6 AoS (Ref. 1.8) for site-selection, identifies a potential cumulative adverse effect on the European designated site of the Outer Thames Estuary if new nuclear power stations are built at both Sizewell and Bradwell, due to adverse effects on water quality, resources and habitats.

iii. Regional

- 1.3.15 There is no legislation or policy relevant to cumulative effects with other projects, plans or programmes at a regional level.

iv. Local

- 1.3.16 There is no legislation or policy relevant to cumulative effects with other projects, plans or programmes at a local level.

v. Guidance

1.3.17 The Planning Inspectorate’s Advice Note 17: Cumulative effects assessment relevant to nationally significant infrastructure projects (Version 2, August 2019) (Ref. 1.9) sets out *“a staged process that applicants may wish to adopt a cumulative effects assessment for Nationally Significant Infrastructure Projects”* given there is no industry standard method for cumulative effects assessment. It seeks to provide:

- *“a brief description of the legal context and obligations placed on an applicant, with respect to cumulative effects under national planning policy and the EIA Regulations;*
- *an overview of the cumulative effects assessment process that applicants may wish to adopt for Nationally Significant Infrastructure Projects (NSIPs); and*
- *advice regarding a staged approach and the use of consistent template formats for documenting the cumulative effects assessment within an applicant’s Environmental Statement (ES).”*

1.3.18 The Institute of Environmental Management and Assessment (IEMA) report entitled The State of Environmental Impact Assessment Practice in the UK (2011) (Ref. 1.10) states that: *“EIA includes the requirement to identify not only the project’s direct effects, but also a range of secondary effects including cumulative, synergistic and inter-relationship effects. Practitioners must ensure they consider both intra-project and inter-project cumulative effects....”*

1.4 Methodology

1.4.1 This section describes the approach and methodology applied to the following cumulative effects assessments:

- inter-relationship effects (on residential properties, commercial facilities and schools).
- project-wide effects; and
- effects with other plans, projects and programmes.

a) Scope

1.4.2 The generic Environmental Impact Assessment (EIA) methodology is described in **Volume 1, Chapter 6** of the **ES**.

- 1.4.3 This section provides a summary of the approach to the assessment of cumulative effects.
- 1.4.4 The scope of this assessment has been established through a formal EIA scoping process undertaken with the planning inspectorate. A request for an EIA Scoping Opinion was initially issued to the planning inspectorate in 2014, with an updated request issued in 2019 - **Volume 1, Appendix 6A** of the **ES** (Doc Ref. 6.2).
- 1.4.5 Comments raised in the EIA Scoping Opinion received in 2014 and 2019 have been taken into account in the development of the assessment methodology. These are detailed in **Volume 1, Appendices 6A to 6C** of the **ES** (Doc Ref. 6.2).
- 1.4.6 The Secretary of State’s comments in the Scoping Opinions included a recommendation that *the “project-wide’ assessments are given careful consideration to ensure a robust approach is applied”*. SZC Co. has had regard to this comment by the inclusion of the assessment of project-wide effects in **Chapter 3** of this volume.
- 1.4.7 In the Scoping Opinions, the Secretary of State stated that the ES should not be a series of disparate reports and stressed the importance of considering inter-relationship effects and effects with other plans, projects and programmes throughout the ES.
- b) Consultation
- i. Inter-relationship effects
- 1.4.8 No further consultation has been undertaken in relation to the assessment of inter-relationship effects.
- ii. Project-wide effects
- 1.4.9 No further consultation has been undertaken in relation to the assessment of project-wide effects.
- iii. Effects with other plans, projects and programmes
- 1.4.10 Consultation on the approach and scope of the assessment of cumulative effects with other plans, projects and programmes has been undertaken with East Suffolk Council (ESC). Throughout the consultation on the effects with other plans, projects, and programmes, ESC also represented Suffolk County Council (SCC). A summary of the general comments from ESC and SZC Co.’s responses are detailed in **Table 1.1**. Specific comments on the technical assessments of the main development site and associated

development are included within the respective methodology appendices within **Appendices 6D to 6Y** of **Volume 1** of the **ES** (Doc Ref. 6.2), where relevant.

