



The Sizewell C Project

5.1 Consultation Report Appendices D.1 - D.7 Part D: Stage Two Pre-Application Consultation

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Planning Act 2008
Infrastructure Planning (Applications: Prescribed
Forms and Procedure) Regulations 2009



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Appendix D.1 Letters consulting Suffolk Coastal District Council (SCDC) and Suffolk County Council (SCC) on Draft Updated Statement of Community Consultation (SoCC) (26 November 2014)



Deborah Cadman

26th November 2014

Dear Deborah

Sizewell C: Consultation on the Updated Statement of Community Consultation

As you are aware, EDF Energy is required by section 47 of the Planning Act 2008 to prepare a statement, known as a Statement of Community Consultation (SOCC), detailing how it intends to consult the local community about our proposals for a new nuclear power station at Sizewell and any associated development.

In November 2012 EDF Energy published a SOCC which detailed its approach to consultation (referred to as the 'original SOCC'). Since this time EDF Energy has decided to update its consultation strategy. Therefore, a revised SOCC, referred to as the 'updated SOCC', has been prepared to reflect the updated approach.

EDF Energy has worked with officers at Suffolk Coastal District Council and Suffolk County Council about what was to be in this document. These discussions have been extremely helpful in enabling EDF Energy to prepare the draft updated SOCC which is enclosed in this letter.

EDF Energy is now at the stage that it would like you to treat this letter as notification of the start of the formal 28 day consultation on the draft updated SOCC. We would be grateful to receive your comments on the enclosed document by no later than 31 December 2014. Your comments will then be carefully considered before finalising the SOCC. Following receipt of your comments, it is our intention to publish a notice in the East Anglian Daily Times stating where and when the updated SOCC can be inspected. From the date of this notification, further consultation will be carried out in accordance with the updated SOCC.

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*NNB Generation Company Limited
(Registered in England and Wales
Registered No. 11627084,
Registered office: 40 Grosvenor Place,
Victoria, London SW1W 7EN)*



We will make the SOCC available for inspection by the local community and people living in the vicinity of the land at Suffolk Coastal District Council and Leiston Town Council offices, selected libraries in Suffolk Coastal, as well as online at www.edfenergyconsultation.info. This is consistent with the approach taken in relation to the original SOCC.

We look forward to receiving your comments.

Yours sincerely

Stephen Walls
Deputy Project Development Director
EDF Energy NNB

c.c. Bryn Griffiths
John Pitchford
Katherine Potts
EDF: Paul Newman/Tim Norwood/Carly Vince/Tom McGarry



Stephen Baker



26th November 2014

Dear Stephen

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We look forward to receiving your comments.

Yours sincerely

Stephen Walls
Deputy Project Development Director
EDF Energy NNB

c.c. Philip Ridley
Paul Wood
Katherine Potts
Lisa Chandler
Sharon Bleese
EDF: Paul Newman/Tim Norwood/Carly Vince/Tom McGarry

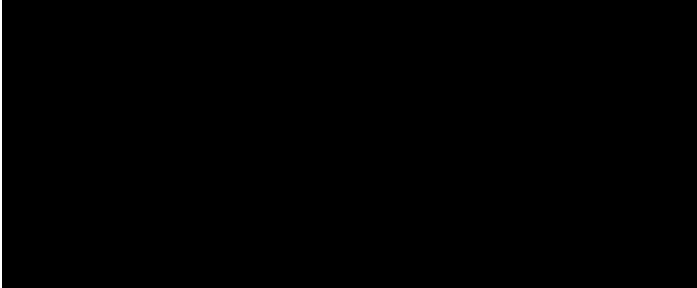


Appendix D.2 SCDC and SCC feedback on the Updated SoCC (19 December 2014)



Date: 19.12.2014
Enquiries to: Michael Wilks / Lisa
Chandler Tel:
Email:

Mr Stephen Walls



Dear Stephen,

Sizewell C – Updated Statement of Community Consultation

Following discussion of the updated Statement of Community Consultation at our JLAG meeting on 12th December 2014, we consider that the updated SoCC provides, in principle, a reasonable basis for future community consultation. However, we are disappointed with a number of areas:

- The length of time proposed for Stage 2 – this should be a minimum of 10 weeks, 12 if over a (defined) major public holiday;
- The lack of inclusion of a minimum timeframe for Stage 3 consultation – this should be a minimum of 12 weeks, 14 if over a (defined) major public holiday;
- The requirement must be for ten *working days*' notice in advance of the start of each stage of consultation (page 5 last para.);
- It is crucial that additional support is provided for Town and Parish Councils during the Stage 2 and 3 consultation stages, there is very grave concern that this is not included; and
- Finally, we would suggest some specific changes to individual wording to improve precision and measurability of the document (see page 2).

Of particular concern and therefore importance is the lack of support for Town and Parish Councils within the document. It is recommended that this be incorporated prior to publication along with the other changes suggested above in order for the joint local authorities to be able to fully support the document.

Yours sincerely

Cllr Geoff Holdcroft
Cabinet member for Planning

Suffolk Coastal District Council

Cllr Graham Newman
Cabinet member for Roads,
Transport and Planning
Suffolk County Council

Suggested word changes:-

Page 5, last para.

1st line delete “endeavour to”

2nd line, insert “working” to read ten working days

4th line replace “could” with “will”

Page 6, second para.

Define “major holiday”

Page 7, 3rd para. and page 10, 4th para and page 12, 1st para

P7 refers to Stage 2 and 3, page 10 and 12 only refers to Stage 2. The latter two need to refer to Stage 2 and Stage 3.

Page 10, 4th para

4th line, “are likely to”, replace with “will”

Page 12, 2nd para

2nd line, “may” replace with “will”

Page 13, 1st para

3rd line “may be organised time permitting” is not very sensitive phrasing. Suggest deleting and adding “will be organised” at the end of the sentence.

Page 14, workshops

Replace text with “statutory consultees, community representatives and other stakeholders may find workshops useful. EDF Energy will accommodate reasonable requests to organise such workshops on relevant and appropriate aspects of the development.”

Page 14, focus groups

1st line, replace “could” with “will accommodate reasonable requests”.



Appendix D.3 Letters from SZC Co. to SCDC and SCC enclosing SZC Co. response to their December 2014 comments and amended draft Updated SoCC (13 January 2016)



Deborah Cadman

[REDACTED]

13 January 2016

Dear Deborah

Sizewell C: Consultation on the Updated Statement of Community Consultation

As you are aware, EDF Energy is required by section 47 of the Planning Act 2008 to prepare a statement, known as a Statement of Community Consultation (SOCC), detailing how it intends to consult the local community about its proposals for a new nuclear power station at Sizewell and any associated development.

In November 2012 EDF Energy published a SOCC which detailed its approach to consultation (referred to as the 'original SOCC'). You will be aware from previous correspondence on this matter EDF Energy has decided to update its consultation strategy. In November 2014 a revised SOCC was prepared and sent to you reflecting this update to the strategy. We received joint comments from Suffolk Coastal District Council (SCDC) and Suffolk County Council (SCC), in a letter dated 19 December 2014, in response to the updated SOCC.

Since then we have worked constructively with officers at both SCDC and SCC in relation to the matters raised in your letter dated 19 December 2014. Many of the comments have been taken on board and to respond to those discussions we have amended the updated SOCC, as enclosed in this letter at **Appendix 1** entitled 'Updated SOCC, dated January 2016'. A summary of how each comment has been responded to is summarised in **Appendix 2** of this letter.

EDF Energy is now at the stage that it would like you to treat this letter as notification of the start of the formal 28 day consultation on the draft updated SOCC, dated January 2016. We would be grateful to receive your comments on the enclosed Updated SOCC, dated January 2016, at **Appendix 1** no later than 10 February 2016. Your comments will then be carefully considered before we finalise the SOCC. Once we have finalised the Updated SOCC, dated January 2016 it is our intention to publish a notice in the East Anglian Daily Times stating where and when the updated SOCC can be inspected. From the date of this notification, further consultation will be carried out in accordance with the updated SOCC.

We will make the Updated SOCC available for inspection by the local community and people living in the vicinity of the land at SCDC and Leiston Town Council's offices, selected libraries in Suffolk Coastal, as well as online at www.edfenergyconsultation.info. This is consistent with the approach taken in relation to the original SOCC.

We look forward to receiving your comments. However, if your colleagues wish to discuss this please do not hesitate to contact my colleague Carly Vince.

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Company No. 9284825



Yours sincerely

Stephen Walls

Deputy Project Development Director

c.c. SCDC (Philip Ridley and Lisa Chandler)
SCC (Bryn Griffiths, Michael Wilks and Katherine Potts)
EDF Energy (Tim Norwood, Carly Vince, Tom McGarry)

Encl. **Appendix 1** Updated SOCC, dated January 2016
Appendix 2 EDF Energy's response to the authorities in relation to the Updated SOCC, dated November 2014



Appendix 2 EDF Energy's response to the authorities in relation to the Updated SOCC, dated November 2014

Strategic Matters

- Duration of Stage 2 and 3 consultations: A comment made by the authorities was that 'The length of time proposed for Stage 2 – this should be a minimum of 10 weeks, 12 if over a (defined) major public holiday'. We have now stated in the Updated SOCC, dated January 2016 that further stages of consultation will run for at least eight weeks, but could be extended should the period of consultation fall over a major public holiday (i.e. Easter or Christmas).

Furthermore, we will ensure that the consultations are undertaken in a transparent manner and that the information is presented in a form that enables stakeholders to easily understand the proposals and any related impacts, thereby ensuring that the time periods allowed for comment are acceptable.

- Notification of commencement of consultation: A request was made for ten working days' notice of the start of each stage of consultation. We can confirm that this has been reflected in the Updated SOCC, dated January 2016. Notwithstanding, it is worth reflecting on here the positive working relationships between the EDF Energy team and your officers/other groups (e.g. JLAG, CPT and SSPLG) through which we seek to keep you regularly apprised of our key project milestones.
- Support to Town and Parish Councils: A request for EDF Energy to continue to support the town and parish councils was made. We can confirm that this commitment is now reflected in the Updated SOCC, dated January 2016. EDF Energy will work with your officers to support Planning Aid England in their role of supporting and empowering these councils, as described to members of JLAG in December 2015.

Specific drafting changes

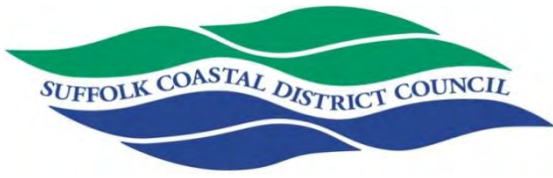
- Page 5, last paragraph: We can confirm that the three specific drafting changes have been made, as reflected in this Updated SOCC, dated January 2016.
- Page 6, second paragraph: We have added a definition of '*major holiday*' to include Christmas and Easter in this Updated SOCC, dated January 2016.
- Page 7, third paragraph; page 10, fourth paragraph; page 12, first paragraph: We can confirm that the two specific drafting changes have been made, as reflected in this Updated SOCC, dated January 2016.
- Page 10, fourth paragraph: We can confirm that the specific drafting change has been made, as reflected in this Updated SOCC, dated January 2016.
- Page 12, second paragraph: We discussed with officers the request for the term '*may*' to be amended to '*will*' in the context of holding exhibitions within the outer area. It was agreed with your officers that this amendment would not be made, to enable us to tailor our consultation to the areas that would be most affected, as identified through the evolution of our project and assessments.

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- Page 13, first paragraph: We have deleted the words *'time permitting'*. However, we retain the wording *'if specifically requested and where no appropriate alternative is available'*, as this will ensure reasonable requests can be accommodated. This approach has been agreed with your officers.
- Page 14, 'workshops': We have amended the wording as on the approach to workshops to read *'Statutory consultees may find workshops useful. EDF Energy will accommodate reasonable requests to organise such workshops on relevant and appropriate aspects of the development'*. We have not amended the wording to fully accord with your request, as we do not consider workshops to be necessary or appropriate for other community representatives or other stakeholders, rather these stakeholders' needs would be more appropriately met via other routes (e.g. focus groups and meetings), as has been allowed for in the document already. This approach has been agreed with your officers.
- Page 14, 'focus groups': We have amended the wording on the use of focus groups to read *'EDF Energy will commission focus groups or hold other events where considered necessary or appropriate by EDF Energy, to engage specific interests or hard to reach groups'*. Again, we have not amended the wording to fully accord with your request, as we do not consider it appropriate or necessary to amend the wording which would require us to convene groups in response to *'reasonable requests'*, as we consider that we are best placed to decide which events would help us to progress our proposals. Again, this approach has been agreed with your officers.

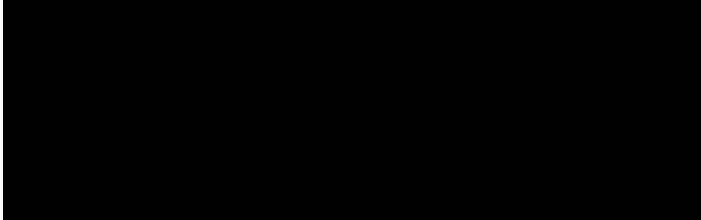


Appendix D.4 Letter from SCDC and SCC in response to amended draft Updated SoCC
(10 February 2016)



Date: 10 Feb 2016
Enquiries to: Bryn Griffiths/Philip Ridley
Tel:
Email:

Mr Stephen Walls



Dear Stephen,

Sizewell C: Consultation on the Updated Statement of Community Consultation

Thank you for inviting our input into the updated Statement of Community Consultation (SoCC) which was received by us on the 13 January 2016. In accordance with the statutory requirement to respond within 28 days to that request, this letter constitutes the formal response of both Suffolk Coastal District Council and Suffolk County Council.

The SoCC is very similar to that which we have seen in draft and commented on previously. The major change since the currently agreed SoCC (published November 2012) is the addition of a third stage of consultation into the process.

The reference to co-ordinating with other consultation activities to avoid public confusion and consultation fatigue is noted and appreciated and we would be happy to help co-ordinate this should any potential conflicts be identified.

The SoCC states that EDF Energy is committed to carrying out in-depth consultation and considering all the feedback received – therefore taking the necessary time to do this – this indicates that there should be a decent interval of time between stages of consultation and this is welcomed.

On page 12, reference is made to Planning Aid England involvement in support for town and parish councils – we are happy to see this incorporated given our support for such a proposal and previous requests for a form of support to be included.

Our single and substantive area of dissatisfaction is therefore the time proposed for public consultation at Stages 2 and 3. EDF is proposing an 8 week period for the consultation, only to be extended if this falls over Easter or Christmas. The SoCC does not specify by how long the consultation would be extended in this scenario but it is noted that the Stage 1 took place over Christmas and ran for 11 weeks.

As we have indicated previously, we strongly believe that Stage 2 should be a minimum of 10 weeks, 12 if over a (defined) major public holiday and that Stage 3 should be a minimum of 12 weeks, 14 if over a (defined) major public holiday.

As the SoCC fails to incorporate guarantees that an adequate period of time will be available for consultees to respond, regrettably we cannot support the SoCC as drafted and strongly urge EDF to reconsider its position on this matter so that an appropriate period for engagement during the public consultation stages of the pre-application process is provided.

Yours sincerely

Deborah Cadman OBE

Chief Executive Suffolk County Council

Stephen Baker

Chief Executive of Suffolk Coastal and
Waveney District Council



Appendix D.5 Example Newspaper Notice of the Published Updated SoCC (November 2016) Appendix D.6 Published Updated SoCC (Stage 2) (November 2016)

Sizewell C

Have your say



Latest proposals ready for public consultation

EDF Energy is pleased to announce that our next stage of public consultation on the proposals for a new nuclear power station at Sizewell will begin on 23 November 2016. Responses to our updated proposals need to be received by 3 February 2017.

We completed Stage 1 Consultation in February 2013. Today we have made available an 'Updated Statement of Community Consultation' (SoCC), setting out how we will consult with residents and stakeholders in the area. At Stage 2 Consultation we will present our latest proposals for the power station and associated developments. **The 'Updated SoCC' is available to view at www.sizewellc.co.uk**

You can also find copies of the 'Updated SoCC' at Leiston Town Council, Suffolk County Council, Suffolk Coastal District Council and Waveney District Council offices or you can pick up the document at the Sizewell C Information Office, 48-50 High Street, Leiston IP16 4EW.

We will be holding a number of public exhibitions throughout the area and invite you to attend, learn more about our proposals and give us your views.

Exhibitions will be held at:

TOWN/PARISH	VENUE/LOCATION	DATE	TIME
Sizewell	Visitor Centre, Sizewell B, Leiston IP16 4UR	Thursday 24 Nov	3 - 7pm
Theberton & Eastbridge	Jubilee Hall, School House, Church Road, Theberton IP16 4SB	Friday 25 Nov	2 - 8pm
Leiston	Community Centre, King George's Avenue, Leiston IP16 4JX	Saturday 26 Nov	10 - 4pm
Melton	Ufford Park Hotel, Yarmouth Road, Melton IP12 1QW	Monday 28 Nov	11 - 3pm
Snape	The Concert Hall Café, Snape Maltings, Snape IP17 1SR	Tuesday 29 Nov	11 - 3pm
Westleton	Village Hall, The Street, Westleton IP17 3AH	Tuesday 29 Nov	4 - 8pm
Aldeburgh	Community Centre, Victoria Road, Kings Field, Aldeburgh IP15 5HY	Wednesday 30 Nov	12 - 6pm
Wickham Market	Village Hall, High Street, Wickham Market IP13 0HE	Thursday 1 Dec	11 - 3pm
Saxmundham	Market Hall, High Street, Saxmundham IP17 1AF	Friday 2 Dec	11 - 3pm
Stratford St Andrew	Riverside Centre, Great Glemham Road, Stratford St Andrew IP17 1LN	Saturday 3 Dec	10 - 4pm
Rendlesham	Community Centre, Walnut Tree Avenue, Rendlesham IP12 2GG	Monday 5 Dec	11 - 3pm
Lowestoft	The Hotel Victoria, Kirkley Cliff Road, Lowestoft NR33 0BZ	Monday 5 Dec	4 - 8pm
Blythburgh	Village Hall, London Road, Blythburgh IP19 9LQ	Wednesday 7 Dec	11 - 3pm
Southwold	St Edmund's Hall, Cumberland Road, Southwold IP18 6JP	Wednesday 7 Dec	4 - 8pm
Darsham	High Lodge, Haw Wood, Hinton, Nr Darsham IP17 3QT	Thursday 8 Dec	2 - 8pm
Ipswich	Town Hall, Cornhill, Ipswich IP1 1DH	Friday 9 Dec	11 - 3pm
Marlesford	Village Hall, Church Road, Marlesford IP13 0AT	Monday 12 Dec	11 - 3pm
Woodbridge	Community Hall, Station Road, Woodbridge IP12 4AU	Tuesday 13 Dec	11 - 3pm
Middleton	Village Hall, Mill Street, Middleton IP17 3NG	Wednesday 14 Dec	11 - 3pm
Halesworth	The Rifle Hall, London Road, Halesworth IP19 8LW	Thursday 15 Dec	11 - 3pm

EDF Energy will also be hosting further exhibitions in Yoxford, Campsea Ashe and Hacheston. These will be advertised in the local areas once timings and venues have been confirmed.

Your views are important to us and help shape the proposals for Sizewell C.

Contact Us

📞 FREEPHONE 0800 197 6102*

🌐 www.sizewellc.co.uk

📍 Sizewell C Information Office, 48-50 High Street, Leiston IP16 4EW

🐦 @edfesizewellc

✉ info@sizewellc.co.uk

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better energy
together*



Appendix D.7 Consultation Document (Stage 2) (November 2016)



Updated Statement of Community Consultation

November 2016

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Updated Statement of Community Consultation

Prepared pursuant to section 47(1) of the Planning Act 2008 and regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009.

About this Statement of Community Consultation (SOCC)

This SOCC sets out how EDF Energy proposes to consult local communities about its plans for a new nuclear power station at Sizewell in Suffolk (Sizewell C).

In 2012, prior to the first stage of public consultation on initial proposals and options for a new power station, EDF Energy published a SOCC which detailed its approach to consultation - referred to as the original 'SOCC'.

Following the feedback received at Stage 1 Consultation EDF Energy has decided to include one or more additional stages of formal consultation.

This document – referred to as the 'Updated SOCC' – has been prepared to reflect the updated approach. Therefore, all consultation undertaken between September 2012 and November 2016 has been undertaken in accordance with the original SOCC; and all consultation undertaken from October 2016 up to submission of an application for development consent will be undertaken in accordance with this Updated SOCC.

EDF Energy took into account the views of Suffolk Coastal District Council (SCDC) and Suffolk County Council (SCC) before finalising the Updated SOCC and making it available for inspection by the public.

Government Policy

The Government has decided that new nuclear power stations should play a significant role in the future generation of electricity for the UK. The National Policy Statement for Nuclear Power Generation (EN-6), which was designated by the Government in July 2011, describes the need for new nuclear power stations and identifies Sizewell as one of the sites potentially suitable for the development of a new nuclear power station.





Sizewell C Proposals

EDF Energy plans to build a new nuclear power station on land to the north of the existing Sizewell A and B power stations. The proposed permanent development on the main development site would include: two UK EPR™ units (a type of Pressurised Water Reactor) and associated buildings; turbine halls and electrical buildings; cooling water pumphouses and associated buildings; an operational service centre; fuel and waste storage facilities; a National Grid 400kV substation and associated works including the re-siting of an existing transmission tower at Sizewell B; a simulator/training centre building; cooling water infrastructure; a beach landing facility; flood defence and coastal protection measures; highways works including a new access road to join the B1122; car parking; and a landscape restoration scheme.

Building a new power station at Sizewell would potentially affect the lives of those living in communities close to the main development site and associated development sites through, for example: increased traffic; visual impact; loss of public access to parts of the site(s); and other potential environmental impacts.

Other temporary development would also be necessary to support the construction of the power station, including:

- Construction areas to the north-west of the power station site, including contractors' laydown, fabrication and storage facilities;
- earthwork management areas;
- temporary buildings and structures, including offices, plant, construction roads and parking areas;
- marine transport works;
- an accommodation campus;
- use of land north of King George's Avenue for construction laydown and a caravan park;
- either an extension of the existing Saxmundham to Leiston railway line into the construction site or a rail terminal and freight laydown area north of King George's Avenue, Leiston;
- two park and ride facilities, one to the north-west of the main development site at Darsham and one to the south-west of the main development site at Wickham Market; and
- permanent development off-site would include highway improvements along the A12 and the B1122.

The potential environmental impacts that may occur as a result of the construction and operation of the power station and associated development could include potential impacts on matters such as landscape and visual amenity; archaeology and cultural heritage; rights of way; noise and vibration; coastal processes; water and air quality; drainage; flood risk; ecology and geology. The new power station would however bring significant benefits and provide low carbon electricity for approximately six million homes, which in turn would help to achieve the Government's climate change targets. As a multi-billion pound investment, Sizewell C would also create significant employment and economic opportunities for local people and businesses during its construction and operation.

The Planning Process

EDF Energy will apply to the Secretary of State under the Planning Act 2008 for development consent to construct and operate the power station and associated development. The Planning Inspectorate (PINS), acting as the examining authority on behalf of the Secretary of State, will examine the application and seek the public's views on it. PINS will then submit its recommendation on the application to the Secretary of State, who will make the final decision. The Secretary of State will make their decision in accordance with national policy, taking account of the local impact of the proposals.

Before PINS accepts an application on behalf of the Secretary of State, it must be satisfied that adequate pre-application consultation has been conducted.

Local authorities also have an important role in the process. In addition to considering this Updated SOCC, SCDC and SCC may comment upon the quality of EDF Energy's consultation and in their capacity as statutory consultees, make their own representations on the application once submitted. They will also produce a local impact report and work with EDF Energy to produce a document recording matters that are agreed and not agreed between the parties.

The Consultation Process

EDF Energy's pre-application consultation on the proposals for a new nuclear power station at Sizewell and associated development will take place in three main stages, which may be supplemented by further stages of limited, focused consultation if considered necessary.

The first stage of consultation considered the 'Initial Proposals and Options' for Sizewell C and was carried out between 21 November 2012 and 6 February 2013. The responses received in relation to the Stage 1 Consultation have informed the evolution of the proposals and the scope of our technical assessments.

The focus of the Stage 2 Consultation is to present an update on the evolution of EDF Energy's proposals, as well as identifying where there are options for some development components. The information presented will include preliminary environmental information, as well as details of the rationale for the proposed approach. The purpose of the Stage 2 Consultation is to invite feedback to inform the ongoing evolution of the proposals and strategies.

Following EDF Energy's consideration of the responses received to the Stage 2 Consultation and its ongoing technical assessments, one or more subsequent stages of consultation will be undertaken. The focus of any such subsequent stages of consultation will be to provide further information on the development proposals as well as environmental information. Any feedback received will be used to inform the final proposals and supporting assessments that will form part of EDF Energy's application for development consent, which will be submitted to the Secretary of State for Business, Energy and Industrial Strategy.

EDF Energy will publicise each stage of consultation and this document explains how we will do this.

Preliminary Environmental Information

The Sizewell C proposals constitute a development requiring assessment of likely significant effects on the environment.

EDF Energy will therefore carry out an Environmental Impact Assessment (EIA) and will submit a full Environmental Statement (ES) and non-technical summary as part of its application for development consent. The ES will be informed by the consultation process.

Stage 1 Consultation included preliminary environmental information in relation to the initial options presented.

Stage 2 Consultation will include preliminary environmental information in relation to the proposals and any options consulted upon. This will include an overview of how the proposals have evolved having regard to environmental considerations, as well as identification of potential significant environmental impacts and an overview of how these impacts could be mitigated (e.g. proposals for land restoration, landscaping and other mitigation or compensatory measures, where appropriate).

Preliminary environmental information will also be presented in support of further consultation stages beyond the Stage 2 Consultation, depending on the level of information available at that time.

Related Consultations

EDF Energy will monitor all other major consultation exercises being undertaken in the local area at the same time as EDF Energy is carrying out its pre-application consultation for the Sizewell C Project. EDF Energy will attempt to co-ordinate its pre-application consultation with other relevant consultations to avoid public confusion and consultation fatigue.

Consultation Timetable

EDF Energy will confirm the dates for each stage of consultation and publicise these dates at least ten working days in advance of the start of the relevant consultation period. EDF Energy will do this in a number of ways which will include publicising the consultation in local media and publishing advertisements in local newspapers; writing to the county, district, town and parish councils and other stakeholders; and circulating a Sizewell C newsletter (described below in the 'Consultation Activity' section). Details of the consultation activities involved will be included in this publicity including dates and venues of public exhibitions.

Responses to the consultation should be submitted to EDF Energy by the end of each stage of consultation using the contact information shown in the 'Contact Information' section on the final page of this document. EDF Energy may be requested to make consultation responses available to the Planning Inspectorate.

The Stage 1 Consultation ran for eleven weeks (21 November 2012 to 6 February 2013). Further stages of consultation will run for at least eight weeks, but could be extended should the period of consultation fall over a major public holiday (i.e. Easter or Christmas).

EDF Energy is committed to carrying out in-depth consultation and to consider all the feedback received and it will take the time necessary to do this between each stage of consultation.

After each stage of formal consultation, EDF Energy will summarise the main issues raised during the consultation and present this in its Sizewell C newsletter (described below in the 'Consultation Activity' section). This has already been completed in relation to Stage 1 Consultation.

EDF Energy will continue to engage with consultees in between the stages of consultation up to and beyond the submission of the application for development consent.

EDF Energy will report on the consultation responses received during the pre-application phase in a Consultation Report, which will form part of the application for development consent.

Scope of the Consultation

As part of the formal consultation process, EDF Energy will be seeking views on the proposals as set out in the published consultation documentation. The principles of whether or not there is a need for a new nuclear power station and whether Sizewell C is a potentially suitable site have already been determined by Parliament and are therefore outside the scope of EDF Energy's consultation.

While the views of those living, working or otherwise using the local areas closest to the proposed Sizewell C site and any associated development sites expressed through this consultation will be influential in developing proposals, EDF Energy will also have regard to the views of local authorities, other statutory consultees and members of the public. In addition, EDF Energy will take into account the results of its on-going assessments and will consider what is practical and achievable in terms of delivering a new nuclear power station when developing its proposals for the Sizewell C Project.



Public consultation will be undertaken within the following two geographic areas:

Inner Area Plan

Due to the proximity of those living, working or otherwise using the local areas closest to the main development site, consultation will be most intensive within the Inner Area, with public events near locations where development is proposed.

This covers all communities within an approximate 10 mile radius of Sizewell (shown on the map opposite). It also includes those communities within the vicinity of potential associated development sites beyond the 10 mile radius of Sizewell.



Outer Area Plan

A 20 mile radius (shown on the map opposite) includes Lowestoft to the north, from the east of mid Suffolk to the west, stretching further to the south to incorporate the A14 corridor from the east of Ipswich to Felixstowe.

Public and stakeholder engagement will also be undertaken in the Outer Area to help facilitate feedback from the public.



Consultation Activity

- Consultation Materials:
 - For the Stage 1 Consultation, EDF Energy produced the following documents: Consultation Document; Consultation Summary Document; Environmental Report; Transport Strategy and supporting information.
 - For the Stage 2 Consultation EDF Energy will produce a Consultation Summary Document and Consultation Document.
 - In support of further stages of formal consultation beyond Stage 2 Consultation, EDF Energy intends to produce documents appropriate to the consultation being carried out, such as an Environmental Report detailing environmental information and the initial findings of the impact assessment; and a Consultation Summary Document.
 - Hard copies of these documents will be available to view at the Sizewell C Information Office (address and opening hours on final page), at public exhibitions, and in selected libraries and council offices in Suffolk Coastal, Waveney and Ipswich during the formal consultation process for each stage. Copies of the documents for consultees to take away with them will be available upon request and may be subject to reasonable copying charges. The documents will also be available at all of these locations on DVD and to download from the Project website:
www.sizewellc.co.uk. If requested, we will commission translation of the Consultation Summary Document into any minority languages used locally (such as Polish, Lithuanian and Portuguese).
- Newsletters: EDF Energy will publicise the consultation programme, including information on how people can respond and reports on key project milestones, in the Sizewell C Project newsletter. The newsletter will be distributed to all homes and businesses within each parish that falls within the Inner Area Plan, as well as parishes that include any proposed associated development sites outside of this area.
- Local Media: EDF Energy will publicise the consultation and associated activities in the local media ahead of the formal public consultation stages and will update local broadcast and print media channels on its consultation activity.
- Public Exhibitions: EDF Energy will hold exhibitions and events in support of formal stages of consultation. An early event will be held with the Sizewell Residents' Association for each stage of consultation.
- Presentations: town and parish councils can request meetings and presentations during the public consultation programme, which EDF Energy will seek to accommodate where possible. This is in addition to the support being offered to the town and parish councils from Planning Aid England to empower them in their involvement in the consultation process.
- 'Drop-in' Sessions: some villages or towns which are not locations for exhibitions, or those communities which require more opportunities to engage with the EDF Energy Team, may find 'drop-in' sessions useful. EDF Energy will seek to accommodate any requests where possible. These sessions would operate like surgeries, where local people can have discussions with members of the team.
- Engagement with 'Hard-to-Reach' Groups: EDF Energy has consulted a number of organisations which represent 'hard-to-reach' stakeholders (i.e. demographic groups that do not usually engage in consultation activity, as well as people with disabilities who may have problems accessing the consultation information). Following the feedback received, home visits, bespoke presentations and advertorials in specific publications are among some of the actions which will be considered by EDF Energy in order to provide opportunities for such groups to engage in the consultation process.
- Project Website: all consultation material will be available to download from the Project website www.sizewellc.co.uk. Consultees will be able to submit their feedback in hard copy by post or via an online form. Information about all exhibitions will also be available online.
- Social Media: Sizewell C has a Twitter account and followers will be updated on the latest events and news during the public consultation: [@edfesizewellc](https://twitter.com/edfesizewellc).
- Sizewell C Community Forum: EDF Energy has set up a Sizewell C Community Forum which meets on a roughly biannual basis. It considers issues that might affect the local community as a result of EDF Energy's planning proposals, principally those arising from the development of a new power station on land to the north of Sizewell B and any associated development. Consideration of the principle of building new nuclear power stations is not within the scope of the forum. The membership is made up of representatives from the local community and local stakeholder organisations.

Exhibition Locations

Exhibitions will be held around the main development site and in parishes where additional development is being proposed. In parishes not directly affected by associated development and centres with large populations such as Ipswich, shorter exhibitions or community meetings may be held.

Workplace exhibitions will be held for staff at the Sizewell A and B power stations and for staff at SCDC and SCC. Additional public exhibitions and events may be organised if necessary.

The exhibition material will remain available for the public to view at the Sizewell C Information Office after the formal consultation stages have finished, as well as being available to download from the Project website.



Public Exhibitions

During the Stage 2 Consultation staffed exhibitions (see map above) using presentation boards and literature to explain the proposals will be held in the parishes of:

Leiston-cum-Sizewell	Saxmundham
Theberton & Eastbridge	Melton
Hacheston	Woodbridge
Yoxford	Blythburgh
Stratford St Andrew with Farnham	Aldeburgh
Darsham	Southwold
Middleton	Snape
Westleton	Halesworth
Marlesford	Rendlesham
Wickham Market	Lowestoft
Campsea Ashe	Ipswich

Other Activities

Other activities and informal consultation may be carried out for specific elements of the proposals in between stages of formal consultation. Additional activities that may be carried out, if considered necessary and appropriate, include:

- Workshops: EDF Energy will accommodate reasonable requests to organise such workshops on relevant and appropriate aspects of the development.
- Focus Groups: EDF Energy will commission focus groups or hold other events where considered necessary or appropriate by EDF Energy, to engage specific interests or 'hard-to-reach' groups.

Next Steps

Further details on the timing of each formal stage of public consultation will follow, as explained in the Consultation Timetable section.

Following the end of each stage of public consultation, EDF Energy will consider all responses before submitting its application to the Secretary of State for development consent to construct and operate the power station and associated development.

A detailed Consultation Report, explaining what consultation has taken place and how responses to the consultation have influenced the final proposals, will accompany the application for development consent.

Contact Information

For further information, please contact EDF Energy in one of the following ways:

- **View the Project website www.sizewellc.co.uk**
- **Call us on FREEPHONE 0800 197 6102***
- **Email us at info@sizewellc.co.uk**
- **Write to FREEPOST SZC CONSULTATION
(no stamp or further address required)**
- **Follow us on Twitter at [@edfesizewellc](https://twitter.com/edfesizewellc)**
- **Visit the Sizewell C Information Office at 48-50 High Street,
Leiston, IP16 4EW**

The Sizewell C Information Office is open to the public Monday to Friday from 09:30 to 17:00 (excluding public holidays). During the formal stages of consultation the office will also be open to the public on Saturdays from 09:00 to 12:00.

*Calls to 0800 numbers are free from UK landlines. Call costs from mobile and international numbers may vary.





Appendix D.7 Consultation Document (Stage 2) (November 2016)



Consultation Document

Sizewell C | Proposed Nuclear Development
Stage 2 Pre-Application Consultation
Autumn/Winter 2016



Foreword

I am pleased to present EDF Energy's emerging proposals for a new nuclear power station, Sizewell C (SZC). Our latest plans have been informed by feedback from the Stage 1 Consultation, on-going engagement, further technical work and environmental studies.

EDF Energy and China General Nuclear Power Corporation (CGN) recently entered into a partnership to develop new nuclear power stations in the UK. Work has begun on the building of Sizewell C's sister project in Somerset, Hinkley Point C, the UK's first new nuclear power station since Sizewell B. The partnership also includes an agreement to take forward the development of the Sizewell C power station project. We have been working with CGN in China for more than 30 years and are delighted to be taking forward the Sizewell C proposals together.

Sizewell C would make a major contribution to the nation's future needs for low carbon energy, supplying enough electricity for more than six million homes in Britain. Our vision for the Project is to create significant business, training and job opportunities for local and regional communities. We are also committed to limiting or mitigating any adverse effects of our proposals on local communities and the environment.

The Sizewell C team will be available at our consultation events to discuss the proposals and answer your questions. I hope you can join us and contribute to the further development of our plans.

Jim Crawford
Sizewell C Project Development Director



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1. Introduction

1.1. Introduction

1.1.1. EDF Energy¹ is proposing to build and operate a new nuclear power station, Sizewell C, on the Suffolk coast, on land immediately to the north of the existing station, Sizewell B. The Sizewell C Project (the Project) has reached Stage 2 of its pre-application consultation. The purpose of this Stage 2 Consultation Document is to seek informed feedback on the Project proposals so that this can be taken into account by EDF Energy in developing its strategies and proposals (refer to **Section 1.7** for details). This document provides the technical and preliminary environmental information, which is available at this stage of the Project, and explains how this information is informing emerging strategies and proposals for the Project.

1.1.2. For this Stage 2 consultation, which runs from **23 November 2016 to 3 February 2017**, EDF Energy is inviting comments from the local community, including all those living in, working in or otherwise using the local area around Sizewell C and the off-site associated development sites. Feedback is also welcomed from all relevant organisations and those with an interest in land that may be affected by the Project. Refer to **Section 13 Responding to Consultation** of this document for further details on how to engage in this consultation.

1.1.3. This document is supported by a **Stage 2 Consultation Summary Document** which provides a summary of the information detailed in this document. A separate document details the questions posed about specific elements of the strategies and proposals on which feedback is sought.

1.1.4. Following this Stage 2 consultation, EDF Energy will take stock of all comments received before preparing for a further, more detailed, stage of consultation that will pave the way for the submission of an application for development consent.

1.2. EDF Energy

1.2.1. EDF Energy is one of the largest energy companies in the United Kingdom (UK) supplying electricity and gas to its residential and business customers, as well as producing around 20% of the nation's electricity. The company is responsible for the planning, construction, commissioning, operation and eventual decommissioning of its UK nuclear power plants. Currently, EDF Energy operates eight nuclear power stations across the UK. It plans to build and operate two new nuclear power stations—one at Hinkley Point, Somerset and one at Sizewell, Suffolk; each with two UK EPR™ units (a type of pressurised water reactor).

1.3. Policy context

1.3.1. The Overarching National Policy Statement (NPS) for Energy (NPS EN-1) (Ref. 1.1) and NPS for Nuclear Power Generation (NPS EN-6) (Ref. 1.2) were formally designated by Government in July 2011. Together they provide the primary basis for decisions on applications for development consent orders for nuclear projects.

1.3.2. The need for the Project is established in NPS EN-6 which lists Sizewell as one of eight potentially suitable sites for the deployment of a new nuclear power station in England and Wales before the end of 2025. NPS EN-1 sets out national policy for energy infrastructure. NPS EN-1 confirms that all applications for development consent should be assessed on the basis that the Government has demonstrated that there is a need for those types of infrastructure. NPS EN-1 confirms it is Government policy that new nuclear power forms an important element of the strategy for moving towards a decarbonised, diverse electricity sector by 2050, and that it should be able to contribute as much as possible to the UK's need for new capacity. The need for new nuclear power generation is described as 'urgent'.

1.3.3. The proposals for the Project are being developed having regard to the requirements set out in NPSs EN-1 and EN-6, together with other relevant national and local planning policy and guidance. However, NPS EN-1 makes clear that in the event of a conflict between any other guidance and an NPS, the NPS prevails for the purposes of decision making, given the national significance of the infrastructure. Key national and local planning policies are referred to, where relevant, throughout this Stage 2 Consultation Document. Further analysis of the relevant policies and guidance will be set out in more detail in a further stage of consultation and as part of an application for development consent. Refer to **Section 3 Planning Policy Context** for further details.

1.4. The Project

1.4.1. The Sizewell C site is located on the Suffolk coast, approximately halfway between Felixstowe and Lowestoft; to the north-east of the town of Leiston (refer to **Figure 1.1**). The proposed nuclear power station would be located immediately to the north of the existing Sizewell B power station and would comprise two UK EPR™ units with an expected net electrical output of approximately 1,630 megawatts (MW) per unit, giving a total site capacity of approximately 3,260MW. The design of the UK EPR™ units is based on technology used successfully and safely around the world for many years, including innovations to

¹ NNBN Generation Company (SZC) Limited (Company No. 9284825) (referred to in this document as 'EDF Energy').

enhance performance and safety. The UK EPR™ design has passed the Generic Design Assessment process undertaken by UK regulators, and has been licenced and permitted at Hinkley Point C (HPC). Once operational, Sizewell C would be able to generate enough electricity to supply approximately six million (or about 20%) of Britain’s homes.

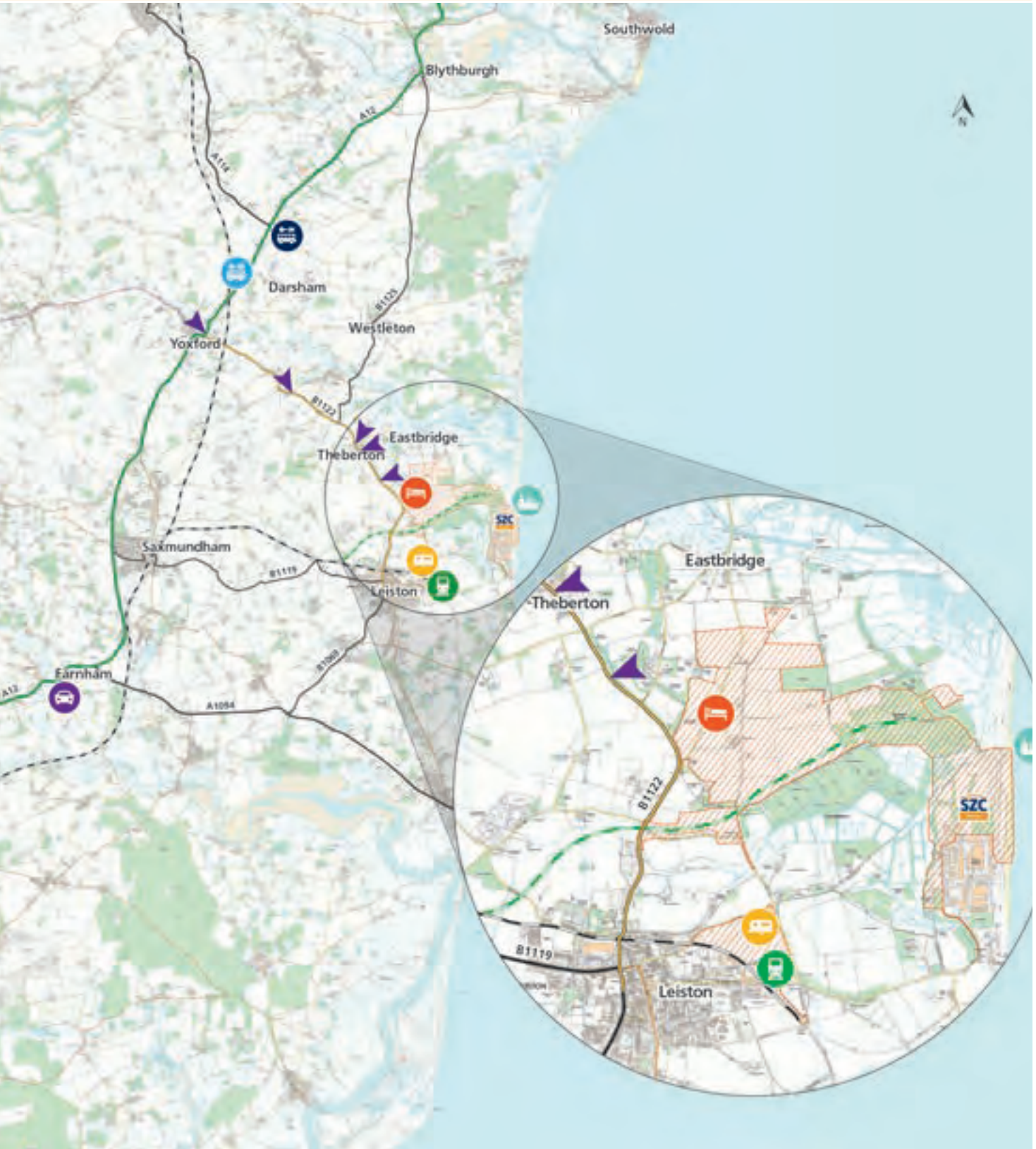
1.4.2. In addition to the key operational elements of the UK EPR™ units, the Project comprises other permanent and temporary development to support the construction and operation of the power station. An overview of the Project is set out in **Section 4 Project Overview**. It describes the key components of the emerging Project, as well as identifying where the components can be regarded as EDF Energy’s preferred proposals or where EDF Energy has yet to identify a preference.

1.4.3. The proposals have been developed paying careful attention to the characteristics of the site and its surroundings. To respond to those characteristics, a series of inter-related strategies have been developed for matters such as socio-economics and transport (refer to **Sections 5 and 6** respectively). The purpose of the strategies is to limit, where practical, the effects that might otherwise arise from the construction of Sizewell C and to optimise the potential benefits to the local area. In just the same way that the Project’s emerging proposals are in draft at this stage, so too are the strategies which are being used to shape them. This consultation seeks views on the strategies as well as the emerging proposals.