Table 1.1: Summary of consultation responses that have informed the scope and methodology of the assessment of cumulative effects with other plans, projects, and programmes

Consultee	Date	Summary of discussion/ comments
Effects with Other Plans, Projects and Programmes		
ESC	9 th May 2019 (Email)	<p>Consultation was undertaken on a draft long list of other plans, projects and programmes. In response to this draft, ESC requested the inclusion of allocations, as set out within the existing Suffolk Coastal District Council Local Plan in addition to the Emerging East Suffolk Local Plan , within the final long list.</p> <p>The final long list was then distributed to technical specialists for consideration. Plans, projects and programmes were then included in the short list, see Appendix 1A of this volume, where they were considered to have the potential for cumulative effects based on determining factors, such as nature, location and scale.</p>
ESC	19 th September 2019 (Email)	<p>Information was provided on the status of the short list of schemes to assist in the identification of schemes to include in the baseline and those which are to be future baseline. Information on schemes which had been withdrawn allowed these to be removed from consideration.</p>

1.4.11 In addition to the EIA, a **Shadow Habitats Regulations Assessment (HRA) Report** (Doc Ref. 5.10) for the proposed development has been undertaken to fulfil the requirements of the Conservation of Species and Habitats Regulations 2017 (Ref. 1.11). Regulation 63 of these regulations requires an assessment of the scheme with other plans and projects, referred to as an ‘in-combination’ assessment. Although focussing on species and habitats alone, this represents a ‘cumulative’ assessment as described by the EIA Regulations. The cumulative effects with other plans, projects, and programmes assessment presented in **Chapter 4** of this volume and HRA in-combination assessments have been aligned, through the application of the same technical assessment methodologies and consideration of the same schemes. Consultation on the assessment of marine schemes has been undertaken through the development of the in-combination assessment for the **Shadow HRA Report** (Doc Ref. 5.10). This was undertaken through

the HRA Working Group and direct liaison with agents and applicants. For further detail on the HRA, refer to the **Shadow HRA Report** (Doc Ref. 5.10).

1.4.12 Consultation has also been undertaken) with Scottish Power to understand their project timelines and potential for overlap with the proposed development. Further details are included in the **Transport Assessment** (Doc Ref. 8.5).

c) **Assessment criteria**

1.4.13 As described in **Volume 1, Chapter 6** of the **ES** (Doc Ref. 6.1), the EIA methodology considers whether impacts of the proposed development would have an effect on any resources or receptors. Assessments broadly consider the magnitude of impacts and the value/sensitivity of resources/receptors that could be affected in order to classify effects.

1.4.14 The assessments have been undertaken on the basis of the results of the technical assessments and therefore this volume should be read in conjunction with the technical chapters within **Volumes 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10).

i. **Inter-relationship effects**

1.4.15 The inter-relationship effects assessment has identified the potential for new or different significant environmental effects as a result of a combination of one or more environmental effects, using the criteria provided within **Table 1.2**.

Table 1.2: Criteria for assessing the potential for new or different significant environmental effects as a result of inter-relationships

Potential	Description
High	Where a receptor or receptor group is likely to experience one or more significant environmental effects.
Low	Where a receptor or receptor group is likely to experience one or more not significant, but no significant, environmental effects.
No	Where a receptor or receptor group is likely to experience environmental effects that have only been identified for one topic area and there is no identified inter-relationship.

iv. **Project-wide effects and effects with other plans, projects and programmes**

1.4.16 The criteria for the assessment of project-wide effects and the effects with other plans, projects and programmes is the same as the assessment methodology for each of the individual technical assessments presented in

Appendices 6D to 6Y of Volume 1 of the ES (Doc Ref. 6.2). Therefore, reference should be made to each technical chapter as relevant. This includes the consideration of sensitive resources and receptors, significance criteria and classification of effects.

b) **Inter-relationship effects - assessment methodology**

1.4.17 There is no established methodology for assessing the effects on sensitive receptors or resources resulting from the interaction or inter-relationship of different effects.