1.4.4. The Sizewell C strategies and proposals have also been developed having regard to the environmental sensitivities of the local area. EDF Energy will continue to carry out survey work and consultation to understand environmental conditions and to identify potential effects of the Project. The Environmental Report that formed part of the Stage 1 consultation (Ref. 1.3) provided an understanding of the preliminary environmental information available at that time. Since the Stage 1 consultation, EDF Energy has continued to collect preliminary environmental information to identify any significant environmental effects that may arise in connection with the Project. In doing so it has started to consider how these effects may be addressed, for example through the identification of mitigation measures. The preliminary environmental information collected to date is detailed within **Sections 5–11**. It is intended to provide stakeholders with an understanding of the environmental issues, as far as is known at this stage of the Project, to enable respondents to give informed feedback to this Stage 2 consultation. Preliminary environmental information is provided within each section as follows:

Figure 1.1 Sizewell C Project, Suffolk





- Within the strategy sections (**Section 5 Socio-economics** and **Section 6 Transport**) information includes details of the existing (baseline) environment for a range of matters (e.g. social, community, economic and accommodation matters, and the highway network) and provides an indication of how this may change as a result of the Project.
- Within **Section 7 Main Development Site** preliminary environmental information is presented as follows:
 - identification of the environmental factors that have influenced the siting and/or form of the proposals;
 - identification of the differentiating factors from an environmental perspective where options are presented (e.g. the proposed crossings of the Site of Special Scientific Interest (SSSI)); and
 - identification of the key potential effects, and any mitigation measures, that are predicted in relation to the construction and/or operational phases.
- Within **Section 8 Rail, Section 9 Northern Park and Ride** and **Section 10 Southern Park and Ride** preliminary environmental information is presented as follows:
 - identification of the differentiating factors from an environmental perspective which have informed the site selection process;
 - identification of the environmental factors that have influenced the form of each of the proposals described; and
 - identification of the key potential effects, and any mitigation measures, that are predicted in relation to the construction and/or operation.
- Within **Section 11 Highway Improvements** preliminary environmental information is presented as follows:
 - identification of the environmental factors that have influenced the form of each of the options and proposals described; and
 - identification of the key potential effects, and any mitigation measures, that are predicted in relation to the construction and/or operation of those options and proposals.

1.4.5. EDF Energy will continue to collect environmental information to inform an Environmental Impact Assessment (EIA), which will assess the likely significant effects of the Project. Further details of the EIA process being adopted by EDF Energy is set out in **Section 12 Related Assessments and Approaches**. EDF Energy intends to provide more detailed preliminary environmental information as part of its next stage of consultation.

1.5. Approach to and scope of consultation

a) Purpose of consultation

1.5.1. Prior to submitting an application for development consent, EDF Energy is undertaking pre-application consultation in order to obtain the views of the local community, statutory stakeholders, those with an interest in the land and other interested parties on the strategies, proposals and related assessments.

1.5.2. The process of seeking development consent for Nationally Significant Infrastructure Projects (NSIPs), such as Sizewell C, is governed by the Planning Act 2008 (the 2008 Act) (Ref. 1.4). The NSIP regime is purposefully ‘front-loaded’, requiring extensive consultation and environmental assessment to be carried out before an application is submitted.

1.5.3. Pre-application consultation is a vitally important part of the process; it is fundamental to the efficiency and effectiveness of the consenting regime for NSIPs and the quality of the outcome. Indeed, the Department for Communities and Local Government’s (DCLG) guidance (Ref. 1.5) explains (paragraph 18) that early consultation with local communities, local authorities and statutory consultees has the following benefits:

- helping the applicant to identify and resolve issues at the earliest stage, which can reduce the overall risk to the project further down the line, as it becomes more difficult to make changes once an application has been submitted;
- enabling members of the public to influence proposed projects by providing feedback on potential options;
- encouraging the community to help shape proposals to maximise local benefits and minimise any adverse effects;
- helping local people to understand the potential nature and local effects of the project, with the potential to dispel misapprehensions at an early stage;
- enabling applicants to obtain important information from consultees about the economic, social and environmental effects of a scheme, which can help rule out unsuitable options;
- enabling potential mitigation measures to be considered and, if appropriate, incorporated into the project before an application is submitted; and identifying ways in which the project could, without significant costs to promoters, support wider strategic or local objectives.

1.5.4. Those who must be consulted fall into two categories:

- statutory consultees (such as relevant local authorities, landowners and other statutory bodies including the Environment Agency, Natural England and the Marine Management Organisation), as required by Section 42 of the 2008 Act; and
- the local community living in the vicinity of the site, as required by Section 47 of the 2008 Act.

1.5.5. Feedback is sought under s42(1)(d) of the 2008 Act from all those with an interest in land that may be affected by the Project. This includes those who are an owner, lessee, tenant or occupier of the land, or those who have a power to either sell and convey the land or release the land, or may or would be entitled to make a relevant claim. EDF Energy has undertaken diligent enquiries to identify these stakeholders. Feedback to this consultation, and finalisation of the proposals at the next stage of consultation, will enable EDF Energy to ensure that it has identified those stakeholders as best it can.

1.5.6. At Stage 3 consultation, EDF Energy will also publicise the proposed application under s48 of the 2008 Act and invite comments from the wider public.

1.5.7. The approach to how EDF Energy will consult local communities about its proposals is detailed in its Statement of Community Consultation (SoCC) (Ref. 1.6), which was agreed with Suffolk Coastal District Council (SCDC) and Suffolk County Council (SCC) prior to its publication.

1.5.8. EDF Energy has committed to undertaking a minimum of three formal stages of pre-application consultation prior to submitting its application for development consent, as illustrated in **Figure 1.2**. This is in recognition of the amount of time that has passed, as well as in response to public feedback to the Stage 1 consultation. It is intended that all stakeholders (i.e. local community, statutory stakeholders and other interested parties) will be consulted at each of the three formal stages of consultation.

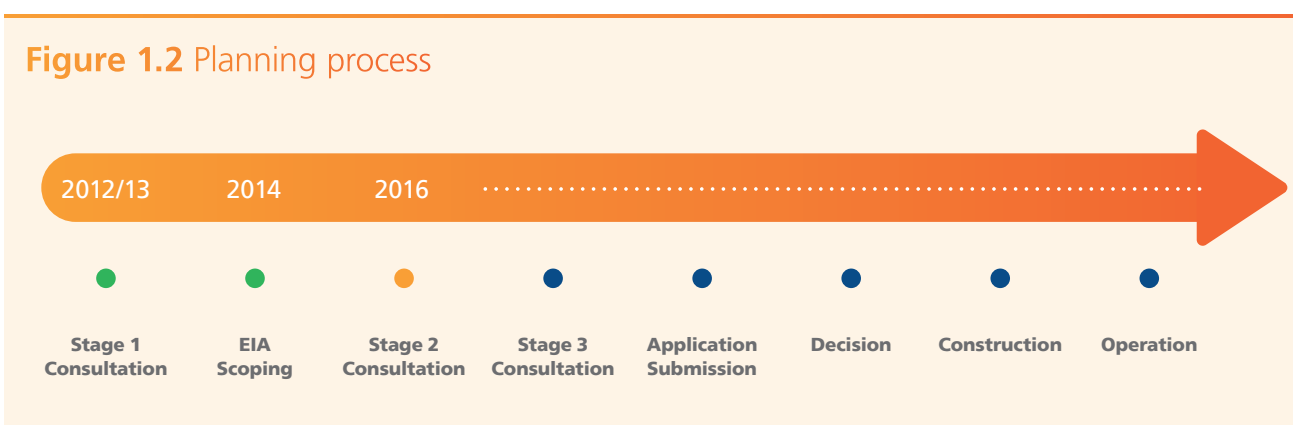
b) Stage 1 consultation

1.5.9. EDF Energy’s Stage 1 consultation (Ref. 1.7) ran between 21 November 2012 and 6 February 2013. The purpose of that consultation was to seek views on EDF Energy’s initial proposals and options for the Project. The extensive engagement comprised:

- direct engagement with over 4,000 local people;
- over 100 events, including meetings, exhibitions, drop-in sessions, media engagements and presentations; and
- over 100 press articles, adverts and media broadcasts.

1.5.10. Approximately 1,300 responses were received to the Stage 1 consultation. EDF Energy has considered each of these responses, having regard to them when evolving the strategies and proposals which are included in this Stage 2 consultation. Each section of this document includes an overview of the responses received and how this has informed the evolution of the strategies and proposals. The format of this information is different within each section, reflective of the evolution of each matter.

Figure 1.2 Planning process



c) Stage 2 consultation

1.5.11. EDF Energy is currently seeking views on all aspects of its strategies and proposals (including any options) presented in this document, as summarised in the **Stage 2 Consultation Summary Document**. The accompanying **Consultation Questionnaire** identifies the options and matters within **Sections 5–11** of this document on which particular feedback is sought. EDF Energy encourages stakeholders to respond to this Stage 2 consultation, as feedback will help to further evolve the strategies and proposals. Details of the ways that stakeholders can find out more and respond to this consultation are set out in **Section 13 Responding to Consultation**.

d) Stage 3 consultation and application

1.5.12. Following this Stage 2 consultation, EDF Energy will consider all responses received and use them to inform the further evolution of its strategies and proposals. Thereafter, EDF Energy will undertake a further stage of consultation setting out its preferred strategies and proposals, as well as providing further preliminary environmental information (refer to **Section 12 Related Assessments and Approaches**). It may also be necessary to undertake additional supplementary consultation if specific issues or changes arise.

1.5.13. Once EDF Energy has completed all stages of its pre-application consultation it will prepare and submit an application for development consent to the Planning Inspectorate. The Planning Inspectorate will examine the application and make a recommendation to the Secretary of State who would ultimately determine whether development consent should be granted.

1.5.14. The application will comprise full details of the development proposals alongside a suite of documents which will include a Consultation Report, that details what consultation has taken place and identifies how responses to the consultation have influenced the final proposals, and an Environmental Statement (ES) that identifies the significant environmental effects that the Project is likely to give rise to, as well as details of how these effects would be dealt with.

1.5.15. If stakeholders wish to understand more about the planning process for NSIPs further information is available on the Planning Inspectorate's website (<http://infrastructure.planninginspectorate.gov.uk/>).

e) Informal engagement

1.5.16. In addition to the three formal stages of consultation, EDF Energy is committed to continuing informal engagement with all stakeholders, including statutory consultees and local communities. Approximately 200 meetings and events were participated in between the close of the Stage 1 consultation (February 2013) and the start of this Stage 2 consultation. In terms of ongoing engagement, EDF Energy has a wide-ranging consultation strategy which includes:

- regular newsletters to over 30,000 homes in the local area;
- access to the Sizewell C Information Office (48-50 High Street, Leiston), which is open 09:30–17:00 Monday–Friday;
- Community Forum meetings with over 50 members who represent various local interests;
- presentations to groups, including community groups, parish councils and other organisations (e.g. the local chambers of commerce);
- attendance at, and sponsorship of, local events (e.g. the Suffolk Show);
- one-to-one meetings with neighbouring residents;
- the Sizewell C consultation website, which provides the latest Project information; and
- media coverage (e.g. television and radio broadcasts and press releases).

1.5.17. Similarly, engagement has been undertaken with statutory and non-statutory consultees (e.g. Suffolk Wildlife Trust and Visit Suffolk) in between the Stage 1 and Stage 2 consultations.

1.5.18. This engagement will continue during the period between formal stages of consultation.

1.6. Other regulatory regimes

1.6.1. This Stage 2 consultation principally focuses on the proposals and strategies that would be included within an application for development consent. However, other approvals and consents would be required to permit the construction and operation of the power station, including:

- a Nuclear Site Licence (NSL) pursuant to the Nuclear Installations Act 1965 (as amended) (Ref. 1.8) for the construction and operation of a power station, determined by the Office for Nuclear Regulation (ONR);

- an opinion under Euratom Treaty (1957) Article 37 (Ref. 1.9) relating to radioactive discharges from a nuclear reactor site, determined by the European Commission through a submission by the UK Government;
- environmental permits (e.g. a Radioactive Substances Regulations permit, Water Discharge Activity permit and Combustion Activity permit) pursuant to the Environmental Permitting (England and Wales) Regulations 2010 (as amended) (Ref. 1.10) for construction and operational emissions and discharges. These are determined by the Environment Agency following an application, and considered by the Secretary of State for the Department for Environment, Food and Rural Affairs (Defra);
- a communication to the European Commission under Article 41 of the Euratom Treaty in connection with the investment project relating to Sizewell C; and
- an approved Funding Decommissioning Programme, pursuant to the Energy Act 2008 (Ref.1.11), is required before nuclear safety related construction can take place.

1.6.2. EDF Energy is making progress in relation to these approvals and consents. Any matters raised by those applications would be matters for those determining authorities. This approach is supported by NPS EN-6, which is clear that applications for development consent should be considered on the basis that matters relevant to other legislation will be satisfactorily addressed and controlled through the need to satisfy strict requirements of legislative and regulatory control.

1.6.3. Other consents and licences would need to be secured to facilitate the construction of the power station and any associated developments. These could include: licences to ensure that particular species are protected during the construction works; agreements to enable EDF Energy to undertake works to the public highway; and licences to enable EDF Energy to undertake works within the marine environment. There are opportunities for EDF Energy to include some of the consents and licences into its application for development consent. EDF Energy is exploring these opportunities and will clarify at a further stage of consultation any consents that it would seek to include in its application for development consent.

1.7. Structure of this document

1.7.1. This Stage 2 Consultation Document is structured in two main parts. **Sections 2–6** and **12** provide contextual information and details of project-wide

strategies and approaches. **Sections 7–11** provide details of site-specific proposals and related preliminary environmental information. An overview of the contents of this Stage 2 Consultation Document is as follows:

- **Section 2** sets out the Sizewell C Project Vision and objectives which are guiding the evolution of the strategies and proposals.
- **Section 3** provides a high-level summary of the key planning policy considerations relevant to the Project, including the need for the development and the primacy of the NPSs in decision-making on NSIPs.
- **Section 4** provides an overview of the Project, including how it would be delivered and the nature of the proposals.
- **Section 5** describes the work undertaken since the Stage 1 consultation in relation to socio-economic matters, specifically people and the economy (i.e. jobs, education, skills, supply chain and other sectors) and accommodation (i.e. effects of the construction workforce on the accommodation sector).
- **Section 6** describes the proposed transport strategy in relation to the movement of the construction workforce and movement of materials and freight. It also provides information about traffic modelling and potential effects across the modelled area and next steps in relation to this matter.
- **Section 7** details the main development site design principles and the proposals for the masterplan of the power station during the operational phase. For the construction phase, information is provided on construction site requirements (including the accommodation campus), a description of the construction masterplan and the indicative construction programme. This section also includes preliminary environmental information.
- **Section 8** details the rail infrastructure works being considered, focusing on two options - the rail extension option (green rail route) extending into the main development site and a new rail terminal and freight laydown area on land to the east of Eastlands Industrial Estate - as the proposals for the use of rail during the construction phase. The section also describes the proposals for the use of Sizewell Halt during the early years of the construction phase. It includes details of the site selection process undertaken since the Stage 1 consultation and a description of the site, an overview of the proposals, preliminary environmental information and next steps for each of the options presented.

- **Section 9** details the proposals for a northern park and ride facility, focusing on EDF Energy's preferred site at Darsham. It includes details of the site selection process undertaken since the Stage 1 consultation, a description of the site, an overview of the proposals, preliminary environmental information and next steps for the preferred site.
- **Section 10** details the proposals for a southern park and ride facility, focusing on EDF Energy's preferred site at Wickham Market. It includes details of the site selection process undertaken since the Stage 1 consultation, a description of the site, an overview of the proposals, preliminary environmental information and next steps for the preferred site.
- **Section 11** details the highway improvements being considered along the A12, focusing on four options - a 'no change' option, road widening of the A12 as it bends through Farnham, a bypass around the village of Farnham and a bypass around the villages of Farnham and Stratford St Andrew. This section includes an overview of the proposals of each option, together with preliminary environmental information and details of the next steps.

This section also identifies proposed improvements along the B1122, namely works at the A12/Yoxford junction, speed limit reductions, improvements west of the junction with Mill Street, pedestrian enhancements in Theberton, and aligning the B1122 between Theberton and the main development site.

This section also includes details of EDF Energy's initial proposals relating to public rights of way, as well as the bridleway and cycleway network in the vicinity of the Sizewell C site.

- **Section 12** details EDF Energy's approach to other matters that may be of interest to stakeholders, including other assessments being undertaken (i.e. Environmental Impact Assessment, Habitat Regulations Assessment, Flood Risk Assessment and Water Framework Directive Assessment) and matters relating to waste and sustainability.
- **Section 13** details the ways that stakeholders can find out more and respond to this consultation.

2. Vision and Objectives

2.1. Introduction

2.1.1. The Overarching National Policy Statement (NPS) for Energy (NPS EN-1) (Ref.1.1) and the NPS for Nuclear Power Generation (NPS EN-6) (Ref.1.2) were considered by Parliament and formally designated in July 2011. Together they provide the primary policy basis for decisions on applications for development consent for nuclear power station projects. An application for the development of Sizewell C would be determined in accordance with the NPSs, subject to other statutory provisions and any other matters that the Secretary of State thinks are important and relevant. **Section 3 Planning Policy Context** provides further details.

2.1.2. In order to guide the development of the Sizewell C Project (the Project), EDF Energy has adopted its own Vision for the Project and a set of objectives for its design and delivery. They have been developed to reflect the specific characteristics of the Sizewell area. The Vision and objectives have been guided by EDF Energy’s corporate objectives and tested against the terms of the NPSs to ensure their compatibility. Whilst the acceptability or otherwise of EDF Energy’s proposals will be considered by reference to the tests and guidance in the NPSs, the evolution of the Project has also been informed by the application of the Project Vision and objectives. The Vision and objectives are set out below. The way in which they have been applied is explained in the relevant sections of this document.

2.2. Project Vision

2.2.1. The Vision for the Project is as follows:

“EDF Energy intends to deliver a nuclear power station at Sizewell C that will make a major contribution to the nation’s low-carbon energy needs. The development, operation and ultimate decommissioning of the power station will be undertaken in a manner consistent with the highest standards of safety, reliability and sustainability.

EDF Energy will strive to ensure that the inherent benefits of its investment in Sizewell C are captured in a way which makes the most of its practical contributions to the local and regional economy.”

“In recognition of the environmental sensitivity of the location, EDF Energy will ensure that the power station is designed and delivered in such a way as to limit any adverse effects on the environment and on local communities as far as is reasonably practical. Any significant adverse effects of the construction, operation or decommissioning of the power station shall be mitigated where practical and appropriate in a way which is environmentally responsible and sensitive both to the needs of the community and to the strategies of the relevant authorities.”

2.3. Project objectives

2.3.1. Achieving sustainable development involves optimising social, economic and environmental outcomes. EDF Energy wishes to deliver the Project in a manner that enables its objectives under all three categories to be accomplished.

2.3.2. EDF Energy’s commitment to delivering Sizewell C responsibly aligns with the company’s mission, which is to be:

“a successful and responsible long-term energy business, trusted by customers and powering a thriving society and a healthy environment.”

2.3.3. Central to the achievement of sustainable development are the EDF Energy Better Energy Ambitions, published in June 2014 (Ref. 2.1):

- to achieve Zero Harm to people;
- to be the best and most trusted by customers;
- to power society without costing the Earth;
- to deliver safe, secure and responsible nuclear electricity;
- to achieve strong financial and ethical performance; and
- to empower our people to be a force for good.

2.3.4. The way in which the Project is being planned, designed, constructed, operated and decommissioned is aligned to these ambitions. The Project objectives have been formulated with these in mind. EDF Energy's objectives for the design and delivery of the Project are:

- safety: safety during construction, operation and decommissioning is EDF Energy's overriding objective;
- design and environment: Sizewell C will be designed and implemented to high environmental standards, taking full account of the sensitivity of its location;
- social and economic effects: EDF Energy will ensure that the Project limits any significant local adverse economic or social effects, whilst optimising local benefits that directly arise from the construction and operation of the power station; and
- delivery: EDF Energy will maintain the commercial viability and practical deliverability of the Project.

2.3.5. These objectives are each underpinned by a set of principles that are outlined in the relevant sections of this document. For example, the safety, design and environment principles relating to the power station development are detailed in **Section 7 Main Development Site**.

2.3.6. The objectives and principles seek to capture and explain the factors which EDF Energy considers to be particularly important in planning and designing the Project. They are tailored to the Project and seek to take account of what is important and relevant about the local area, at the same time as recognising the scale and importance of delivering a new power station.

2.3.7. These factors particularly respond to the ecological and landscape sensitivity of the area, including the sensitivity of the coast. They also recognise the proximity and sensitivity of nearby settlements and the concern that exists for the traffic effects of the construction phase. By defining and then applying these principles in developing the proposals, EDF Energy intends to strike an appropriate balance between local environmental considerations and the need to ensure that the Project is delivered efficiently.

2.3.8. EDF Energy recognises that the Project can bring significant benefits, both nationally and locally. The Vision and objectives serve to ensure that the importance of securing and optimising those local benefits is recognised throughout all stages of the Project's life.

2.3.9. In order to have regard to all of these factors, EDF Energy has developed socio-economic and transport strategies which are consistent with the overall Vision, which are explained further in **Sections 5 and 6** respectively. Details of the other considerations to which regard must be paid in the evolution of the strategies and proposals are detailed in **Section 12 Related Assessments and Approaches**.

3. Planning Policy Context

3.1. Introduction

3.1.1. This section provides a high-level summary of the key planning policy considerations relevant to the Sizewell C Project (the Project). The purpose of this section is to explain the policy context for the Project as a whole, including for the strategies and proposals which are being consulted upon.

3.1.2. Detailed analysis of the Project against the policies is not provided at this stage, as the strategies and proposals are still being developed. However, the strategies and proposals are being informed by national and local planning policy, as appropriate. The detailed policy analysis will be included in a further stage of consultation and, in due course, in support of an application for development consent.

3.2. Planning regime

3.2.1. The Planning Act 2008 (the 2008 Act) (Ref.1.4) is the primary legislation which establishes the legal framework for applying for, examining and determining applications for Nationally Significant Infrastructure Projects (NSIPs), including new nuclear power stations.

3.2.2. A consent for an NSIP takes the form of a Development Consent Order (DCO). Applications for development consent are determined within the context of relevant National Policy Statements (NPSs).

3.3. Need for new nuclear development and Sizewell C

3.3.1. In the 2008 White Paper on Nuclear Power (Ref. 3.1) the Government made clear that new nuclear power stations should have a role in the UK's energy mix, alongside other low-carbon sources. Nuclear power can contribute to meeting the UK's binding targets for emissions reductions, whilst contributing to diversity and security of supply.

3.3.2. The Government's Overarching NPS for Energy (NPS EN-1) (Ref.1.1) states that, for the Government to meet its energy and climate change objectives, there is an urgent need for new electricity generating stations, including new nuclear power. NPS EN-1 anticipates that, as a low-carbon, proven technology, nuclear power generation can play an increasingly important role as we move to diversify and decarbonise our sources of electricity.

3.3.3. Members of Parliament have confirmed the Government's ongoing commitment to new nuclear.

For example, as recently as July 2016, the Rt Hon Greg Clark MP and Secretary of State for Business, Energy and Industrial Strategy re-emphasised the importance of new nuclear in a statement reported in the press:

“New nuclear is an essential part of our plan for a secure, clean and affordable energy system that will power the economy throughout this century.”