1.4.18 A two stage screening exercise was undertaken to identify the environmental receptors considered within the **ES** to consider if they could experience a combination of adverse or beneficial effects (inter-relationship effects) as a result of the proposed development. The screening exercise concluded that the majority of potential inter-relationship effects associated with the proposed development are either inherently considered or clearly identified and assessed within the technical assessments in **Volumes 2 to 9 of the ES** (Doc Ref. 6.3 to 6.10). For example, where there is the potential for a receptor to be impacted by an effect reported in another technical chapter, this is identified and assessed as appropriate in the receptor chapter, for example the Terrestrial Ecology and Ornithology assessment presented in **Chapter 14 of Volume 2 of the ES** (Doc Ref. 6.3) considers how impacts associated with construction works on groundwater and surface water described in **Volume 2, Chapter 19 of the ES** (Doc Ref. 6.3) affect ecological resources and receptors.

1.4.19 However, the screening exercise identified that potential inter-relationship effects on residential receptors, commercial facilities and schools are not considered within **Volumes 2 to 9 of the ES** (Doc Ref. 6.3 to 6.10) and require further assessment. These receptors could experience a combination of one or more of the following topic effects:

- noise and vibration;
- air quality; and
- landscape and visual effects.

1.4.20 **Chapter 2** of this volume provides the inter-relationship effects assessment. As set out below, this includes further detail on the screening exercise and the assessment of the inter-relationship effects on residential receptors, commercial facilities and schools.

i. Screening exercise

1.4.21 The two stage screening exercise was undertaken to identify the potential inter-relationship effects that could occur during the construction, operation and removal and reinstatement phases (where necessary) of the proposed development. The aim of the screening exercise was to identify if any resources or receptors could experience additional inter-relationship effects to those considered within the technical assessments in **Volumes 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10).

1.4.22 Full details and the findings of the screening exercise are provided within **Chapter 2** of this volume.

Stage 1

1.4.23 The first stage of the screening exercise was undertaken to identify where resources and/or receptors could be affected by more than one type of effect (usually where they were considered in more than one technical chapter). Resources and/or receptors were categorised into two groups, those with potential to experience inter-relationship effects, and those with no potential to experience inter-relationship effects:

- Potential - where it was identified that either there were two or more types of effect for a particular resource or receptor, or two or more topics had identified effects on that resource or receptor.
- No potential - Where it was identified that either there was only one type of effect for a particular resource or receptor, or only one topic had identified effects on that resource or receptor.

1.4.24 Where no potential was identified these were not considered further within the assessment.

Stage 2

1.4.25 The second and final stage of the screening exercise was to identify the inter-relationship effects considered within the technical assessments of **Volume 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10) to identify if any of the identified potential inter-relationship effects are already assessed. Where potential for inter-relationship effects had been identified but were not already considered in **Volume 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10), these were taken forward for separate and further consideration and assessment, as provided in **Chapter 2** of this volume.

ii. **Assessment of inter-relationship effects on residential properties, commercial facilities and schools**

1.4.26 An assessment of inter-relationship effects not inherently considered within **Volumes 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10) is presented in **Appendix 2A** of this volume and summarised in **Chapter 2**. The assessment considers the potential for an identified receptor or receptor group to experience a combination of adverse or beneficial effects as a result of the proposed development through changes in air quality, the noise environment and visual amenity.