3.3.4. Sizewell is identified in the NPS for Nuclear Power Generation (NPS EN-6) (Ref.1.2) as one of eight potentially suitable sites for deployment of new nuclear power stations by 2025. The eight sites were identified on the basis of a Strategic Siting Assessment (SSA) carried out by the Government. The Sizewell C site was nominated into the SSA by EDF Energy. The Government has assessed the suitability of the site based on a strategic level review against a number of criteria. To inform its policy, the Government also carried out an Appraisal of Sustainability (AoS) (Ref. 3.2) which assessed the sustainability of the NPS on nuclear power generation, taking account of alternative strategies and the potential impacts of nominated sites.

3.3.5. Annex C to NPS EN-6 contains the outcomes of the site assessments and the reasons why the sites listed have been found to be potentially suitable. In relation to Sizewell C specifically, the annex demonstrates that the site's suitability has been considered carefully and that its inclusion in the NPS reflects the in-principle acceptability of the location, as well as the overall need for nuclear power generation.

3.3.6. The annex also identifies that the development of Sizewell C would not be expected to take place without some significant impacts. However, the assessment recognises the potential acceptability of those impacts in view of the national need for nuclear power generation and the scarcity of alternative sites.

3.3.7. NPS EN-6 was also subject to a Government Habitats Regulations Assessment (HRA) in accordance with the Habitats Directive (Ref. 3.3). The HRA recognised that there is potential for adverse effects on the integrity of European Sites adjacent to or within the proximity of the potential sites identified in NPS EN-6. In line with the requirements set out in Article 6(4) of the Habitats Directive, the Government considered potential alternatives. It concluded that there were no alternatives that would better respect the integrity of European Sites and deliver the objectives of NPS EN-6.

3.3.8. The annex recognises that the Sizewell C site is located in a sensitive area and a precautionary approach suggests that the potential for adverse effects on the integrity of nine European sites cannot be ruled out. However, taking account of the urgent need for new nuclear power generation and the potential for avoidance and mitigation, the Government concluded that there is an Imperative Reason of Overriding Public Interest (IROPI) that favours the inclusion of the site in NPS EN-6 (paragraph C.8.57 of NPS EN-6 Annex C).

3.3.9. In addition to the precautionary approach adopted towards the European Sites, NPS EN-6 also draws attention to the following environmental considerations:

- there would be a direct loss of a triangle of land within the Sizewell Marshes Site of Special Scientific Interest (SSSI), but the annex finds that there is potential for this loss to be addressed by habitat creation (paragraphs C.8.60.63 and .126 of NPS EN-6 Annex C);
- the visual sensitivity of the location within the Area of Outstanding Natural Beauty (AONB) is recognised and the NPS annex accepts that there are likely to be some long lasting adverse direct and indirect effects on the landscape, but that these are not likely to be sufficient to rule out developing a new nuclear power station (paragraphs C.8.83 and .84 of NPS EN-6 Annex C; and NPS EN-6 paragraph 3.10.8); and
- the potential for flood risk and coastal erosion is identified, but the annex considers it is reasonable to conclude that the power station can be protected from these risks (paragraphs C.8.19 and .39 of NPS EN-6 Annex C).

3.3.10. The conclusion of NPS EN-6 is that, in principle, the Sizewell site is potentially suitable for development of a nuclear power station. It is acknowledged that the sensitivities of the location do not in themselves constitute a reason to prevent the site from being considered as potentially suitable. The NPS highlights, however, the importance of paying full regard to the need to limit, mitigate or compensate for impacts, where practical.

3.3.11. The principle of site suitability, and the need for Sizewell C, is established through NPS EN-1 and NPS EN-6. Therefore, these matters do not fall to be debated in the consideration of an application for development consent. National planning policy recognises the urgency of need for the development of a new nuclear power station at Sizewell and the significant national and regional benefits that such a development is expected to bring.

3.3.12. The weight to be given to that need, however, is important and further described within the NPS. NPS EN-1 advises that the weight which is attributed to considerations of need in any given case should be 'substantial' and at least proportionate to the anticipated extent of a project's actual contribution to satisfying the need for a particular type of infrastructure (paragraph 3.2.3 of NPS EN-1). NPS EN-1 makes it clear that Government policy is that nuclear power should be free to contribute as much as possible towards meeting the need for around 18GW (gigawatts) of new non-renewable capacity by 2025 (paragraph 3.3.22 of NPS EN-1).

3.4. Historic site selection

3.4.1. In the 1950s, Sizewell was confirmed as an appropriate location for the construction and operation of the Sizewell A nuclear power station. Sizewell A was subsequently commissioned in 1966 and operated for 40 years. It is currently being decommissioned. Sizewell B was granted planning permission in 1987, following a public inquiry, with a recognition that an application for Sizewell C would follow. This was reflected in the Inspector's report (Ref. 3.4) (paragraphs 96.5, 96.38 and 108.23). The landscape strategy put in place for Sizewell B included advanced mounding and planting to define and protect a potential Sizewell C site. EDF Energy's current proposals encompass the area identified for the previous Sizewell C proposals.

3.4.2. The site's identification in current national policy reconfirms the historic recognition of Sizewell as a suitable location for nuclear power generation.

3.5. National Policy Statements

3.5.1. NPS EN-1 and NPS EN-6 were considered by Parliament and formally designated in July 2011. Together they provide the primary basis for decisions on applications for nuclear projects.

a) NPS EN-1

3.5.2. As well as setting out the important need case for new electricity generation, NPS EN-1 also provides policy or the assessment of the following generic effects of energy projects:

- air quality and emissions;
- biodiversity and geological conservation;
- civil and military aviation and defence interests;

- coastal change;
- dust, odour, artificial light, smoke, steam and insect infestation;
- flood risk;
- historic environment;
- landscape and visual;
- land use, including open space, green infrastructure and Green Belt;
- noise and vibration;
- socio-economics;
- traffic and transport;
- waste management; and
- water quality and resources.

3.5.3. EDF Energy is considering all relevant issues identified in NPS EN-1 as it develops its strategies and proposals for the Project.

b) NPS EN-6

3.5.4. Section 4.1 of NPS EN-6 lists the eight potentially suitable sites for the deployment of new nuclear power stations in England and Wales before the end of 2025, including Sizewell. NPS EN-6 provides additional policy for the assessment of the effects and siting considerations for new nuclear power stations at those sites. In particular, it provides policy relating to the following:

- flood risk;
- water quality and resources;
- coastal change;
- biodiversity and geological conservation;
- landscape and visual;
- socio-economics; and
- human health and well-being.

3.5.5. NPS EN-6 also requires the following further issues to be considered where relevant:

- proximity to civil aircraft movements;

- access to transmission networks;
- impact on significant infrastructure and resources; and
- size of site to accommodate construction and decommissioning.

3.5.6. EDF Energy is considering all relevant issues identified in NPS EN-6 throughout the development of its strategies and proposals for the Project. Further detailed information about these issues is provided, as relevant, in the strategy sections (**Sections 5 and 6**) and in the site-specific sections (**Sections 7–11**) of this document.

3.5.7. The issues raised in the NPSs are clearly important. However, they are matters to be addressed by the detail of the emerging application proposals and related mitigation strategies, rather than issues that go to the acceptability of the Project as a whole.

3.6. Other planning policy considerations

3.6.1. The primary policy basis for determining any application for development consent for a nuclear power station is the policy framework set out in NPS EN-1 and NPS EN-6. The extent to which the National Planning Policy Framework (NPPF) (Ref. 3.5) and the local development plan are deemed material is a matter for the examining authority and the Secretary of State.

3.6.2. Section 104 of the 2008 Act makes clear that an application for development consent must be determined in accordance with any NPS(s), taking account of any local impact report and any other matters that are both important and relevant to the decision. Neither the NPPF nor local planning policy is specifically identified as a matter to be taken into account, although the decision maker may determine that one, or both, are important and relevant.

a) National Planning Policy Framework

3.6.3. The NPPF sets out the Government’s planning policy at the national level. As set out in paragraph 3, the NPPF ‘does not contain specific policies for nationally significant infrastructure projects for which particular considerations apply’. However, the NPPF may be an important and relevant consideration in the determination of NSIPs in relation to particular matters (e.g. flood risk). It sets out a positive planning policy framework within which development needs are to be met, where practical, and obstacles to investment are to be overcome.

b) Local planning policy

3.6.4. In relation to some policy topic areas, the NPS does import direct reference to local policy designations. For example, the fact that the Sizewell area is designated as an AONB and a Heritage Coast in local designations may well be important and relevant, although the approach to be taken to development within such locally designated areas is a matter for the policies of the NPS.

3.6.5. This relationship between national and local policy is apparent in the local statutory development plan, the Suffolk Coastal District Local Plan (Ref. 3.6). The Local Plan recognises that national policy has identified Sizewell as a potentially suitable site for the development of an additional nuclear power station (including paragraphs 1.14, 2.19, 2.42 of the Local Plan). The Local Plan is clear that any decision on such an application will be taken 'at a national level' and that the role of the local planning authority is as a statutory consultee (paragraphs 3.76, 3.130 and 3.132).

3.6.6. The Local Plan recognises that the need for a new nuclear power station has been established in national policy (paragraph 3.131 of the Local Plan), and that the role of the planning process is limited to considering the suitability of any specific proposals and the mitigation of local impacts. Consequently, whilst Local Plan Strategic Policy SP13 sets out a range of issues which 'the Council considers [to be] the local issues that need to be adequately addressed', paragraph 3.132 is clear that these matters are listed in the plan in order to inform the Local Impact Report to be prepared by SCDC, rather than as tests for the acceptability of any application for development consent. Consistent with the approach, the Local Plan recognises, for example, that the transport effects of a new nuclear power station would be 'assessed in line with policies set out in the NPS EN-1 and NPS EN-6' (paragraph 3.116).

3.6.7. The strategies of the Local Plan may be considered important and relevant, but where these relate to generic issues, such as the protection of the environment, the relevant policy tests are contained within the NPS. Consistent with the NPSs, Local Plan Strategic Policy SP13 recognises that there would be disbenefits arising from the development. However, it sees the role of SCDC as seeking to maximise the potential benefits. An example of this is in securing local economic and training benefits from the scale of the investment involved in the construction and operation of the nuclear power station.

3.7. Implications of planning policy

3.7.1. In considering any application which is brought forward for Sizewell C, national and local policy recognise that the development of a new nuclear power station would inevitably have local impacts which cannot be fully mitigated. However, development can nevertheless be acceptable given the urgent and important national need for new nuclear generation and the established lack of alternative sites.

3.7.2. National policy sets out assessment principles against which any application should be developed and assessed. Those principles recognise the in-principle suitability of the Sizewell C site and confirm that the task for the application is to limit adverse effects where practical and to define any necessary mitigation. Local policies recognise the role of national policy, whilst confirming that the local authorities will seek to ensure the development of strategies that harness the benefits of the Project for the local and wider area.

3.8. Next steps

3.8.1. This background of planning policy has led EDF Energy to develop a Project Vision and objectives (refer to **Section 2 Vision and Objectives**). Balancing the environmental sensitivities and local effects with the need for the development of a NSIP calls for a thoughtful approach to the design and implementation of the Project, informed by a full understanding of the environmental qualities of the area.

3.8.2. In order to limit the adverse effects of the Project, EDF Energy has developed socio-economic and transport strategies (refer to **Sections 5 and 6** respectively) to address the principal characteristics of the Project. For example:

- The evolving transport strategy seeks to use other modes of transport (rail and sea), where feasible, to minimise any effects on the road network.
- The evolving transport strategy also seeks to limit car traffic by adopting a park and ride strategy for construction workers, thereby drastically reducing daily traffic flows to the main development site.
- The sensitivity of the AONB and the Heritage Coast is being addressed by the careful siting and design of the proposals, in accordance with the design principles for the built development.

- The potential for construction workers to place pressure on the relatively small-scale local housing market is being addressed by establishing an accommodation strategy in which a large proportion of the construction workforce would be accommodated in a temporary accommodation campus.
- By locating an accommodation campus adjacent to the main construction area, traffic impacts would be further reduced along the local roads that lead to Sizewell C, whilst the location is close enough to shops and services in Leiston to deliver a beneficial economic relationship.
- Environmental effects will be limited by careful design, and by a strategy to enhance the landscape of EDF Energy's wider Sizewell C Estate (the Estate).

3.8.3. A number of effects have the potential to be directly beneficial, particularly the creation of construction and permanent jobs and the spending which Sizewell C would bring to the local economy. The NPS recognises that these effects are likely to be positive and of 'regional economic significance', whilst adding to community viability (paragraph C.8.119 of NPS EN-6 Annex C). EDF Energy has developed strategies with the aim of delivering benefits to the local area. These strategies are explained in **Section 5 Socio-economics** and **Section 6 Transport**.

4. Project Overview

4.1. Introduction

4.1.1. EDF Energy is proposing to build and operate a new nuclear power station, Sizewell C, on the Suffolk coast, on land immediately to the north of the existing station Sizewell B. The Sizewell C Project (the Project) would be one of the biggest and most technologically complex construction projects ever undertaken in the UK. **Figure 1.1** illustrates the location of the proposals needed to support the construction and operation of Sizewell C.

4.1.2. Part of EDF Energy’s Vision for the Project (refer to **Section 2 Vision and Objectives**) states:

“EDF Energy intends to deliver a nuclear power station at Sizewell C that will make a major contribution to the nation’s low-carbon energy needs. The development, operation and ultimate decommissioning of the power station will be undertaken in a manner consistent with the highest standards of safety, reliability and sustainability.

“EDF Energy will strive to ensure the inherent benefits of its investment in Sizewell C are captured in a way which makes the most of its practical contributions to the local and regional economy.”

4.1.3. Once operational, Sizewell C would be able to generate up to 3,260MW of low-carbon electricity. This significant contribution to the grid would provide enough electricity to supply approximately six million (or about 20%) of Britain’s homes, and help facilitate the shift to a low carbon economy.

4.1.4. EDF Energy wishes to continue working in partnership with local stakeholders, including the local authorities, service providers (e.g. education and health providers, and the police), local businesses and the local community as it develops the measures necessary to fulfil its Vision. EDF Energy will also draw on its learning from its Hinkley Point C (HPC) Project, as well as experiences from elsewhere.

4.1.5. EDF Energy has developed socio-economic and transport strategies to manage the people and movements associated with the construction phase of the Project (as set out in **Sections 5** and **6** respectively). These strategies give rise to a series of proposals which are necessary to support their delivery, as identified in the site specific sections (**Sections 7–11**). This section provides an overview of these strategies and proposals, with further details provided in subsequent sections of this document.

4.1.6. Since the Stage 1 consultation (Ref 1.7) a considerable amount of technical and environmental work has been undertaken to inform the evolution of the proposals, having regard to feedback from the Stage 1 consultation. For some proposals there is greater clarity on which option(s) EDF Energy is likely to progress in its application for development consent (e.g. the siting of two park and ride facilities). For other proposals there is less clarity (e.g. the marine infrastructure to receive goods by sea), as the outputs of technical and environmental studies are less advanced. The purpose of this consultation is to seek views on all elements of the strategies and proposals. However, EDF Energy is particularly interested in receiving feedback on the options where issues are still outstanding, as summarised in **Figure 4.1**.

Figure 4.1 Overview of proposals

Main Development Site	Permanent development	<p>Main development site – permanent development phase (refer to Section 7): Whilst EDF Energy is seeking views on all aspects of the proposals for the permanent components of Sizewell C it is particularly seeking views those components where there are options or changes since the Stage 1 consultation, namely:</p> <ul style="list-style-type: none"> • the concept proposals for the external finish of the turbine halls; • the junction arrangement for the new access road with the B1122; • the design of the crossing of the SSSI, of which there are four options: <ul style="list-style-type: none"> – Option 1: causeway over culvert for both the construction and operational phase, which EDF Energy is favouring from an operational perspective; or – Option 2: a single span bridge with vertical wing walls; or – Option 3: a three span bridge for both the construction and operational phases; or – Option 4: a causeway over a culvert with an adjacent short-term bridge solution. • the proposals for the flood defence and coastal protection measures; • a beach landing facility to receive occasional deliveries of Abnormal Indivisible Loads (AILs) by sea; and • the landscape proposals, detailing how the land around Sizewell C would be restored following construction.
	Construction phase	<p>Main development site – construction phase (refer to Section 7): Whilst EDF Energy is seeking views on all aspects of its proposals, it is particularly seeking views those components where there are options or changes since the Stage 1 consultation, namely:</p> <ul style="list-style-type: none"> • the provision of on-site spoil/stockpile arrangements using a ‘borrow pit’, for which there are three potential siting options: <ul style="list-style-type: none"> – Option 1: Fields 1 and 2; or – Option 2: Fields 2 and 3; or – Option 3: Fields 3 and 4. • marine delivery solutions are proposed in order to accept bulk construction materials, equipment and Abnormal Indivisible Loads (AILs) to the site: <ul style="list-style-type: none"> – Option 1: a full jetty; or – Option 2: a slim jetty; or – Option 3: a beach landing facility. • Land east of the Eastbridge Industrial Estate may be used for the following uses: <ul style="list-style-type: none"> – Option 1: for construction and caravan accommodation purposes, as well as provision for a new rail terminal as an alternative to the green rail route; or – Option 2: if the green rail route is selected, use for construction and caravan accommodation purposes only. • an accommodation campus is proposed and there are three potential layout options: <ul style="list-style-type: none"> – Option 1: campus buildings both east and west of Eastbridge Road, with sports fields on the western land parcel; or – Option 2(i): campus buildings to the east of Eastbridge Road, with sports fields on the western land parcel; or – Option 2(ii): campus buildings to the east of Eastbridge Road, with sports fields to be located off-site in a location to be identified.

Figure 4.1 Overview of proposals (continued)

Off-site Associated Developments

Rail (refer to **Section 8**): EDF Energy is particularly seeking views on: (a) the rationale for site selection to date; and (b) which option is favoured by stakeholders:

- the green rail route that would enable deliveries directly into the main development site; OR
- land to the east of Eastlands Industrial Estate, comprising a new rail terminal as well as land for construction and caravan accommodation purposes.

This would be in addition to a new facility on land south of King George’s Avenue (known as Sizewell Halt) in the early years before a new terminal at either land to the east of Eastlands Industrial Estate or within the main development site is in place.

Northern park and ride (refer to **Section 9**): EDF Energy is particularly seeking views on: its rationale for its site selection to date, whereby the Darsham site is EDF Energy’s preferred proposal; and the masterplan and outputs of the preliminary environmental information.

Southern park and ride (refer to **Section 10**): EDF Energy is particularly seeking views on: its rationale for its site selection to date, whereby the Wickham Market site is EDF Energy’s preferred proposal; and the masterplan and outputs of the preliminary environmental information.

Highway Improvements (refer to **Section 11**): EDF Energy is particularly seeking views on:

(a) the options for works along the A12:

- No change, whereby no change would be made to the Farnham bend, the Sizewell C traffic would simply use the A12 through Farnham as it exists at present; or
- Farnham bend road widening, comprising the demolition of a property to create a widening of the bend with associated landscaping; or
- Farnham bypass (also known as the one village bypass), comprising a single lane carriageway and associated works around the village of Farnham; or
- Stratford St Andrew and Farnham bypass (also known as the two-village bypass), comprising a single lane carriageway and associated works around the villages of Stratford St Andrew and Farnham.

(b) the scope of works proposed along the B1122, which comprise:

- an improvement to the junction of the B1122 with the A12 at Yoxford - either a roundabout or a signalised junction;
- speed limit reductions on various sections of the B1122;
- an improvement of the B1122 to the west of the junction with Mill Street for visibility purposes;
- options for enhancing the pedestrian environment in Theberton, through the creation of a new footpath near Pump Cottages and extending the footpath near Ivy Cottages; and
- an improvement to the alignment of the B1122 between Theberton and the Sizewell C construction site entrance to improve forward visibility.

The structure of this section is as follows:

- **Section 4.2** describes how the Project would be delivered, as described in full in **Sections 5 Socio-economics** and **6 Transport**;
- **Section 4.3** provides an overview of the permanent and temporary development within the Sizewell C main development site, as described in full in **Section 7 Main Development Site**;
- **Section 4.4** provides an overview of the off-site associated developments, as described in full in **Sections 8 – 11**;
- **Section 4.5** describes how EDF Energy would deal with any significant effect, in line with its Vision to mitigate ‘where practical and appropriate in a way which is

environmentally responsible and sensitive both to the needs of the community and to the strategies of the relevant authorities’.

4.2. Project delivery

a) People

4.2.1. EDF Energy’s objective is to ensure that any significant adverse local economic or social impacts are limited or mitigated, whilst optimising local benefits that directly arise from the construction and operation of the power station. Therefore, the socio-economics strategy is being developed based on the following principles:

- to work with partners to provide a high-quality working and living environment for the construction and operational workforce;
- to invest in a range of initiatives that optimise the potential for jobs related to the construction and operation of Sizewell C to benefit local residents;
- to commit to a range of initiatives to ensure that local businesses can benefit from the economic activity generated by the construction and operation of Sizewell C;
- to strike a balance which seeks to optimise the benefits that local facilities, amenities and services could gain from the increased activity generated by all phases of the Project, whilst mitigating any significant adverse effects that might arise from that activity; and
- to impose and enforce a Code of Conduct on the Sizewell C workforce and seek to beneficially assimilate the activity generated by the Project with the local community.

4.2.2. At peak, this Project would be one of the largest construction projects in the UK and would need a peak workforce which is estimated at 5,600. EDF Energy and its contractors would try to recruit as many local people for the construction phase as possible. In order to facilitate this, EDF Energy will work with relevant stakeholders to prepare a skills, education and employment strategy, which would include measures to boost local skills and a brokerage that would help place trained people into suitable roles.

4.2.3. A proportion of the construction workforce would require skills that are not available in large enough quantities amongst the existing population of Suffolk and the surrounding counties. It is anticipated that at peak there would be up to 3,600 non-home-based workers who would require temporary accommodation in the area around the main development site.

4.2.4. EDF Energy's approach to accommodation aims to strike a balance between using a range of different types of existing accommodation in the area and a purpose-built accommodation campus in order to make sure that the local community derives economic benefits from worker spend in the area, while not causing negative effects on accommodation capacity, affordability, the highway network and community cohesion.

4.2.5. Details of EDF Energy's proposals for an on-site accommodation campus, which is capable of accommodating up to 2,400 workers, are set out in **Section 7 Main Development Site**. The principles for providing a single, on-site accommodation campus are detailed in **Section**

5 Socio-economics. The remaining non-home-based workforce is likely to look for temporary accommodation in a range of different sectors, depending on their job, skills and contract term. Some would prefer tourism accommodation (including serviced and self-catering), some would look for short-term private-rented accommodation, whilst others would buy a home in the area. It is anticipated that EDF Energy would set-up an accommodation office to provide a signposting service to the workforce. In this way EDF Energy would help local providers to benefit from short-term rentals, whilst providing a flexible and responsive approach to managing potential adverse effects.