1.4.27 The potential for new or different significant environmental effects to arise as a result of a combination of one or more environmental effects has been assessed using the criteria provided within **Table 1.2**.

c) **Assessment of Project-wide effects - assessment methodology**

1.4.28 Prior to the consideration of potential cumulative effects with other projects, plans and programmes, project-wide effects have been assessed, where impacts from two or more discrete parts of the proposed development (e.g. between the Sizewell C main development site and off-site associated development) have the potential to combine to result in a greater impact overall.

1.4.29 Project-wide effects have been assessed for construction, operation; and removal and reinstatement (where applicable). For some assessments, the construction phase impacts for the proposed development are assessed for the early years of construction (assumed 2023) and the peak year of construction at the main development site (assumed 2028). A description of the anticipated activities for the decommissioning of the Sizewell C power station, including a summary of the types of environmental effects likely to occur, is provided in **Chapter 5, Volume 2** of the **ES** (Doc Ref. 6.3).

1.4.30 As described in **Volume 1, Chapter 6** of the **ES** (Doc Ref. 6.2), the EIA methodology considers whether impacts of the proposed development would have an effect on any resources or receptors. Assessments broadly consider the magnitude of impacts and value/sensitivity of resources/receptors that could be affected in order to classify effects. Unless stated otherwise, the methodology for the project-wide assessments follows the topic-specific criteria on the approach to the assessment provided in **Volume 1, Appendices 6D to 6Y** of the **ES** (Doc Ref. 6.2).

1.4.31 A number of the assessments presented within **Volume 2** of the **ES** (Doc Ref. 6.3) present an assessment of the project-wide environmental effects, however, there is potential for new and/or different environmental effects, in addition to those identified within the technical assessments in **Volumes 2** to

9 of the **ES** (Doc Ref. 6.3 to 6.10), to arise where two or more of the components of the Sizewell C Project impact upon the same receptor. Within **Chapter 3** of this volume, each technical discipline provides a summary of the potential for the new and/or different environmental effects when considering the effects of the different components of the Sizewell C Project together. This was undertaken, using the agreed study areas (as set out in **Volume 1, Appendices 6D to 6Y** of the **ES** (Doc Ref. 6.2) and identifying where a resource or receptor is considered within more than one volume of the **ES** for the same technical discipline. The chapter then provides an assessment of the identified potential project-wide effects.

1.4.32 The assessment does not identify new potential resources and/or receptors but identifies and sets out the residual effects of the Sizewell C Project.

d) [Effects with other plans, projects, and programmes - assessment methodology](#)

1.4.33 The topic specific impact assessments assess potential impacts from a range of sources resulting from the proposed development and the associated effects on the identified sensitive receptors. Where the project-wide impacts from the proposed development could combine with an impact from a third party (non-Sizewell C) project, plan and/or programme, it may have the potential to result in a larger, or different, effect on a given receptor.

1.4.34 A staged process has been followed to assess cumulative impacts with other plans, projects and programmes as recommended by the Planning Inspectorate's Advice Note 17.

i. [Stage 1: establishing a zone of influence and long list of non-Sizewell C plans, projects and programmes](#)

1.4.35 To inform the assessment of cumulative effects with non-Sizewell C plans, projects and programmes, the reasonable maximum geographical area around the Sizewell C Project sites, where there is potential for impacts to occur, has been established through the identification of a zone of influence (ZOI). Further details on each of the ZOIs is provided within each of the technical sections of **Chapter 4** of this volume. This includes additional information on how the ZOI has been identified and how it differs between each of the Sizewell C Project sites.

1.4.36 In addition to the plans, projects and programmes within the ZOI, there have been other developments that have been identified through engagement that required consideration on a topic-specific basis, for example, SCC has requested that projects affecting the A12 and A14, such as Felixstowe Port located approximately 40km away from the proposed development, are considered in the **Transport Assessment** (Doc Ref. 8.5). Where

appropriate, these projects have been included within a long list of other plans, projects and programmes, which may have the potential to generate cumulative impacts along with the Sizewell C Project – see **Appendix 1A** of this volume for further detail.