4.2.6. EDF Energy would ensure high standards of behaviour both on-site and in the community, managed via a Code of Conduct that all workers would be required to sign.

4.2.7. EDF Energy would also develop a supply chain strategy that would aim to place significant contracts with local businesses. One way that EDF Energy is currently facilitating this is by providing funding to the Suffolk Chamber of Commerce, which is helping local companies get ready for the opportunity via the Sizewell C supply chain portal.

4.2.8. EDF Energy has also identified the other matters that it will assess and consult upon prior to submission of its application, which will include:

- potential effects on key public services (e.g. school places, GPs, police and emergency services);
- a Health Impact Assessment;
- potential effects on tourism;
- potential effects of the off-site associated developments, such as the park and ride facilities; and
- potential effects on individual communities, including but not limited to Leiston, Theberton and Eastbridge once the full range of potential impacts are identified.

4.2.9. Refer to **Section 5 Socio-economics** for further details.

b) Movement of people and material

4.2.10. EDF Energy's vision is to deliver a Project that limits adverse transport effects on the environment and local communities through mitigation, where reasonably practicable, in advance of those impacts being felt.

4.2.11. The construction of Sizewell C would involve the daily movement of large numbers of construction workers as well

as the movement of large amounts of building materials and equipment. In developing the transport strategy for Sizewell C, EDF Energy has sought to take account of the sensitivity of the local highway network in the development and design of its proposals. EDF Energy has taken opportunities to limit the traffic and traffic-related effects of moving goods and people using non-road based transport where feasible and through careful siting and design of proposals. These principles have guided the transport proposals, in accordance with EDF Energy's wider Vision and objectives for the Project (as described in **Section 2 Vision and objectives**).

4.2.12. EDF Energy continues to develop the measures set out in its Stage 1 consultation in terms of managing and reducing the daily traffic associated with the movement of the construction workforce to and from the main development site during the peak years of construction. Whilst there were many and varied views on the specific site options presented in the Stage 1 consultation, and queries around how some of the proposals would work in practice, the principle of these measures received support and were recognised as having the potential to reduce the traffic impacts that would otherwise occur. These elements have, therefore, been programmed and are set out in more detail in this Stage 2 consultation, as follows:

- options for an on-site accommodation campus, helping to significantly reduce the number of workforce journeys through towns and villages close to the construction site;
- two park and ride developments, one for construction workers approaching Sizewell from the north on the A12 and the other for those approaching from the south on the A12;
- direct bus services operating from Ipswich and Lowestoft; and
- bus pick-up services for workers using rail services on the East Suffolk Line.

4.2.13. EDF Energy's overall strategy for managing materials and freight movements is as follows:

- wherever practical and cost-effective, EDF Energy and its contractors would seek to reduce the volume of materials that require movement off-site, either through the re-use of excavated material as fill, landscaping or via the deployment of a borrow pit to source material on-site as well as to deposit other material (refer to **Section 7 Main Development Site**);

- where materials must be imported to or exported from the main development site, to move bulk materials and containerised goods by sea or by rail wherever feasible and practical;
- where movement of materials by road remains necessary, to reduce local impacts via the use of agreed routes for HGV movements and systems which can monitor, manage and control the number and timing of HGV movements to the main development site; to control where practical the particular impacts of HGV movements.

4.2.14. Refer to **Section 6 Transport** for further details on the transport strategy for the Project.

4.3. Main development site

4.3.1. The main development site is located in the vicinity of the existing Sizewell power station complex and is defined as the land required for the permanent power station together with the land needed on a temporary basis for construction of Sizewell C.

a) Permanent development

4.3.2. The land required for the permanent power station is located immediately to the north of the existing Sizewell power station complex. **Figure 4.2** illustrates the masterplan for the permanent, operational phase of the Project.

4.3.3. The UK EPR™ reactor unit is a development of existing nuclear technology based on an evolution of the pressurised water reactor design. Many of the components which comprise the permanent development are established elements of the design and remain unchanged from those described in the Stage 1 consultation. These components, which would be sited on the main power station platform alongside the two UK EPR™ units would include: reactor buildings and associated buildings including emergency diesel generators (the nuclear island); turbine halls and electrical buildings (the conventional island); and cooling water pumphouses and associated buildings. Refer to **Section 7 Main Development Site** for further information.

4.3.4. Other facilities that are required at the Sizewell C site to support the operation of the two UK EPR™ include: fuel and waste storage facilities, including interim storage for radioactive waste and spent fuel; internal roads; ancillary, office and storage facilities; and a National Grid 400kV substation, plus the removal and relocation of one National Grid pylon and the associated realignment of overhead lines.

4.3.5. In addition, other permanent development is required away from the main platform to support the operation of the power station, which includes:

- cooling water infrastructure (including cooling water tunnels extending approximately 3km out to sea, intake and outfall headworks on the seabed, and measures to mitigate the impingement and entrainment of marine organisms);
- an access road to join the B1122 and related junction arrangements (comprising retention of the roundabout proposed for the construction phase);
- a crossing of the Sizewell Marshes Site of Special Scientific Interest (SSSI) connecting the power station to the new access road to the north;
- car parking and some ancillary buildings;

- flood defence and coastal protection measures (sea defences);
- a beach landing facility to receive occasional deliveries of Abnormal Indivisible Loads (AILs) by sea throughout the power station’s operational life; and
- landscaping of the areas to be restored following their use during construction.

b) Temporary development

4.3.6. Figure 4.3 illustrates the circa 300ha of land required to support the construction phase, with specific areas identified for specific uses as follows:

- construction working areas: laydown areas, workshops and storage;

Figure 4.2 Operational masterplan



- an induction centre and site offices;
- temporary structures, including a concrete batching plant;
- management of spoil/stockpile arrangements, including the potential sourcing of construction fill materials from an on-site 'borrow pit';
- a crossing between the power station and adjacent construction areas;
- a temporary jetty for the transport of bulk construction materials, equipment and AILs by sea;
- construction works areas on the beach for the installation of sea defences;
- construction roads, fencing, lighting and security features;
- site access arrangements and coach, lorry and car parking;
- water management zones;
- utilities and services infrastructure;
- landscape bunds and screening; and
- an accommodation campus.

4.3.7. EDF Energy has sought to minimise land-take, whilst ensuring sufficient land is provided to achieve safe and efficient working practices and enabling flexibility to respond to environmental considerations. Similarly, the siting of the various uses has been driven by the need to strike a balance between considerations of project efficiency and programme, whilst recognising the sensitive nature of the site and its surrounds, much of which lies within the AONB. Therefore, EDF Energy has sought to control the construction activities, where possible, through measures including:

- siting construction activities which have the potential to cause disturbance away from residential properties;
- avoiding and minimising potential impacts on sensitive features (e.g the most sensitive landscapes within the Area of Outstanding Natural Beauty (AONB)) and minimising land-take (including the foreshore which forms part of the AONB and Suffolk Heritage Coast, and other nationally designated sites);
- minimising disturbance to sensitive features (e.g. woodlands, significant hedgerows, tree belts and ecological features);

Figure 4.3 Construction masterplan (larger plan available at Figure 7.27)



- being as near as possible to the main platform and access roads to reduce the logistical challenges of moving workers and materials, and supporting construction activity.

c) Sizewell B relocated facilities

4.3.8. Since the Stage 1 consultation Nuclear Generation Limited (NGL), the owner of the Sizewell B Station, has stated its intention to relocate the Sizewell B facilities that are currently on the Sizewell C site to within its own Sizewell B estate. The scheme would create a more concentrated development of the Sizewell B site, whilst providing upgraded and improved facilities which are fit-for-purpose for staff and which would meet modern standards and requirements. The relocation of these Sizewell B facilities would also facilitate the use of the land on which they are currently located for the Sizewell C Project.

4.3.9. NGL intends to undertake these works, referred to as the Sizewell B Relocated Facilities Project, in advance of development consent being secured to construct and operate a new nuclear power station at Sizewell C. In doing so the Sizewell B Relocated Facilities Project would facilitate the Government's policy objective of more rapid development of new nuclear power, by ensuring earlier delivery of Sizewell C than if the relocation proposals were included as part of the application for development consent for the Sizewell C Project. Therefore, no separate provision is currently intended to be made within the Sizewell C application for development consent for these works. However, in the event that the Sizewell B station does not secure planning permission for those works, EDF Energy would seek consent for the necessary works within its application for development consent.

4.3.10. NGL is currently developing its proposals ahead of submitting a planning application to the local planning authority. NGL will consult on its proposals ahead of submitting its application and will have regard to any feedback received.

4.4. Off-site associated development

4.4.1. To construct Sizewell C, EDF Energy would also need to use additional land for off-site associated developments to support the movement of materials and staff to and from the main development site. The scale and distribution of these facilities have been informed by EDF Energy's socio-economic and transport strategies (set out in **Sections 5** and **6** respectively).

4.4.2. It is likely that the construction of the off-site associated developments would be undertaken early

in the construction phase. Once these facilities are no longer required to support the construction of Sizewell C the facilities would be removed and the land restored (with the exception of the highway improvements).

4.4.3. Since the Stage 1 consultation EDF Energy has given further consideration to the potential off-site associated developments. In some cases, a preferred option has been identified and will be taken forward for further assessment, whereas for other proposals EDF Energy is at an early stage and options are still being investigated. Refer to **Figure 4.1**.

a) Rail infrastructure

4.4.4. EDF Energy is exploring the use of rail during the construction phase of the Project in order to remove significant numbers of HGVs from the regional and local road network, with up to five rail deliveries per day.

4.4.5. As part of the Stage 1 consultation, EDF Energy presented the following options for using rail to transport freight to and from the main development site during the construction phase:

- three options for extending the Saxmundham - Leiston branch line to a new rail terminal to be located within the Sizewell C construction site boundary:
 - blue rail extension route, or
 - green rail extension route, or
 - red rail extension route; or
- a new rail terminal to the east of Eastlands Industrial Estate, with onwards transfer of materials by HGV to the main development site.

4.4.6. Since the Stage 1 consultation, further work has been conducted on the design of each option, as well as assessing each option against the following considerations: consultation responses; environmental considerations; construction and operational requirements; and planning policy. None of the options clearly meet all of the Project requirements while avoiding all environmental impacts of potential concern. However, on balance, two options are considered to be the principal alternatives:

- the construction of a temporary extension to the rail-line direct into a rail terminal in the main development site, allowing rail freight to be brought directly and efficiently to its point of use (known as the green rail route). This temporary extension would branch off of the existing Saxmundham and Leiston line to the west of Leiston (**Figure 4.4**); and

- the use of an existing line between Saxmundham and Leiston, and construction of a new rail terminal on land east of the Eastlands Industrial Estate, where there would be space for unloading and storing rail freight for onward delivery to the main development site by HGV (Figure 4.5).

4.4.7. During the period when the new rail provision is under construction the existing Leiston railhead south of King George’s Avenue (known as Sizewell Halt) would be used. However, it is not possible to use this for the duration of the construction phase given its limited size, which means that only one train at a time can be unloaded, and the limited space for the installation of unloading equipment or the storage of materials.

4.4.8. In addition, EDF Energy is discussing with Network Rail the requirement for upgrades to the saxmundham-

Leiston branchline and the East Suffolk line to support the rail freight requirements of the Project

Refer to **Section 8 Rail** for further details.

b) Park and ride facilities

4.4.9. Park and ride facilities would play an important role in reducing the amount of additional traffic generated by the construction workforce on local roads and through local villages. Two park and ride facilities are proposed - one for construction workers approaching Sizewell from the north on the A12 and the other for those approaching from the south on the A12.

Figure 4.4 Green rail route



Figure 4.5 Terminal on land east Eastlands Industrial Estate

i. Northern park and ride

4.4.10. At the Stage 1 consultation, EDF Energy presented three site options for the northern park and ride site:

- Option 1 (Yoxford Road);
- Option 2 (Darsham); and
- Option 3 (A12/A144 Junction).

4.4.11. Since the Stage 1 consultation each option has been assessed against the following considerations: consultation responses; environmental considerations; construction and operational requirements; and planning policy.

4.4.12. EDF Energy has selected Option 2 (Darsham) (refer to **Figure 4.6**) as its preferred northern park and ride site

as it is considered to be preferable over the other two site options in terms of consultation feedback, transport and socio-economics. Option 3 (A12/A144 Junction) is being held in reserve, but it would only be developed if the Darsham site proved to be unsuitable in the light of feedback to consultations or further environmental or technical studies.

4.4.13. It is envisaged that the facility would include: car parking areas for around 1,000 spaces; minibuses and motorcycle parking; cycling stands and shelter; a bus terminus and parking; perimeter security fencing and lighting; a welfare building; a security entrance hut; as well as roadways, footways, landscaping, water management areas and drainage infrastructure.

4.4.14. Refer to **Section 9 Northern Park and Ride** for further details.

Figure 4.6 Northern park and ride masterplan



ii. Southern park and ride

4.4.15. At the Stage 1 consultation, EDF Energy presented three site options for the southern park and ride site:

- Option 1 (Wickham Market) – identified as the preferred option at Stage 1;
- Option 2 (Woodbridge); and
- Option 3 (Potash Corner).

4.4.16. Since the Stage 1 consultation each option has been assessed against the following considerations: consultation responses; environmental considerations; construction and operational requirements; and planning policy.

4.4.17. EDF Energy has selected Option 1 (Wickham Market) as its preferred site for the southern park and ride as it is considered to be preferable over the other two site options in terms of consultation feedback, operational considerations, transport and planning policy. However, this preference was subject to the outcome of further archaeological assessment.

4.4.18. Geophysical surveys suggested that extensive archaeological remains associated with the Roman ‘small town’ of Hacheston extend across the Option 1 (Wickham Market) site. Therefore, the area of investigation was broadened to include land immediately adjoining the site consulted on at Stage 1. Additional geophysical surveys suggested that the potential for archaeological remains is lower in this location, being confined to the southern part of the field only. The revised Wickham Market site

was assessed against all of the site selection criteria and it was considered that, with the exception of clear differences in archaeological constraints, the conclusions of the assessment of Option 1 (Wickham Market) generally applied to the revised site, given the similar locational and physical characteristics of the sites. Therefore Option 1 (Wickham Market), albeit with a revised siting, is EDF Energy’s preferred southern park and ride site.

4.4.19. It is envisaged that the facility would include: car parking areas for around 900 spaces; a postal consolidation facility; an area at the north of the site for a Traffic Incident Management Area to enable HGVs to be held in the event of an emergency; minibus and motorcycle parking; cycling stands and shelter; bus terminus and parking; perimeter security fencing and lighting; a welfare building; a security entrance hut; as well as roadways, footways, landscaping, water management areas and drainage infrastructure.

4.4.20. Refer to **Section 10 Southern Park and Ride** for further details.

c) Highway improvements

4.4.21. Since the Stage 1 consultation EDF Energy has continued to undertake transport modelling work (refer to **Section 6 Transport**). This includes predicted traffic changes and impacts arising from the Sizewell C construction traffic on the A12 and B1122. A series of measures are proposed to address these changes and impacts.

4.4.22. Transport modelling work will continue to be undertaken prior to the next stage of consultation. If that work identifies the potential for any other significant adverse effects which are not currently understood, mitigation will be considered and consulted upon at a subsequent stage of consultation, prior to submission of an application for development consent.

Figure 4.7 Southern park and ride masterplan



i. A12

4.4.23. At the Stage 1 consultation EDF Energy sought views on proposals for potential road or junction improvements to alleviate potential transport impacts. The improvements were presented in three categories:

- Farnham bend;
- Road traffic impacts on the B1122;
- Other road traffic impacts from Sizewell C.

4.4.24. At that stage preliminary modelling identified the A12 between Ipswich and Lowestoft as the main corridor for the majority of Sizewell C traffic. The modelling suggested that the total traffic impact would be in the region of a 5-15% increase to all-vehicle daily traffic flows at the point of peak construction.

4.4.25. Since the Stage 1 consultation, EDF Energy has continued to assess the traffic effects of the Project on Farnham and the stretch of the A12 known locally as the 'four villages', having regard to feedback received to consultation. Consistent with EDF Energy's initial suggestions set out in the Stage 1 consultation, this work has identified that:

- There has been a long standing public concern that something should be done about the existing traffic levels on the A12 where the road runs through the four villages. Traffic associated with Sizewell C would further increase traffic levels along the A12.
- There are no technical highway capacity issues with the A12 in three of the villages but there may be a capacity issue at Farnham bend due to the narrowing of the road compounded by the tight radius of the bend in the immediate proximity of adjacent properties. However, detailed micro-simulation modelling suggests that the main effect of the bend is to slow traffic.
- There is a clear amenity issue already in Farnham caused by the proximity of traffic to the frontage properties and by the tight configuration of the bend.

4.4.26. In light of the above, EDF Energy considers that the impact of Sizewell C traffic would not be sufficient to justify a bypass of the four villages, as requested by some. However, in giving detailed consideration to more local issues and, particularly, issues arising from the bend at Farnham, there may be a case for the provision of mitigation at Farnham. This case arises from the recognition that Sizewell C would exacerbate an existing problem which results from the configuration of the A12 in Farnham.

4.4.27. Determining the appropriate approach is not straight forward; and EDF Energy recognises the importance of ongoing consultation with the highway and planning authorities, other statutory bodies, and the local community before settling on a preferred approach for inclusion in its application for development consent. To this end, this Stage 2 consultation seeks views on four options (refer to Sections 11.5–11.8), which can be summarised as follows:

- Option 1 no change;
- Option 2 Farnham bend road widening to create a widening of the bend (refer to **Figure 4.8**);
- Option 3 Farnham bypass (also known as the one village bypass) of which there are two access options (refer to **Figure 4.9**);
- Option 4 Stratford St Andrew and Farnham bypass (also known as the two-village bypass) (refer to **Figure 4.10**).

Figure 4.8 Farnham bend road widening



4.4.28. EDF Energy has developed some thoughts on the appropriate approach which are explained in **Section 11 Highway Improvements**. It is important to consider the principles set out in national planning policy when deciding which option would ultimately be pursued through the application for development consent. However, EDF Energy has not reached a firm conclusion and it will ensure that any decision is informed by further technical work and by the results of this consultation.

ii. B1122

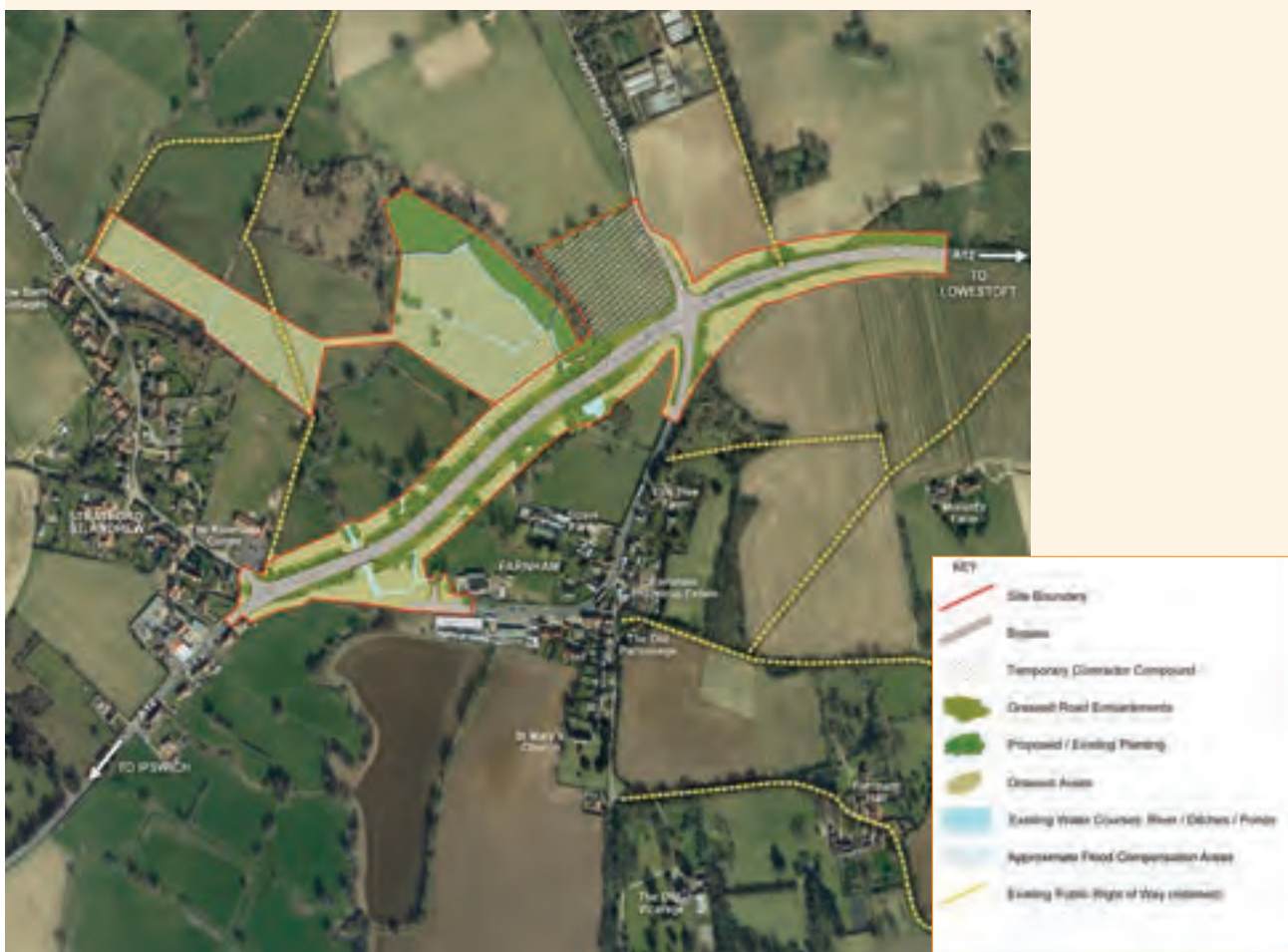
4.4.29. At the Stage 1 consultation, EDF Energy proposed that the B1122 would be the designated HGV route for traffic between the A12 and the Sizewell C main development site. Whilst it is recognised that Sizewell C traffic would be significant relative to current flows,

and proportionally a greater increase on the B1122 than on the A12 or most other local roads, the level of construction traffic is not likely to cause any capacity or congestion issues along most of the route. However, it was acknowledged at the Stage 1 consultation that the junction of the A12 with the B1122 at Yoxford is likely to require improvements to ensure a smooth flow of traffic, whilst avoiding disruption to flows on the A12.

4.4.30. EDF Energy also stated that it would consult with residents of Theberton to discuss the form of mitigation which might be most appropriate to their circumstances and the impacts of the Project.

4.4.31. Responses to the Stage 1 consultation consistently raised concerns about the impacts of increased levels of traffic along the B1122. Since the Stage 1 consultation, EDF

Figure 4.9 Farnham bypass (also known as the one village bypass) (Option 2a)



Energy has undertaken further traffic modelling work and identified that the following works would help to alleviate some of the concerns (as illustrated on **Figure 4.11**):

- an improvement to the junction of the B1122 with the A12 at Yoxford, through the development of either a roundabout or a signalised junction with related works to the junction (refer to **Section 11** for details);
- speed limit reductions on various sections of the B1122, namely between: where the B1122 crosses the East Suffolk Line and Middleton Moor; Middleton Moor and Theberton; and Theberton and the entrance to the construction site;
- an improvement of the B1122 to the west of the junction with Mill Street, by reducing the road level west of the junction;
- options for enhancing the pedestrian environment in Theberton, through the creation of a new footpath near Pump Cottages and extending the footpath near Ivy Cottages; and
- an improvement to the alignment of the B1122 between Theberton and the Sizewell C construction site entrance to improve forward visibility.

4.4.32. Refer to **Section 11 Highway Improvements** for further details.

Figure 4.10 Stratford St Andrew and Farnham bypass (also known as the two-village bypass)



Figure 4.11 Proposed improvements along B1122



4.5. Limiting effects

4.5.1. EDF Energy’s Vision for the Project (refer to **Section 2 Vision and Objectives**) states:

“...In recognition of the environmental sensitivity of the location, EDF Energy will ensure that the power station is designed and delivered in such a way as to limit any adverse effects on the environment and on local communities as far as is reasonably practical. Any significant adverse effects of the construction, operation or decommissioning of the power station shall be mitigated where practical and appropriate in a way which is environmentally responsible and sensitive both to the needs of the community and to the strategies of the relevant authorities.”

4.5.2. EDF Energy will continue to develop its strategies and proposals with the aim of avoiding significant adverse effects where possible, and where not possible to minimise, mitigate or compensate those impacts arising. Adhering to the Vision, whilst meeting the policy objective, is at the forefront of EDF Energy’s intention. In the following sections we identify, where necessary and possible at this stage, the measures that would be adopted in order to achieve our intention.

4.5.3. For example, EDF Energy continues to develop its Aldhurst Farm Habitat Creation Scheme to ensure that habitats are created and established before any land-take from the Site of Special Scientific Interest (SSSI) would occur should Sizewell C be constructed. The approximately 6ha of wetland habitat, together with a mosaic of neutral and acidic grassland, heathland, scrub and scattered trees across the wider 67ha site, has been designed to compensate for the potential loss of reedbed and lowland ditch habitat, and their associated invertebrate and rare vascular plant assemblages. As well as providing high-quality habitat for a diversity of wildlife, the works would also strengthen the link between Leiston, the Suffolk Coast and Heath Area of Outstanding Natural Beauty (AONB) and the Heritage

Coast. EDF Energy is also exploring opportunities for public access and quiet recreational use of this land as part of its wider Sizewell C amenity and recreation strategy.

4.5.4. In terms of the main development site, other measures have either been included within the proposals (e.g. the provision for marine deliveries to minimise the amount of materials being transported to and from the site by road) or in addition to the proposals (e.g. the establishment of a landscape scheme to minimise landscape and visual effects). **Section 7 Main Development Site** provides more details.

4.5.5. All of the off-site associated developments are mitigation measures in themselves, designed to minimise or mitigate impacts that would arise from the construction of Sizewell C. For example, the park and ride facilities would reduce the number of Sizewell C vehicle movements, thereby reducing the impact of the Project on the local road network. However, the proposed infrastructure would itself give rise to some environmental impacts. Those potential impacts and related mitigation measures are described in the site specific sections (**Sections 8 – 11**).

4.5.6. However, some of the potential impacts would fall across a more broad area and therefore could not be addressed through the site specific measures. These potential impacts principally relate to amenity issues (e.g. noise or air quality). EDF Energy's assessment of impacts on residential amenity is at an early stage.

4.5.7. EDF Energy maintains its commitment given at the Stage 1 consultation, whereby those properties and their inhabitants that would experience a significant amenity issue as a result of the construction phase of the Project would be offered mitigation that is most appropriate to their circumstances to address that impact. EDF Energy will contact those who could be significantly impacted ahead of submitting its application for development consent, setting out how it intends to address the predicted impact and seek feedback from those stakeholders.

4.5.8. Further details on all significant adverse impacts that are predicted to arise as a result of the Project will be identified. At that stage EDF Energy will also identify how it intends to either minimise, mitigate or compensate each of those impacts. All stakeholders will be consulted on the impacts and measures to address those impacts via a formal stage of consultation prior to an application for development consent being submitted. EDF Energy will have regard to the feedback in finalising its proposals and application documents ahead of submission of an application.

5. Socio-Economics

5.1. Introduction

5.1.1. The construction of Sizewell C would make a significant contribution to the Government’s energy strategy to support the security of the UK’s economic future, as well as producing a long-term boost for the local economy through increased employment and skills provision.

5.1.2. There would be a large increase in local employment and business opportunities during the construction phase and a long-term legacy of 900 new jobs once the station is operational. EDF Energy recognises that there are significant opportunities to maximise and support the uptake of local socio-economic benefits through targeted enhancement, initiatives and support, which define the aim and objectives of this study. However, EDF Energy recognises that there is also the potential for the Project to cause local disruption. This could have adverse socio-economic impacts, prior to mitigation.

5.1.3. This section sets out the work undertaken since the Stage 1 consultation, through engagement with the local authorities and other stakeholders on potential socio-economic effects of the Project. The socio-economic effects have been split into two parts within this section:

- potential effects of the Project on people and the economy (**Section 5.2 to Section 5.7**), which includes jobs, education, skills, supply chain and effects on other sectors including tourism, the community and public services; and
- potential effects of the Project on accommodation (**Section 5.8 to Section 5.13**), which includes effects of the Project’s construction workforce on accommodation in the tourist and private-rented sectors, and the wider housing market including housing need.

5.1.4. The prediction, assessment, monitoring and mitigation (or optimisation) of socio-economic effects related to Nationally Significant Infrastructure Projects (NSIPs) is an iterative process. It relies on a process of project design influenced by feedback from consultation and on going engagement with relevant stakeholders in a local area. Through this iterative process, EDF Energy is able to present the Project’s development options, socio-economic baseline position, potential areas of significant likely effects, and emerging mitigation and enhancement strategies to the public, local authorities and other interested parties for feedback.

a) National infrastructure

5.1.5. The National Infrastructure Plan (Ref. 5.1) and National Policy Statement (NPS) for Nuclear Power Generation (NPS EN-6) (Ref. 1.2) make clear the importance of providing new nuclear generating capacity, creating a highly skilled construction workforce that can then help build other major infrastructure projects that the UK requires and, through the supply chain, support advanced manufacturing sectors to improve productivity.

b) Aims and objectives

5.1.6. The specific socio-economic strategies for the Project reflect EDF Energy’s objective to ensure that the Project limits any significant adverse local economic and social impacts, whilst optimising local benefits that directly arise from the construction and operation of the power station (refer to **Section 2 Vision and Objectives**). The strategies have regard to the following principles:

- to work with partners, including Tier 1 Contractors and Trade Unions, to provide a high-quality working and living environment for the construction and operational workforce;
- to invest in a range of initiatives to optimise the potential for jobs directly and indirectly related to the construction and operation of Sizewell C, to benefit local residents both through employment and gaining skills;
- to commit to a range of initiatives to ensure that local businesses can benefit from the economic activity generated by the construction and operation of Sizewell C;
- to strike a balance which seeks to optimise the benefits which local facilities, amenities and services could gain from the increased activity generated by all phases of the Project, whilst mitigating any significant adverse effects that might arise from that activity; and
- to adopt and enforce a Code of Conduct on the Sizewell C workforce and seek to beneficially assimilate the activity generated by the Project with the local community.

c) Purpose and structure

5.1.7. The NPS EN-1 (Ref. 1.1) and NPS EN-6 require that socio-economic effects of the Project are assessed. This may include, but is not limited to:

- the creation of jobs and training opportunities;

- the provision of additional local services and improvements to local infrastructure, including the provision of educational and visitor facilities;
- effects on tourism;
- the impact of workers during the construction and operational phases on population dynamics and demand for services and facilities;
- social cohesion, community impacts and equality impacts; and
- cumulative effects.

5.1.8. Since the Stage 1 consultation, EDF Energy has been working with the local authorities and other bodies to set-up a structure within which the effects of the Project on socio-economics is discussed, analysed and eventually assessed and managed. **Figure 5.1** illustrates this and sets out the framework for the workstream in general, explained in detail throughout this section.

5.1.9. This section is intended to:

- provide an overview on the progress of the socio-economic workstream, including existing and new baseline data, and work to date with stakeholders;
- identify the potential types and broad areas of effects related to socio-economics;
- describe how EDF Energy and other stakeholders are working together on agreeing the baseline and methodology, identifying specific areas of impact and the most effective ways to reduce or mitigate potential significant adverse effects and optimise beneficial effects; and
- provide an overview of the emerging approach to enable consultees to provide informed feedback on the design, baseline, methodology, effects and direction of any mitigation/enhancements.

Figure 5.1 Elements of the socio-economic workstream



5.1.10. The broad socio-economic assessment covers, for example, the effects on communities, community facilities and public services, skills, education, employment, other important local sectors (predominantly tourism and agriculture), existing businesses, and how the Project can work with the nuclear and construction supply chains. These issues are covered in the early parts of this section (**Section 5.2** to **Section 5.7**).

5.1.11. EDF Energy also recognises that the Project has the potential to cause effects on the accommodation market during the construction phase. This is especially at the peak of construction when a workforce of around 5,600 people (and 500 staff working at the offsite associated developments and accommodation campus, once those sites are operational) is likely to be working at the main development site. Some of these workers would be drawn from the local area, but others would travel from outside the area and look for a range of short to medium and long-term accommodation while they are working on the Project.

5.1.12. The later parts of this section (**Section 5.8** to **Section 5.13**) look specifically at these accommodation effects, including the rationale for an accommodation campus, potential effects of use of the private-rented and tourist sectors by the construction workforce, and measures EDF Energy and the local authorities are working on to enhance positive effects and identify and monitor any significant adverse effects and avoid or mitigate them.

d) Work to date and next steps

5.1.13. EDF Energy has been working on the technical aspects that drive the socio-economic effects of the Project. For example, this includes the size of the workforce, its characteristics and the physical infrastructure needed to deliver the construction phase.

5.1.14. This has led to the identification of a number of relevant baseline datasets. At this stage, the information in this section mainly relates to the labour market, the housing market and the economy, with a particular focus on the tourism sector. It covers aspects such as productivity and skills, the number and type of jobs in the study area, levels of unemployment, and the amount, affordability and availability of accommodation.

5.1.15. The remainder of the section sets out the new and updated information since the Stage 1 consultation for all of these topics.

5.1.16. Most of the baseline information is drawn from information published by the Office for National Statistics (ONS), but it has been supplemented with the knowledge of the local authorities and other stakeholders. As the Project progresses, and following feedback from this consultation, more information will be provided for a range of geographic areas. This will include the administrative boundaries of the local District councils, together with Suffolk, Norfolk and Essex County Councils and sub-district levels (i.e. town and parish councils). EDF Energy has also started to scope the next stages of work that will be undertaken prior to the submission of an application for development consent.

5.1.17. As the Project evolves, and the impact assessments are developed for related topics such as noise, landscape and visual, transport and air quality, more work on the community-related aspects of the Project will be undertaken. This will include the effects on community facilities and public services such as health and education, emergency services, community safety, amenity and severance from transport measures, and an assessment of in-combination effects for specific local communities. Engagement with relevant service providers has started and there will be more information provided through further consultation.

5.1.18. As part of this process, EDF Energy will continue to work with the local authorities and other organisations to identify any new or changing information. **Figure 5.2** outlines the process for the socio-economic workstream in respect of the consultation stages.

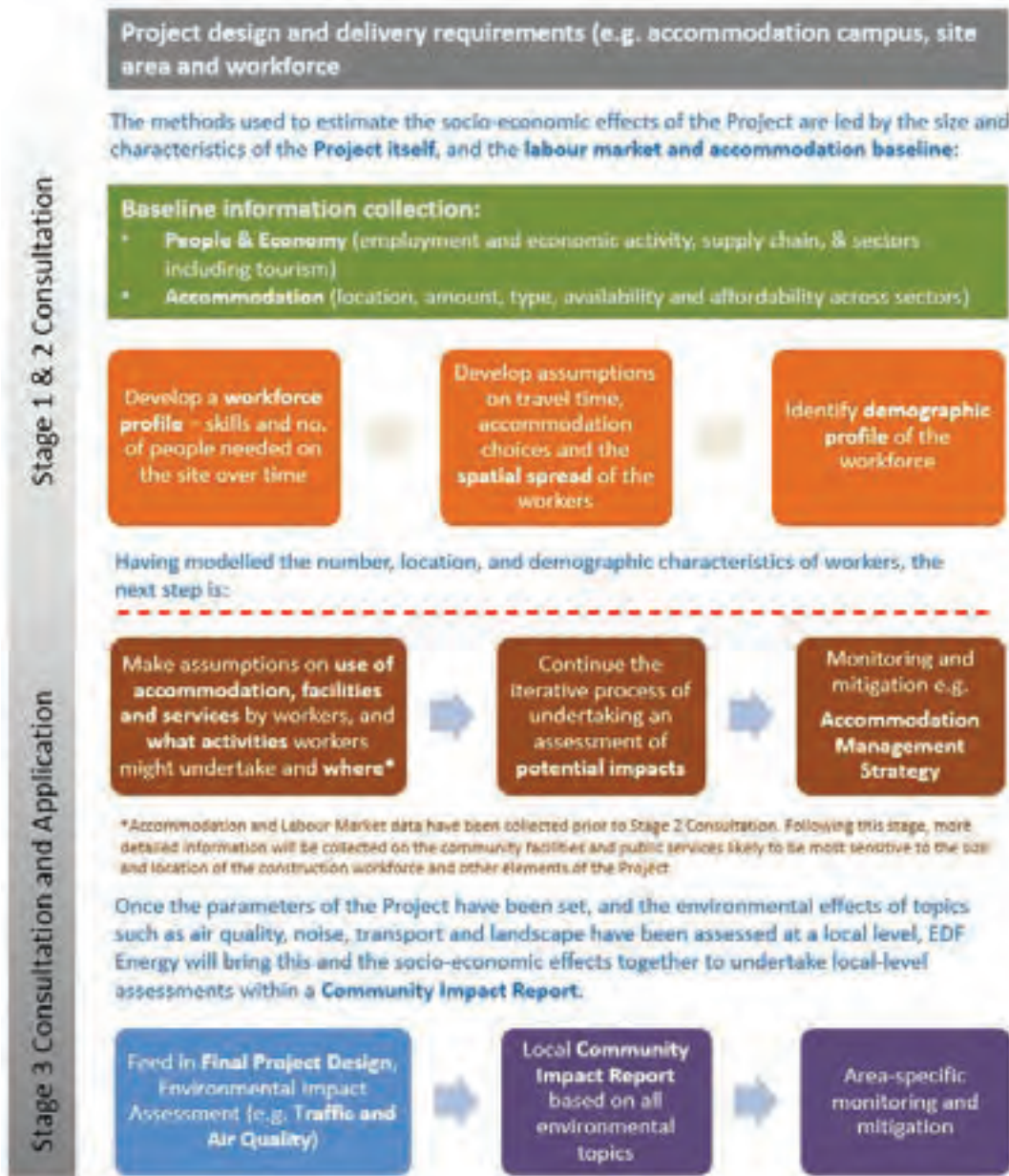
5.2. People and economy

a) Structure

5.2.1. This topic is structured as follows:

- **Section 5.2** introduces the section and highlights the responses to the Stage 1 consultation relevant to people and the economy, signposting to where these have been addressed in this document;
- **Section 5.3** describes the current position, including a summary of how work has been undertaken to define the baseline position;
- **Section 5.4** describes the proposals and assumptions that are relevant to socio-economics, including details of the size, location and characteristics of the workforce during construction on which an impact assessment can be based;

Figure 5.2 Consultation and the socio-economic workstream



- **Section 5.5** outlines the areas where effects and opportunities are considered most likely to arise, based on the size and characteristics of the workforce, and feedback from engagement with the local authorities;
- **Section 5.6** details how EDF Energy would ensure that the beneficial Project effects are optimised through an Economic Strategy, and outlines the approach to monitoring and mitigation of potential adverse impacts of the Project; and

- **Section 5.7** identifies the next steps for this workstream following this stage of consultation.

b) Stage 1 consultation

5.2.2. Table 5.1 summarises the responses received in terms of people and economy, and signposts to where in this document each response has been addressed.

Table 5.1 Summary of responses to Stage 1 consultation

Response to Stage 1 consultation	EDF Energy's approach/response
Skills and education	
<ul style="list-style-type: none"> • Work on the development and implementation of a workforce development strategy and education strategy. • Develop pathways to higher-skilled employment and up-skilling/re-skilling of the workforce. • Support Suffolk County Council's 'Raising the Bar' (Ref. 5.2) initiative. • Ensure an economic legacy beyond the construction phase. 	See Sections 5.5–5.6
Supply chain and local businesses	
<ul style="list-style-type: none"> • Continue working with local authorities and other bodies to provide opportunities for local businesses; stimulate the local supply chain and ensure economic legacy. • Undertake consultation with local business organisations. • Build on the Supply Chain Portal developed in partnership with the Suffolk Chamber of Commerce to optimise local supply chain opportunities. • Provide a local procurement presence or supply chain advisor. 	See Sections 5.5–5.6
Other sectors, tourism and visitor centre	
<ul style="list-style-type: none"> • Address the potential effect on the tourism sector and other sectors, which are recognised as strengths of the East of England and Suffolk. • Provide support for the visitor centre and address contributions to low carbon, Energy Coast and the AONB. 	See Sections 5.5
Social and community effects and benefits	
<ul style="list-style-type: none"> • Work on the development and implementation of a workforce development strategy and education strategy. • Develop pathways to higher-skilled employment and up-skilling/re-skilling of the workforce. • Support Suffolk County Council's 'Raising the Bar' (Ref. 5.2) initiative. • Ensure an economic legacy beyond the construction phase. 	See Sections 5.5–5.6

5.2.3. Since the Stage 1 consultation, EDF Energy has been working to review the comments received and address the issues, providing more information where possible. EDF Energy has:

- refined the estimate of the construction activities required over the construction phase;
- gathered more information on key local issues such as the state of the local economy and labour market, especially regarding people already living in the area and working in construction;
- explored, with Suffolk County Council, Suffolk Coastal District Council and tourism organisations, the strengths and sensitivities of the local tourism sector;
- considered existing provision of key public services that may also be used by Sizewell C construction workers or their families, such as schools, healthcare, and leisure facilities; and
- started discussions about ways to avoid or reduce the negative effects, whilst enhancing the benefits that would arise.

5.2.4. EDF Energy has also started to scope the next stages of work that will be undertaken, including:

- assessing the impacts on key public services, such as schools, local healthcare services, police and emergency services;
- undertaking a Health Impact Assessment (HIA);
- assessing potential negative and positive impacts on tourism;
- assessing the effects of the off-site associated developments, such as the park and ride facilities; and
- assessing the impacts on individual communities, including but not limited to Leiston, Theberton and Eastbridge, once the full range of likely effects is known.

5.3. Current position

5.3.1. This section describes information gathered about the economy and labour market in Suffolk and the area around Sizewell C.

5.3.2. EDF Energy has been working to build an understanding of the existing labour market and its characteristics in terms of size, skill level and economic

activity. This approach uses public datasets and desk-based research. It will allow EDF Energy to predict the potential effects of the Project, as a result of its construction workforce and supply chain, on people and the economy.

5.3.3. This section has been produced to update the information presented at the Stage 1 consultation. This section draws on datasets, including 2011 Census data (Ref. 5.3) released since the Stage 1 consultation, and has also been developed through engagement with local authorities.

a) Employment and construction jobs

5.3.4. Sizewell C would be one of the largest construction projects in the UK and would need a peak workforce of 5,600 people (and 500 staff working at the associated development sites once those sites are operational).

5.3.5. The labour market in Suffolk and its neighbouring counties is substantial and has performed well since the recession. Suffolk itself has around 300,000 jobs with a further 880,000 across Norfolk and Essex (Business Register and Employment Survey (BRES), 2014 (Ref. 5.4). Employment in all sectors in Suffolk has increased by 13,000 jobs since 2010 (around 5%) and employment in the construction sector has grown alongside this, although it is yet to reach pre-recession levels.

5.3.6. Table 5.2 shows that, according to 2011 Census data (Ref. 5.3), there are just over 130,000 residents of the three counties employed in construction. Of these, just under 30,000 are in Suffolk and just under 19,000 are in the four districts around Sizewell C.

5.3.7. The number of workers, their skills and qualifications determine how many are likely to be able to work at Sizewell C. EDF Energy is working with the local authorities, New Anglia Local Enterprise Partnership (NALEP), skills and education providers and industry skills/training bodies across Suffolk to develop a construction workforce development strategy.

5.3.8. An aspiration for this strategy is to focus on the quality of roles secured by local people. This would address one of the local authorities' key aspirations, which is that local people have the opportunity to secure high-skilled and well-paid roles within the Project. By understanding the local employment sector and the education and skills base that supports it, it is possible to explore both potential capacity and availability, as well as barriers limiting the potential uptake of employment opportunities. EDF Energy would then work with the local authorities to improve access to a range of employment and career opportunities through targeted initiatives and support.