- 1.4.37 Although the ZOI differs between the environmental topics, for the purposes of the data gathering exercise, the maximum reasonable ZOI for the proposed development is 20km around the Sizewell C main development site, and 5km around the associated development sites, with the exception of the rail improvement works where the reasonable ZOI is considered to be 1km. These ZOIs were considered to be the maximum extent for impacts likely to be produced by Sizewell C for the different assessment topics.
- 1.4.38 The ZOI has been mapped using Geographical Information Systems (GIS) and is illustrated on **Figure 1.1** and formed the search area to identify non-Sizewell C project, plans and programmes that have the potential to result in significant cumulative effects. These are detailed in the ‘long list’ provided in **Appendix 1A** of this volume, which provides information on all of the identified plans, projects and programmes within the ZOI for consideration within the cumulative effects assessment.
- 1.4.39 The proposed development could have a degree of influence beyond the 20km ZOI for a small number of topics (for example ecology considers migratory species). Where there is the potential for wider cumulative effects, these are reported in the topic-specific cumulative assessment sections in **Chapter 4** of this volume as well as other relevant reports including the **Shadow HRA Report** (Doc Ref. 5.10).
- 1.4.40 Non-Sizewell C plans, projects and programmes have been identified through the EIA scoping process, stakeholder engagement and a review of publicly available information (such as applications on local planning authorities’ Planning Portals, Local Plan web pages and the Marine Management Organisation’s Marine Licence application portal). Non-Sizewell C projects, plans and programmes have been included on the basis that they are either:
- under construction;
 - permitted application(s)², but not yet implemented (those from the past 5 years have been considered, taking into account those that received

² Permitted under the Planning Act 2008, Town and Country Planning Act 1990, Transport and Works Act 1992, Marine and Coastal Access Act 2009.

planning consent over 3 years ago and are still valid, but have not been completed);

- submitted application(s) not yet determined;
- refused, subject to appeal procedures not yet determined;
- developments where EIA Screening and/or Scoping has been undertaken but a full planning application has not yet been submitted;
- on the National Infrastructure Planning Programme of Projects (Ref. 1.12);
- identified in the following documents
 - Suffolk Coastal District Council existing Local Plan (Ref. 1.13);
 - Waveney Local Plan (Ref. 1.14);
 - Emerging Suffolk Coastal District Council Local Plan (Ref. 1.15);
 - Felixstowe Peninsula Area Action Plan Development Plan Document (Ref. 1.16);
 - SCC Minerals Specific Site Allocation Development Plan (Ref. 1.17); and
 - SCC Waste Core Strategy (Ref. 1.18).
- identified in other plans and programmes, such as the following (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward;
 - Anglian River Basin District Flood Risk Management Plan 2015-2021 (Ref. 1.19);
 - Anglian River Basin Management Plan (Ref. 1.20);
 - East Suffolk Coastal Flood Management Plan (Ref. 1.21);
 - Alde Ore Estuary Partnership - Estuary Plan (Ref. 1.22);
 - Minsmere Flood Risk Management Study (Ref. 1.23); and
 - Suffolk Shoreline Management Plan (Ref. 1.24).

1.4.41 There are a number of development types, which, due to their nature and scale, have not been considered to have the potential to result in cumulative impacts and were therefore screened out of the assessment in agreement with ESC. Examples of these development types are identified in **Table 1.3**.

1.4.42 In addition to those development types listed in **Table 1.3**, any other development of a nature or scale without the potential to result in cumulative impacts has also been excluded. This has been based on professional judgement, undertaking a review of the distances from each element of the proposed development and the type of development and therefore the impacts likely to arise.

Table 1.3: Projects, plans and programmes excluded from the ‘long list’

Projects to be screened-out
Construction of agricultural buildings (e.g. storage of livestock, machinery or feed)
House extensions or cosmetic changes to buildings
Work to trees
Micro-generation wind turbines
Roof mounted solar PV panels (or ground mounted less than 50kW output)
Renewal of planning permission for retention of existing operational use
Variations to planning permissions, or reserved matters applications
Small scale residential uses (less than 2 dwellings), or changes of buildings’ use (unless it could itself in a cumulative effect, such as a conversion of several barns into a holiday village).

1.4.43 The corresponding ‘long list’ of plans, projects and programmes is included as **Appendix 1A** of this volume and includes a total of 705 developments and 143 allocations. Each development has been assigned a status based on feedback from ESC, which indicates the level of certainty and provides an indication of the level of detail that was available during the preparation of the cumulative effects assessment presented in **Chapter 4** of this volume.

1.4.44 The long-list has been monitored and updated throughout the pre-application stage up to submission of the Development Consent Order (DCO) application, and any updates and changes have been considered by the assessment process. A final review of publicly available information was undertaken in December 2019 to identify any new project, plans and programme submitted since April 2019.

1.4.45 The long list of identified developments was discussed and agreed with ESC and SCC in April and September 2019.

ii. **Stage 2: Establishing a ‘short list’ of projects, plans and programmes**

1.4.46 Taking account of the stakeholder comments provided (as summarised in **Table 1.1**), and using GIS mapping to consider the spatial relationship with the proposed development, each of the developments and allocations have been considered in terms of whether they would be likely to generate impacts

which could combine to result in cumulative effects in combination with the proposed development. Criteria used for this process are specific to each discipline, taking account of scale, nature and timescales in each case and are discussed within **Chapter 4** of this volume. Where a project, plan or programme is considered to have the potential to result in cumulative impacts with the proposed development they have been included within the short list of other plans, projects and programmes, see **Appendix 1B** of this volume for further detail. For example, where a plan, project or programme is identified to be located within the ZOI for the noise and vibration assessment and has the potential to impact the same receptors as the Sizewell C Project it has been short listed. The short list contains the plans, projects and programmes which were taken forward through to the assessment of cumulative effects.

1.4.47 For those plans, projects and programmes included on the short list, further detailed information gathering was undertaken, including desk study and consultation with ESC, to assist in the identification of potential impacts and cumulative effects. The short list of plans, projects and programmes is included at **Appendix 1B** of this volume and their locations in relation to the proposed development are shown on **Figure 1.2** of this volume.

1.4.48 Projects from the short list which are likely to be operational at the time of the cumulative effects assessment were considered within the baseline where applicable. Projects which were due to be completed by the start of construction of the proposed development have been considered as part of the future baseline. Where the construction timescales of the applications were unknown, the projects have been considered cumulatively and as a potential receptor under the future baseline scenario.

iii. Stage 3: Information gathering

1.4.49 A copy of the short list was circulated to ESC and SCC for their further comments in September 2019 and subsequently finalised in December 2019 for the purpose of commencing the assessments. As part of this process ESC supplied up-to-date information regarding the status of the projects, plans and programmes. Discussion with relevant parties undertaken as part of the **Shadow HRA Report** (Doc Ref. 5.10) and **Transport Assessment** (Doc Ref. 8.5) also provided additional information on relevant projects, plans and programmes. The short listed schemes were then divided into the following categories;

- baseline;
- future baseline;

- future baseline and cumulative schemes; and
- cumulative schemes.

1.4.50 Baseline and future baseline schemes are therefore not considered further as part of the cumulative assessment and have already been assessed where relevant within **Volumes 2 to 9** of the **ES** (Doc Ref. 6.3 to 6.10).

1.4.51 The certainty of each of the plans, projects and programmes with the potential for cumulative effects was also used to categorise the schemes into a relevant tier as per the Planning Inspectorate Advice Note 17. A summary of the three tiers is presented in **Table 1.4** which is adapted from table 2 of the Planning Inspectorate’s Advice Note 17 (Ref. 1.9). For the purposes of the assessment in **Chapter 4** of this volume, Tier 2 has been extended to include projects under other regimes where an EIA screening or scoping opinion request has been submitted.