Table 5.2 Employment in construction and related activities (Census, 2011)

Local authorities	Total Population	Residents employed in the construction sector (Census 2011 (Ref. 5.3), SIC 2007 Industrial Sections)
Suffolk Coastal	124,298	4,109
Waveney	115,254	4,551
Ipswich	133,384	5,269
Mid Suffolk	96,731	4,717
Suffolk	728,163	29,399
Suffolk, Norfolk and Essex	2,979,638	130,899

b) Economic inactivity, unemployment and worklessness

5.3.9. In addition to existing construction workers, there is a significant pool of people in the labour market without work. The Government has different ways of measuring how many people are unemployed including: the claimant rate of those that are claiming Jobseeker’s Allowance (JSA); the International Labour Organisation (ILO) definition of unemployment (which includes jobless people who want to work, are available to work and are actively seeking employment but not necessarily claiming

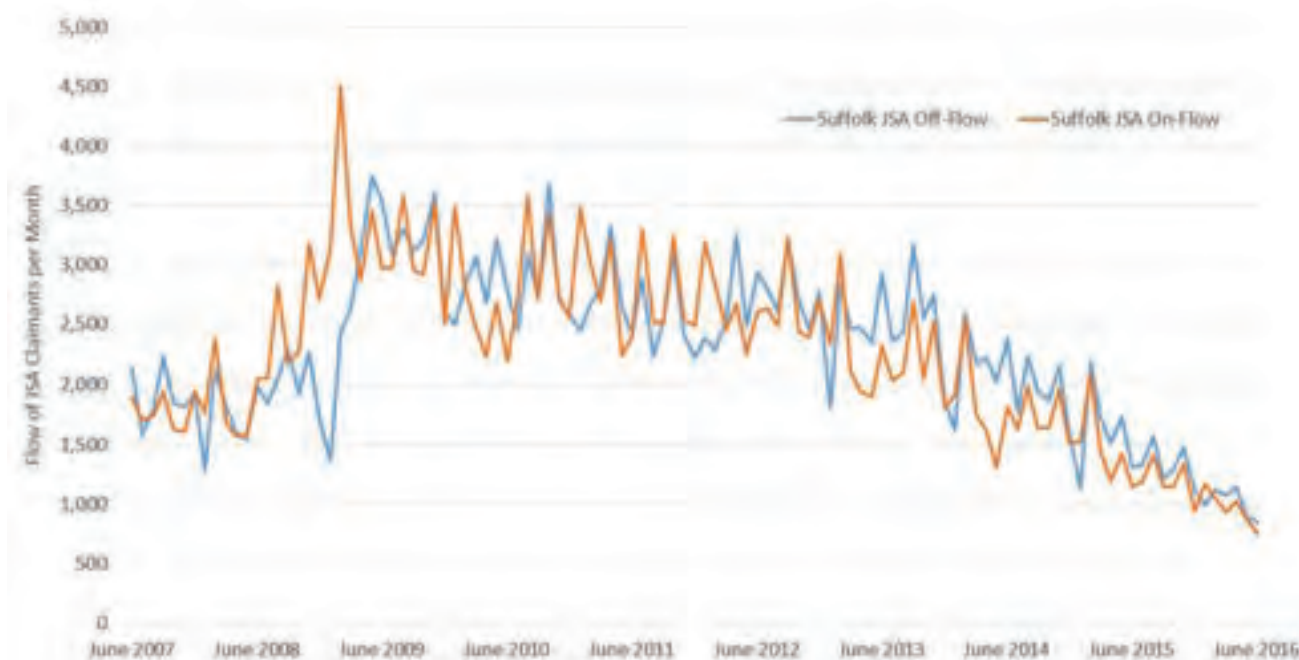
JSA); and those who are currently economically inactive, but would like a job. This is summarised in **Table 5.3**.

5.3.10. This provides a snapshot at a point in time. Even at the current point in the economic cycle, there is significant ‘churn’ within the labour market with people moving between jobs and into and out of work. **Figure 5.3** highlights the flow between employment and unemployment, which highlights that there is continually a significant pool of people with recent work experience, and who are therefore likely to be ready to work in a range of sectors and occupations.

Table 5.3 JSA Claimant Count (Department for Work and Pensions (DWP), 2016 (Ref. 5.5)) and Annual Population Survey (APS), 2015/16 (Ref. 5.6)

	JSA claimants (June 2016)	ILO unemployed (2015/16)	Economically inactive, but want to work (2015/16)
Suffolk Coastal	300	2,100	5,300
Waveney	820	2,800	4,400
Suffolk County	3,970	13,700	28,500
East of England	36,000	118,700	173,200

Figure 5.3 JSA on-flow and off-flow (i.e. the number of people starting or finishing a period of claim) in Suffolk 2007–2016 (JSA Claimant Count, DWP (Ref. 5.5))



5.3.11. This shows that the number of people who are active in the labour market is not fixed. The levels of economic activity expand and contract according to the economic environment, so when there are more jobs available more people become economically active. The local labour market could significantly benefit from a long-term major project, helping to smooth seasonal variation (particularly the tourism industry) and help build resilience through the economic cycle with direct, indirect and induced income and employment.

5.3.12. The construction phase of the Project is likely to be long enough to span both an economic boom and a recession. The rate of JSA claimants in Suffolk is at its lowest point ever (0.9%, June 2016) (Ref. 5.5). Any economic slowdown is likely to increase the pool of unemployed residents who are looking for work. Employment rates varied by more than ten percentage points in Suffolk Coastal and Waveney between the 'peak' and 'trough' of the last economic cycle.

5.3.13. Furthermore, despite the improvements in the labour market, the number of people in Suffolk who are either unemployed, or economically inactive but would

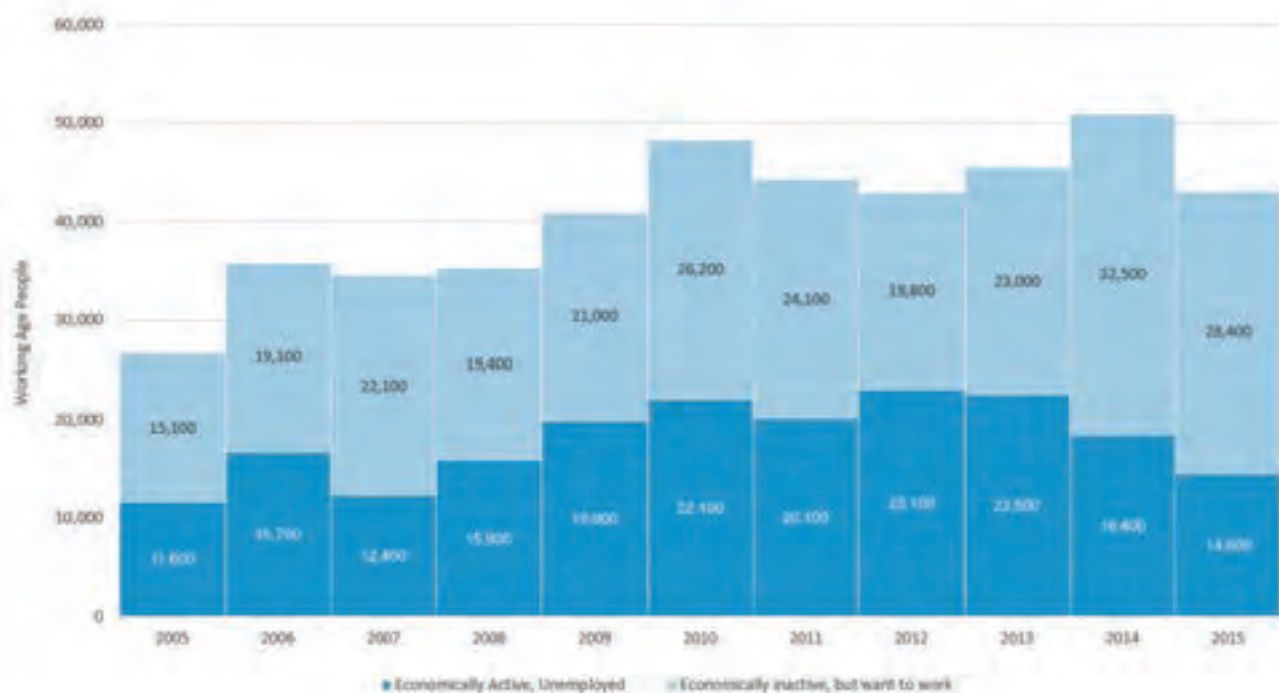
like to work, has steadily increased over the last ten years (refer to **Figure 5.4**). Across the UK and in the East of England, there are also a significant number of people in work but 'under-employed' (i.e. they would like to work more hours). The latest information from the ONS (2014) suggests this applies to around 10% of people employed in the UK (Ref. 5.7). It has also been suggested by the local authorities that there are people currently in lower skilled jobs who would be qualified to, and would prefer to, work in higher skilled positions if such jobs were available.

5.3.14. EDF Energy will continue to work with the local authorities to understand the complexities within the labour market in order to make sure that employment effects generated by the Project may be managed to enhance the benefit to local people looking for work.

c) Output and productivity

5.3.15. Construction and energy are key parts of Suffolk's economy, totalling over 20% of economic activity. Output across the whole economy in Suffolk was estimated at £15.2bn in 2013, of which the construction sector contributed around £1bn and the production sector, which includes energy, £2.4bn (ONS, 2014i) (Ref. 5.8).

Figure 5.4 Labour pool in Suffolk—showing economically active but unemployed people (i.e. work-ready) and economically inactive people who would like a job (APS, 2015, Ref. 5.6)



5.3.16. The energy sector is important because it has high productivity and supports highly skilled jobs that pay higher salaries. Across Suffolk as a whole, output per person in 2013 was around £20,620. This has grown from £14,400 in 2001, but is still below the national average of £23,755 (ONS, 2014i).

5.3.17. In the energy sector output is up to £150,000 (ONS, 2014i) per person, so a growing energy sector should help close the gap in productivity, as GVA (Gross Value Added – the value of goods and services produced) per worker in the energy sector is significantly higher than the average for all sectors.

d) Tourism

5.3.18. The tourist economy is recognised as a key strength within Suffolk’s economy, in particular within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) which stretches north and south of Sizewell C.

5.3.19. EDF Energy is working with partners, including local authorities, Suffolk Coast Destination Management Organisation (DMO), Visit Suffolk, Visit East Anglia, the SCH,

AONB and NALEP, to understand and define the tourist sector. It is drawing on published research by these partners and using public datasets and methodologies from the ONS.

5.3.20. Methodology and data from the BRES (Ref. 5.4) and commissioned by the Suffolk Coast DMO and the AONB undertaken by Destination Research (2015) (Ref. 5.9) suggest that, across Suffolk, around 30,000 jobs are supported by the tourist sector in accommodation, food and drink, recreation, leisure and cultural sectors. About 10% of this is within the Suffolk Coast and Heaths AONB. The tourism sector represents an estimated 10-12% of all jobs in Suffolk, which is significant, but similar to tourism’s share across the UK as a whole.

5.3.21. EDF Energy is working to identify the key reasons tourists come to the area and the extent to which Sizewell C could have an effect on the attractiveness of the area for tourists, and the opportunities the Project could bring.

5.4. Updated proposals

5.4.1. This section describes the updated proposals and progress made since the Stage 1 consultation, including a summary of assumptions about the size, location and characteristics of the workforce during construction.

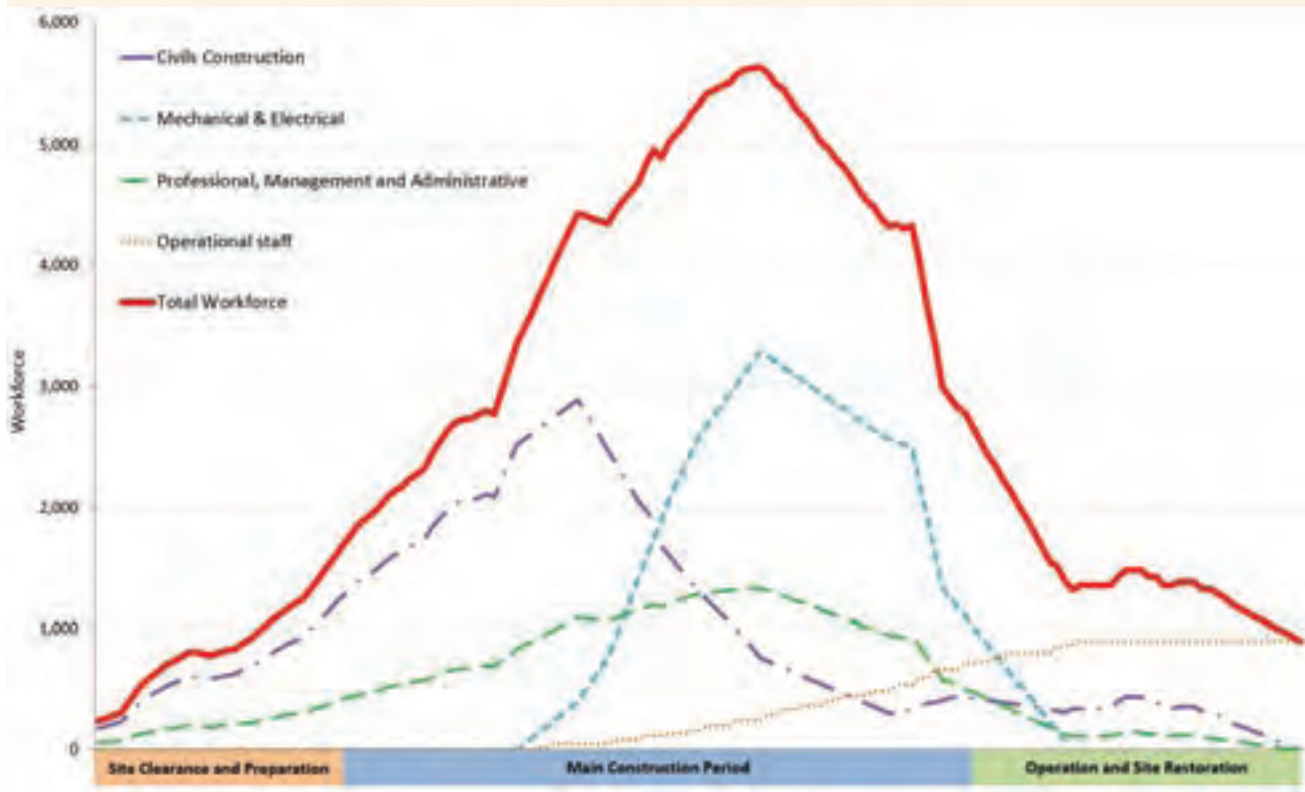
a) Construction workforce profile

5.4.2. At the Stage 1 consultation, EDF Energy set out the process for calculating the workforce profile (the number and skills breakdown of workers on the Project over the course of the construction phase). Since then, changes have been made based on a number of different sources of data, including advice from contractors and bodies within the industry, emerging data from Tier 1 Contractors on Hinkley Point C (HPC) Project, as well as monitoring from other projects (e.g. EDF’s Flamanville 3 project in France).

5.4.3. Workforce profiles from EDF’s database of previous projects for two (non-EPR™) units have also been reviewed to help determine the relationship between the two main contract packages (main civil works, mechanical and electrical) to identify an indicative histogram.

5.4.4. Figure 5.5 incorporates some refinements in EDF Energy’s understanding since the Stage 1 consultation, the key difference being in the earlier years of construction. The Stage 1 consultation profile was based on the HPC Project, whereas this revised version incorporates a different earthworks approach for Sizewell C, including the need to construct a cut-off wall. A workforce of around 5,600 construction workers is still anticipated at the peak of the construction phase (with an additional 500 staff working at the operational associated developments including the accommodation campus and park and ride facilities, which are not included in this profile). At the peak, there would be around 250 permanent staff on-site in roles preparing for the operational phase, building up to a long-term, permanent workforce of 900 staff when the units are fully operational and start generating electricity.

Figure 5.5 Sizewell C construction labour demand curve—estimated workforce numbers



b) Recruiting a local workforce

5.4.5. The construction workforce for the Project would comprise:

- home-based workers who are already resident in the local area or region and would commute to and from the site from their existing home on a daily basis; and
- non-home-based workers who do not currently live in the local area or region and would find accommodation in the area.

5.4.6. The number of home-based workers anticipated to work on the Project is calculated based on the number of jobs needed, the specific skills required, and the availability of those skills within commuting distance of the Project.

5.4.7. EDF Energy’s predictions for local recruitment have been refined since the Stage 1 consultation to take into account:

- 2011 Census data (Ref. 5.3) on the economic activity and skill level of existing residents;
- discussion with the Construction Workforce Management Team on the HPC Project and the Construction Industry Training Board (CITB);
- assumptions on commuting distances;
- feedback from local authorities; and
- comparative information from other UK power station projects including Sizewell B and HPC, as well as from Flamanville 3.

5.4.8. The proportion of home-based workers would vary throughout the construction phase. The highest proportion of non-home-based workers would come at the mechanical and electrical peak, which coincides with the overall construction phase peak.

5.4.9. **Table 5.4** provides a high-level overview of the skills breakdown at peak. While the peak of construction would create many roles for home-based workers in civil construction, management and administration and service jobs, around 30% of mechanical and electrical jobs are also estimated to be taken by home-based workers at this point. This will help to deliver aspirations of the local authorities for local people to access higher skilled roles.

Table 5.4 Projected home-based and non-home-based labour at Sizewell C–Overall peak construction (rounded numbers)

	Home-based	Non-home-based
TOTAL	Approx. 2,000 (36%)	Approx. 3,600 (64%)
Civil operatives	50%	50%
Mechanical and electrical operatives	30%	70%
Operational staff	100%	0%
Staff and management	15%	85%
Site services, security and clerical	90%	10%
All	36%	64%

5.4.10. For the purposes of our assessment we have used the working pattern set out in **Table 5.5**, which was identified in our Stage 1 consultation. These working patterns, which remain subject to final agreement and confirmation, provide windows within which contractors would have the flexibility they need to adapt their organisation for the works to be undertaken. It would help to reduce noise and congestion from development traffic coinciding with the road network’s peak hours. Patterns of departure from the site would be staggered, but also by the type of work undertaken (i.e. contract package) and the contractor, further reducing pressure on traffic peaks.

5.4.11. The majority of workers are expected to be working on either Shift 1, Shift 2 or a single construction shift. Most of the remaining employees would work to office hours.

5.4.12. Double Shifts 1 and 2, and the Night work, are likely to operate on a four-week cycle. The Single Shift is likely to work on a six-week cycle. Within these cycles, there would be longer weekends that result in the earlier departure of staff on Thursdays or Fridays, generally between 2pm and 4pm.

Table 5.5 Sizewell C start and end windows (Monday to Friday)

Shift	Start Window	End Window
Shift 1	06:00-07:30	From 14:00-16:00 or after 17:30
Shift 2	13:30-15:00	From 22:00-00:00
Night Shift	20:30-22:00	From 06:00-08:00
Single Shift	07:00-08:30	From 16:30-18:30
Office Shift	07:30-09:00	From 17:30-19:00

5.4.13. At weekends, it is anticipated that different working patterns would apply. There are two likely work patterns that may be used:

- Some construction staff may work on Saturday mornings, with no shift on a Sunday.
- Others may work an alternating pattern, which may operate on a four-week cycle comprising 12 working days (Monday to Sunday plus Monday to Friday) followed by a two-day non-working weekend (Saturday and Sunday), followed by 11 working days (Monday to Sunday plus Monday to Thursday), followed by a three-day non-working weekend (Friday to Sunday).

5.4.14. These arrangements would provide an opportunity for non-home-based workers to return home on a regular basis.

5.4.15. There would be some occasions and activities which require continuity of working (e.g. fixing of concrete formwork and large concrete pours) where the working pattern may differ from that described above. It is anticipated that these would involve only a small proportion of the workforce. Where possible, campus accommodation would be prioritised for workers more likely to undertake these activities.

c) Where would workers live?

5.4.16. EDF Energy has developed a Gravity Model to estimate where the construction workforce would be likely to live during peak construction. The model uses transport and socio-economic information, along with accommodation data. A number of other inputs are also incorporated into the model, including the distance workers

are likely to travel based on research, experience from monitoring during the construction of Sizewell B, and from consultation with Suffolk County Council (SCC).

5.4.17. The Sizewell C Gravity Model (the Gravity Model) calculates where both home-based and non-home-based workers would be likely to live across the region at peak construction. It predicts the location of the permanent homes of home-based workers and temporary accommodation of non-home-based workers.

5.4.18. The key socio-economic inputs that inform the Gravity Model include:

- a peak construction workforce of 5,600 workers (the workforce is expected to exceed 5,000 people for between 1-2 years), with workers either home-based or non-home-based;
- a home-based workforce (around 2,000 workers) distributed based on skills availability in the area and a non-home-based workforce (around 3,600 workers);
- home-based workers are assumed to be willing to commute up to 90 minutes (although this is not modelled as a ‘cut-off’), each way, on a daily basis;
- non-home-based workers are assumed to have a preference to live locally in order to reduce the length of their commute to work – this is modelled using a ‘distance decay’ function (an indicative limit of 60 minutes commute time has been applied to this category of worker);
- at peak construction up to 2,400 non-home-based workers being resident at EDF Energy’s accommodation campus located within the main development site (refer to **Section 7 Main Development Site**) to minimise their daily travel time and traffic on local roads; and likely accommodation choices of workers and availability.

5.4.19. This socio-economic data is combined with transport-related analysis including average speed, route, journey time and value of time (linked to workers’ preference to travel shorter distances to work). This allows the model to estimate a distribution of workers across the area, based on the amount of accommodation available, but also the inherent preference for workers to live close to their workplace.

5.4.20. Since the Stage 1 consultation, the Gravity Model has been revised based on comments received from SCC on the general structure of the model, and updated to reflect emerging project design and new datasets. The main refinements and enhancements are:

- the Gravity Model has been updated with 2011 Census population data which was not available at the time of the initial Gravity Model development;
- the Gravity Model has been updated with the latest available information on local accommodation sources and affordability (including from the 2011 Census);
- the home-based workforce has been split to distinguish between the different commuting patterns of on-site civil, mechanical and electrical workers, site services and support workers, and future operational staff;
- an estimate of the workforce required to operate EDF Energy's associated developments (and in particular the accommodation campus) has been added to the Gravity Model; and
- the assumption that no home-based construction workers would travel more than 90 minutes has been removed in response to comments received from SCC.

5.4.21. These enhancements and amendments have not given rise to significant changes in the overall distribution of the construction workforce compared to the distribution presented at the Stage 1 consultation.

5.4.22. The Gravity Model results are now being used as an input to the traffic modelling and to inform wider strategies for transport, accommodation and other socio-economic effects, including health care needs and other community facility demand assessments.

5.4.23. At peak, home-based workers are mainly drawn from within a 90-minute travel distance of the site, including locations close to the site and also further afield such as Ipswich, Lowestoft, Felixstowe, Colchester, Great Yarmouth and parts of Norfolk.

5.4.24. At peak, non-home-based workers (excluding those in the EDF Energy provided accommodation campus) are likely to live within a smaller catchment area reflecting their preference to live close to the site and reduce travel time, and the availability of accommodation (i.e. local tourist, caravan and private-rented). As such, more workers would be located relatively close to the site in areas to the east of the A12 (e.g. Leiston, Aldeburgh and Saxmundham) than in areas further from the site (e.g. Lowestoft and Ipswich).

5.4.25. For modelling purposes, an indicative limit of 60 minutes commute time has been applied to this category of worker, although the 'distance decay' function estimates that propensity to live towards the edge of this catchment is low.

5.4.26. The Gravity Model provides a prediction of likely worker locations, based on the best available data and methodology at the present time. It is recognised that this is a modelled prediction and cannot take full account of all of the factors which may influence accommodation and employment decisions which are still many years away. However, it is considered a rational estimate and provides both a founding platform to the assessment, and the basis for ongoing engagement with the local authorities.