Table 1.4: Assigning certainty to other projects, plans and programmes

Tier	Description
Tier 1 (most certain)	under construction.
	permitted application(s), whether under the PA2008 or other regimes, but not yet implemented.
	submitted application(s) whether under the PA2008 or other regimes but not yet determined.
Tier 2	projects on the Planning Inspectorate’s Programme of Projects where a scoping report has been submitted.
Tier 3 (least certain)	projects on the Planning Inspectorate’s Programme of Projects where a scoping report has not been submitted.
	identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals.
	identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.

1.4.52 Consideration was given to these tiers during the short listing exercise. As identified in the Planning Inspectorate’s Advice Note 17 (Ref. 1.9) where possible an assessment should be provided for all Tier 1 and Tier 2 schemes. The advice note states in paragraph 3.4.3 that “*other existing development and/or approved development’ falling into Tier 3, the applicant should aim to undertake an assessment where possible, although this may be qualitative and at a very high level*”,

1.4.53 Matrix 1 of the Planning Inspectorate’s Advice Note 17 (Ref. 1.9) was used throughout the staged process as a tool for collecting data and progressing through the assessment methodology and is presented in **Appendix 1A** of this volume. Matrix 2 of the Planning Inspectorate’s Advice Note 17 (Ref. 1.9) has not been used in this instance as the assessment of cumulative effects is presented on a topic by topic basis within **Chapter 4** of this volume, rather than presenting the assessment by each identified cumulative scheme. This process was followed due to the scale and the nature of the proposed development and has allowed for easier navigation of environmental effects and clearer presentation.

iv. **Stage 4: Assessment**

1.4.54 The project-wide effects described in **Chapter 3** of this volume are considered the ‘worst case’ from the construction, operation and removal and reinstatement of the proposed development (if applicable) and have therefore been the impacts used to assess the impact of the proposed development in combination with any non-Sizewell C developments.

1.4.55 The short listed cumulative schemes are assessed in combination with the proposed development, where relevant for each of the technical topic assessments. Topic specific methodology is presented within each of the technical assessments presented within **Chapter 4** of this volume. Only the schemes within the specific ZOI for the topics are assessed, the results of which are presented within **Chapter 4** of this volume on a topic by topic basis.

e) **Assumptions and limitations**

1.4.56 The following assumptions have been made in preparing the cumulative effects assessment:

- Small developments (less than 10 houses) with planning permission are assumed to be likely to be built before construction of the proposed development begins and therefore have been considered within the future baseline and not as a potential cumulative scheme, unless available information indicates otherwise.
- It has been assumed that any development coming forward following the submission of the Sizewell C Project DCO application, which has been given consent and has a potential to interact with the proposed development will have assessed the potential interaction as a cumulative scheme within their environmental impact assessment.
- Any short listed scheme where there is uncertainty around the timescales of construction and operation which has the potential for cumulative effects or to contribute to the future baseline has been

NOT PROTECTIVELY MARKED

considered as both future baseline and a cumulative scheme for a worst case assessment.

- Sizewell A decommissioning has not been considered as a cumulative scheme as the works are ongoing, it has been assessed as part of the baseline.
- Sizewell B decommissioning has been included as a cumulative scheme, however, EDF's lifetime strategy is to seek life extensions for all its nuclear stations, where it is safe and commercially viable to do so. Therefore, there is also uncertainty in terms of the 2035 decommissioning start date.
- Where relevant, an updated assessment for the Sizewell B relocated facilities development together with other works required at the main development site has been provided within **Volume 2** of the **ES** (Doc Ref. 6.3). Sizewell B relocated facilities are not considered further within the cumulative effects assessment presented in this volume.
- The proposed development and the proposed Bradwell B nuclear power station could result in a cumulative effect on European sites of importance for nature conservation. However, an assessment of these potential effects has not been undertaken within this **ES** (Doc Ref. Book 6) as detailed information for the proposed Bradwell B is not available. As such any in combination assessment would be entirely based on assumptions.
- The cumulative effects assessment does not consider the potential for cumulative effects during the decommissioning phase of the proposed development. As outlined in **Volume 2, Chapter 5** of the **ES** (Doc Ref. 6.3), in order to decommission a nuclear reactor, it is necessary to obtain consent from the Office of Nuclear Regulation and undertake an EIA under the Nuclear Reactors Environmental Impact Assessment for Decommissioning) Regulations 1999 (Ref. 1.25) and Marine Works (Environmental Impact Assessment) Regulations 2007 or equivalent EIA Regulations at the time of submission (Ref. 1.26). This would require the submission of an ES, and a period of public consultation prior to gaining approval for the commencement of decommissioning. The EIA would determine and describe the baseline conditions for the decommissioning works as they exist at the relevant time. This would be informed by any specialist surveys that may be necessary. The EIA would identify changes to the baseline conditions that would occur as a result of the decommissioning works and determine the scope, duration, magnitude and significance of the resultant effects (including cumulative effects). The EIA would consider the relevant legislation in place at that time.

References

- 1.1 Her Majesty's Stationery Office (HMSO) (2017), The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended 2018).
- 1.2 HMSO (2009), Infrastructure Planning (Environmental Impact Assessment) Regulations 2009.
- 1.3 EC Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU.
- 1.4 EC Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment.
- 1.5 Department of Energy and Climate Change (DECC) (2011) Overarching National Policy Statement for Energy (EN-1).
- 1.6 DECC (2011) National Policy Statement for Nuclear Power Generation (EN-6).
- 1.7 European Commission (EC) (1999); Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions.
- 1.8 DECC (2010) Appraisal of Sustainability of the revised draft Nuclear National Policy Statement.
- 1.9 The Planning Inspectorate (2019), Advice note seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects.
- 1.10 The Planning Inspectorate (2019), Institute of Environmental Management and Assessment (IEMA) The State of Environmental Impact Assessment Practice in the UK (2011).
- 1.11 HMSO (2017), The Conservation of Habitats and Species Regulations 2017.
- 1.12 The Planning Inspectorate National Infrastructure Planning Programme of Projects online portal. <https://infrastructure.planninginspectorate.gov.uk/>
- 1.13 Suffolk Coastal Council (2013), Suffolk Coastal District Local Plan: Core Strategy and Development Management Policies Development Plan Document.
- 1.14 East Suffolk Council (2019), Waveney Local Plan.
- 1.15 East Suffolk Council (2019), Suffolk Coastal District Council Local Plan: Final Draft Plan.
- 1.16 East Suffolk Council (2017), Felixstowe Peninsula Area Action Plan.

- 1.17 Suffolk County Council (2009), SCC Minerals Specific Site Allocation Development Plan.
- 1.18 Suffolk County Council (2011), Waste Core Strategy.
- 1.19 Environment Agency (2016), Anglian River Basin District Flood Risk Management Plan 2015 – 2021.
- 1.20 Environment Agency (2015), Anglian River Basin Management Plan
- 1.21 East Suffolk Council (2009), East Suffolk Coastal Flood Management Plan
- 1.22 Alde and Ore Estuary Partnership (2016), Estuary Plan.
- 1.23 Environment Agency (2009), Minsmere Flood Risk Management Study.
- 1.24 Suffolk Coastal District Council (2010), Suffolk Shoreline Management Plan.
- 1.25 HMSO (1999), Nuclear Reactors Environmental Impact Assessment for Decommissioning) Regulations 1999.
- 1.26 HMSO (2007), Marine Works (Environmental Impact Assessment) Regulations 2007.