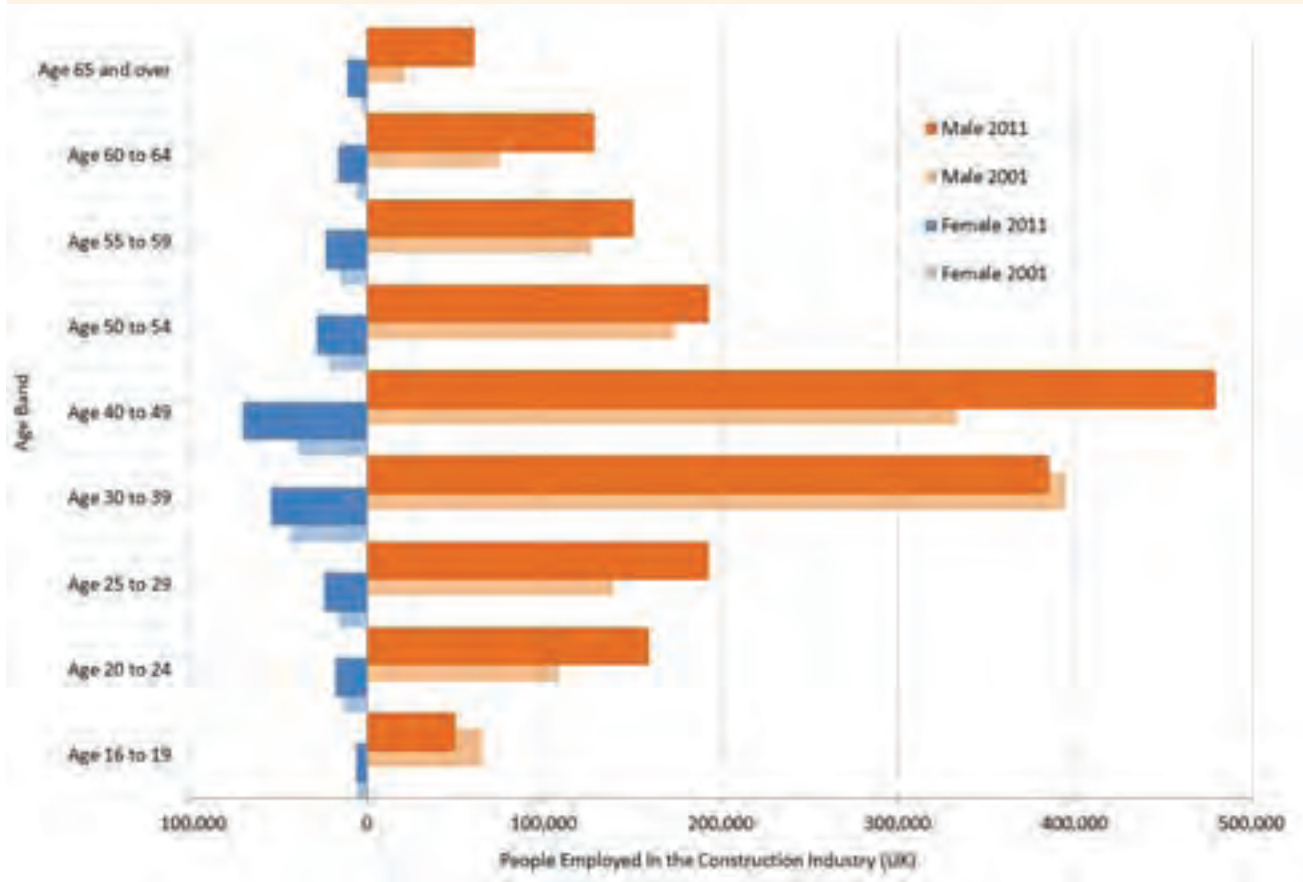
5.4.27. The scale of the construction workforce, and the number of non-home-based workers who would be likely to seek accommodation in the local area, needs to be seen in the context of the wider residential population. The workforce would be a relatively small number in the context of the existing population of Suffolk (1.1% of approximately 525,000 working age residents) and of the nearest districts of Suffolk Coastal and Waveney (around 3.3%). However, it is understood that this would result in a sizeable transient population when considered in the context of neighbouring towns and villages.

d) Demographic characteristics of the construction workforce

5.4.28. The overall number of non-home-based workers, influenced by the number of workers required for each skillset, is the starting point for assessing the likely effects of the construction workforce on local receptors. However, to have a more detailed understanding of likely impact it is necessary to have a more refined picture of the people who would comprise this workforce, particularly the non-home-based workers.

5.4.29. Data is being analysed to bring together a demographic profile of the anticipated construction workforce at peak, including age, sex and other characteristics. This will help inform the assessment of impacts on local accommodation and public services. It will enable mitigation to be directed to areas where effects are most likely to be experienced.

Figure 5.6 Age and gender breakdown in the construction sector (2001 and 2011 Census)



5.4.30. The 2011 Census gives a comprehensive overview of age and gender structures of the UK construction industry and demonstrates that the workforce is overwhelmingly male and in the 20 to 49 age range (refer to **Figure 5.6**). A comparison with 2001 Census data shows that the UK's construction workforce is ageing, and there has been a proportional increase in women working in the sector (up 54% since 2001, compared to 25% growth in male construction workers).

5.4.31. A full assessment of other demographic benchmarks including, but not limited to, family status, nationality and religion is being progressed in order to identify the likely demand for different public services and community facilities arising from the construction workforce. For example, this would allow EDF Energy to broadly estimate the likely demand for types of community, healthcare, education (for workers with children), social service(s) and sports and leisure facilities for people of different ages and sex.

5.5. Project effects

5.5.1. The Project represents a significant investment in a highly productive, high-tech and low-carbon sector. The Project would create substantial direct economic benefits during its construction and operation through employment, skills development and supply chain opportunities for businesses. However, there is also the risk of adverse effects, for example on tourism, a range of social and community issues, and housing.

5.5.2. This section outlines the areas where significant positive and negative effects are considered most likely to arise, based on the size and characteristics of the workforce, and feedback from engagement with the local authorities. This section further outlines measures to enhance the opportunities created by the Project.

a) Jobs, education and skills

5.5.3. The Project would create approximately 25,000 job roles during construction, followed by a permanent workforce of 900 people to operate the power station. In addition, there would be a regular short-term workforce in the region of 1,000 people associated with planned outages.

5.5.4. The Project would also require a significant workforce in non-construction roles, both directly and in the supply chain. These jobs would be split across a number of sectors, including tourism and hospitality, food production, business support and administration. Many of these sectors are already strong in Suffolk. Therefore, changes to the skills base as a result of new jobs at Sizewell C would offer a tangible long-term legacy. This is certainly the case for the tourism sector, which has been identified as lacking higher skilled roles and experiencing a high-level of seasonality.

5.5.5. The creation of sustainable careers in the civil and nuclear construction sectors would be catalysed by the Project, helping to enable CITB and other industry skills bodies to address the identified skills gaps in this sector. It would also help to create a strong specialism for the UK to deliver the suite of large infrastructure projects currently in the pipeline.

5.5.6. All of EDF Energy's activities are set in the context of securing a low-carbon future, delivering this safely, and ensuring an inclusive approach to activities.

5.5.7. EDF Energy is working with SCC's Economy, Skills and Environment Directorate and NALEP, as well as the Suffolk Energy Coast Delivery Board, local chambers of commerce and the East of England Energy Group (EEEGR) with the aim of ensuring that Suffolk secures maximum economic advantage from growth in the energy sector and the significant benefits the Project would bring. This recognises that the Project's effects need to be embedded as a key part of the Energy Coast, which also includes nationally significant offshore wind projects and oil and gas.

b) The supply chain

5.5.8. A significant level of long-term economic benefit is expected as a result of such a large infrastructure project. The Project, in the context of the fleet of planned new nuclear power stations in the UK, could create significant national supply chain opportunities.

5.5.9. In general, it is anticipated that the technology suppliers/engineers and equipment and materials contracts would be at the national and international scale and would contribute to national policy ambitions to develop the UK's low-carbon manufacturing capacity. EDF Energy aims to successfully embed part of the national construction, engineering and nuclear supply chains (the businesses and services that receive the majority of the spending from these industries in the UK) in the regional economy. By doing so, the Project would contribute to enhanced economic growth, promoting long-term joint working between HPC and Sizewell C and positioning the local labour force and businesses as pacesetters in a major growth sector.

5.5.10. There are a number of local and regional firms that may benefit from these contracting opportunities. Some contracts/sub-contracts, and particularly smaller packages and non-construction packages (such as professional and design services, business administration, hospitality, catering, security and cleaning), would have a much stronger local and regional element. In these circumstances, there would be a substantial proportion of value retained in skills development, wages (of home-based workers) and expenditure (of non-home-based workers).

5.5.11. Early contracts for the HPC Project have a high local component approximately 83% of value in site preparation has gone to Somerset-based companies. Small and Medium-sized Enterprises (SMEs) in non-construction sectors have already taken up key opportunities to supply the project. For example, a number of catering and food production companies have formed a consortium to supply food and hotel services to the site.

5.5.12. Section 5.6 provides details on how the effects of the Project may be enhanced through an Economic Strategy.

c) Tourism

5.5.13. As set out above, EDF Energy has set-up a working group with members from the local authorities, Suffolk Coast DMO, Visit Suffolk, Visit East Anglia, the Suffolk Coast and Heaths AONB and NALEP to help define the key aspects of the tourism economy that could be affected by the Project, and how to harness the opportunities the Project may bring to the area's tourist economy (for example through marketing, public relations and sector training). This has enabled EDF Energy to build a better understanding of the local and wider elements of the accommodation market, key attractions and perceptions of the area, and its relative importance to the economy in terms of jobs and spending by visitors.

5.5.14. EDF Energy is aware that tourism is difficult to define and can be subject to a number of influences beyond the Project. However, it remains committed to working with the local authorities and tourism bodies to ensure that the perception of the Suffolk Coast and its attributes is not significantly affected by the Project. EDF Energy will continue to work with this group, as well as engage directly with local businesses with the potential to experience effects, including the RSPB (Minsmere), National Trust (Dunwich Heath) and Pro Corda (Leiston Abbey).

5.5.15. Emerging potential effects of the Project include those on the economy, accommodation supply, the image of the area, perception and 'brand', and effects of traffic levels.

5.5.16. In order to ascertain the potential range of effects of the Project on tourism, EDF Energy will commission a visitor survey, including people who have previously visited the area and those who may consider visiting Suffolk in the future. This will enable EDF Energy to gain a fuller understanding of the issues and to help direct monitoring and mitigation towards the effects or locations considered most sensitive. To ensure that the most recent information possible is obtained to support the application for development consent, the survey will be undertaken after the Stage 2 consultation.

5.5.17. The provision of a visitor centre for Sizewell C was identified in the Stage 1 consultation. This provision was generally supported by respondents to that consultation, recognising the ability of a visitor centre to illustrate the contribution of Sizewell C to carbon reduction and its role as part of the Suffolk Energy Coast, and demonstrate the importance of the surrounding AONB.

5.5.18. EDF Energy consulted on three potential sites for a new Sizewell visitor centre in its Stage 1 consultation, namely Option 1: Lover's Lane; Option 2: Sizewell Beach; and Option 3: Goose Hill. Concerns were expressed during the Stage 1 consultation about the potential landscape and visual impacts of siting a new visitor centre off Lover's Lane (Option 1) in a relatively open and elevated area of the AONB. The potential impact of a new visitor centre on Sizewell village (Option 2) was also a concern; and local residents questioned the adequacy of the road to accommodate an increase in traffic associated with the operation of a visitor centre. The Goose Hill site (Option 3) was seen as a more appropriate location, with its main advantage being its proximity to the new power station and being near to the new access road/car park.

5.5.19. Further consideration is being given to the potential of a visitor centre for the Sizewell power station complex by EDF Energy Nuclear Generation Limited (as the operator of the Sizewell B Station) and EDF Energy Sizewell C. EDF Energy will consult on the siting of a visitor centre prior to an application being submitted seeking to secure the relevant permission.

5.5.20. A visitor centre would be accessible by the general public with exhibition space and modern educational elements providing capacity for school groups. Its role would be to provide information to the general public and school groups about aspects including the process for generating electricity, the benefits of low-carbon energy and sustainability more generally, and the new technology's role in the future of nuclear power in the UK.

d) Community and social

i. Community cohesion and safety

5.5.21. During construction, provision of an accommodation campus and an accommodation office as part of robust accommodation strategy would comprise a key element of EDF Energy's project-wide approach to managing community effects. Other measures, including community liaison and EDF Energy's own strict worker Code of Conduct and drug and alcohol testing policies would be implemented to ensure high levels of worker behaviour are maintained and to promote community cohesion. In terms of drug and alcohol testing, all personnel working on the Project would have to participate in a pre-employment screening programme and be subject to random testing and 'with cause' testing following specific incidents or events.

5.5.22. Further work will be undertaken to research community cohesion issues within the construction sector in the East of England and nationally. This will cover issues related to the non-home-based workforce, use of services, housing, access to jobs, training and education, anti-social behaviour and perception issues relating to the demographic make-up of the non-home-based workforce.

5.5.23. EDF Energy will continue to work with the local authorities to develop an appropriate balance to the accommodation strategy, and the construction and enhancement of local community amenities and facilities. EDF Energy plans to meet the construction workforce entertainment, recreation and health needs, while fostering community cohesion and supporting local regeneration objectives.

5.5.24. A key feature of this will be to explore and build upon NSIP construction best practice, and the development of the final application, strategies and support initiatives bespoke to local circumstances, requirements and needs.

5.5.25. EDF Energy will specify how it would deal with community issues in the context of the wider socio-economic strategy and mitigation of impacts. The key measures will be informed by feedback from this Stage 2 consultation, but is likely to include, but not limited to:

- a welcome pack that would be provided to all workers as part of the induction process. This would include general information on the area, advice on the services of the accommodation campus, details of the worker Code of Conduct, reinforcing their roles and responsibilities as ambassadors for the Project;
- development of a series of education, training, employment outreach and recruitment initiatives to maximise opportunities for people to gain employment during the Project. This would include working partnerships with local employment and recruitment firms to deliver an employment brokerage, intended to place people into sustainable employment. This would include people who already have appropriate skills, and also identify and address skills needs and barriers to work for target groups including the unemployed and young people not in education, employment or training (NEETs). This is linked with the employment outreach programme which aims to motivate people in the community to participate in the workforce;
- a specific apprenticeship strategy will be developed and EDF Energy will work with its supply chain and other agencies to maximise apprenticeships for local residents;
- the provision of worker amenities, facilities, services and care that facilitate a healthy, safe and productive workforce, minimise local community disruption, and support local regeneration objectives;
- addressing potential residual effects that might impact upon local services and amenities, and supporting local health care and emergency services through the provision of appropriate resources;
- implementation of EDF Energy's strict drug and alcohol testing policies; and
- a Code of Conduct to set expectations and provide means of addressing poor behaviour and to provide a local information pack for workers. These standards would apply to all workers across the Project, within the site and accommodation campus and in the community.

The Code of Conduct would be developed in partnership with contractors and imposed through all main contracts, to ensure that prompt and effective action is taken to address any cases of unacceptable behaviour. A similar code of conduct has been developed and implemented at HPC and West Burton B (EDF Energy's combined cycle gas turbine power station) and proved to be highly effective.

5.5.26. Work to identify key risk areas (e.g. crime, accommodation standards), in collaboration with the emergency services and local authorities, will be undertaken. Ultimately, responsibility for addressing issues of community safety would rest with the body that has the appropriate skills and experience and, in some instances, the statutory duty and powers. Much of the mitigation would therefore be developed in collaboration with these organisations, based on evidence of likely significant effects. A key aspect of this approach will be developing a commitment to information sharing, especially with emergency services, and a plan for monitoring and mitigating the direct effects of the Project.

5.5.27. A number of other potential actions may be implemented by EDF Energy as complementary measures, for example, a dedicated communications and community relations function that would include a hotline for reporting incidents, managing enquiries and responding to complaints. Any mitigation would be developed in collaboration with the relevant organisations, and consulted upon, based on evidence of likely significant effects.

5.5.28. A Community Safety Management Plan will be developed in collaboration with local authorities, emergency services and public services, among other stakeholder groups. It will outline the approach to community safety in the area including:

- a precautionary approach to manage impacts on community safety, cohesion and public services, with a focus on prevention where possible;
- an information pack for accommodation providers in the private-rented sector and tourism sector, setting out details of the workforce profile and the Code of Conduct;
- a mechanism for the local community to register public concerns, through (for example) a hotline and awareness campaigns;
- provision of occupational health services to reduce pressure on existing facilities and a review of any residual public health care requirements from non-home-based workers and their dependants; and

- provision of recreational facilities including sports facilities, helping to manage the demand from the workers.

5.5.29. Following this stage of consultation EDF Energy intends to develop an emergency services working group in order to work across all sectors to determine the level of additional need that may arise as a result of the Project and how to mitigate any potential adverse effects.

ii. Public services and community facilities

5.5.30. Feedback from the Stage 1 consultation and discussions with the local authorities have highlighted concerns about the effect of the Project on the capacity and operation of public services and community facilities, such as the demand for school places, GP surgery lists and acute health and social care. EDF Energy recognises that this is a key concern. As part of the assessment of impacts of the non-home-based workforce on the capacity of community facilities and public services, a detailed audit will be undertaken of existing and potential future school places, sport and leisure facilities, healthcare, social services and children's services. This audit will take into account the underlying (baseline) take-up of services and current capacity. It would be combined with workforce profile, demographics and distribution to ascertain where potential effects may arise as a result of concentrations of non-home-based workers.

5.5.31. This approach will feed into the development of potential mitigation strategies to minimise or mitigate any significant adverse effects, where appropriate.

5.5.32. EDF Energy will also work collaboratively with other service providers, including health, social services, and children's services, to determine the likely impact of the Project and develop ways of both mitigating any effects on the existing capacity and maximising benefits where possible.

iii. Health and wellbeing

5.5.33. Health Impact Assessment (HIA) is a multidisciplinary process designed to identify and assess the potential health outcomes, both adverse and beneficial, of a proposed project. The HIA will deliver evidence-based recommendations to maximise health gains and reduce or remove potential negative impacts and inequalities.

5.5.34. A HIA is listed as an optional assessment within the Planning Inspectorate's guidance and is considered to be an appropriate process to further investigate and address potential health and well-being issues in NPS EN-6. Furthermore, the HIA has been deemed prudent and necessary at the project-level by the (former) Department of Energy and Climate Change to inform the Planning Inspectorate.

5.5.35. The scope, focus and necessary outputs of the HIA have been agreed with Public Health Suffolk through a formal HIA scoping exercise, and will be further refined and informed through this Stage 2 consultation with statutory consultees, key health stakeholders, local communities, and through iterative engagement with Public Health Suffolk.

5.5.36. The final HIA will investigate and assess all credible health pathways raised, and will include a Health Action Plan, comprising mitigation and support initiatives tailored to local circumstance and needs.

5.6. Maximising the benefits

5.6.1. This section details how the economic strategy would optimise the potential beneficial effects of the Project.

a) An economic strategy

5.6.2. EDF Energy and the local authorities agree that the Project has the potential to catalyse sustained improvements in education, skills and business development through a construction and nuclear supply chain, enhancing the already strong sectors in the area, and developing the strength of other sectors identified as a priority for growth by the NALEP.

5.6.3. There is an opportunity for local businesses to take advantage of the Project, through both stimulation of the local supply chain and development of a lasting economic legacy.

5.6.4. To develop an economic strategy that optimises the benefits of the Project, particularly for supply chain and skills, EDF Energy will continue to work closely with the local authorities, the Suffolk Chamber of Commerce, NALEP, education and skills providers and private partners. EDF Energy will have regard to the plans and strategies of national skills, supply chain and other bodies (including the Department for Business, Energy and Industrial Strategy (BEIS), the Construction Skills Network (CSN (CITB)), the Business Growth Service (BGS) and the Nuclear Advanced Manufacturing Research Centre (NAMRC)).

5.6.5. EDF Energy will work with partners to ensure that the economic strategy:

- shares emerging best practice from experiences on other major projects;
- leads to a procurement/supply chain engagement strategy, which includes measures to raise awareness and distribute information to the potential supply chain; and
- includes a position statement for the Sizewell Delivery Forum (vehicle for promoting local business opportunities) and links national upper-tier contractors with local businesses.

5.6.6. The Nuclear Supply Chain Action Plan (Ref. 5.10) sets out an action for both the UK Government and Welsh Government, with support from the Nuclear Decommissioning Authority (NDA), to oversee the formation of Strategic Delivery Forums at a local level, demonstrate commitment to the industry and optimise local and regional employment and supply chain opportunities. Local delivery forums provide an excellent means of bringing together public and private sector interests to present a coherent offer to businesses, including inward investors. They also provide a means by which local supply chains can be developed and skills capabilities enhanced to meet the exacting standards required for entry into the nuclear market.

5.6.7. The construction phase itself is likely to see a changing baseline as the economy passes through at least one complete economic cycle. As such, the economic strategy and all related strategies must be flexible and able to react to a changing economy.

5.6.8. The framework for this strategy is already in place with around 800 businesses across a range of sectors already registered with the Project's supply chain portal (<http://www.sizewellsupplychain.co.uk>), which has been developed in partnership with the Suffolk Chamber of Commerce.

b) Skills, education and employment strategy

5.6.9. EDF Energy, SCC, regional stakeholders, and education and training providers will work together to develop an education, skills and employment strategy to support the Project. The strategy will be designed to align with the needs of EDF Energy, its contractors and the wider regional and national economy during the construction phase and beyond. As education, skills and employment are intrinsically linked, they will be approached in an integrated way.

5.6.10. The strategy will require careful planning, multi-agency collaboration. It will need to be linked to existing teaching and curriculum resources, and routes from education into work, to be effective. In particular, it will need to be aligned with the wider identified needs of the energy sector in the regional economy.

i. Approach to education

5.6.11. EDF Energy's approach to education is founded on the theme of 'Inspiring the next generation and building a stronger future' and has two key strategic themes:

- building a future workforce by inspiring and enabling young people to study Science, Technology, Engineering and Mathematics (STEM) subjects and enter related careers in EDF Energy and the wider industry. This would be delivered by facilitating governors, teachers, parents and employees to better support young people on STEM subjects, skills and careers and by engaging the widest possible pool of future talent to build a diverse workforce, supported by truly inclusive workplaces; and
- building stronger communities by developing positive relationships with customers and local communities through educational activity, engaging existing employees and enhancing their skills through related volunteering and better preparing the next generation for the future challenges they would face at work and in the community.

5.6.12. As well as creating a strong and diverse future workforce, EDF Energy aims to provide the opportunity for its employees to support the Careers Education, Information, Advice and Guidance (CEIAG) offered to young people, whilst strengthening relations with local communities and building skills within the existing workforce.

5.6.13. The education strategy for Sizewell C would build on the current activity at Sizewell B, as part of EDF Energy's Community Relations Programme. The trusted relationship and activity at Sizewell B provides a good foundation for Sizewell C education to build upon.

5.6.14. Sizewell C education activity would see the introduction of the 'Inspire' programme. This would be managed locally and would focus on building a strong network of schools and colleges with which EDF Energy and its supply chain partners can work. The interventions would focus on informing and inspiring teachers, students and those that support the education infrastructure about the size and scale of the Project, with real emphasis on potential apprenticeship and graduate career opportunities.

5.6.15. The intent is to create an environment to which the whole supply chain, once in place, would be able to deliver the education interventions. The 'Inspire' programme would be developed with SCC, with input from schools and would be delivered in context of the current SCC activities such as 'Raising the Bar' and 'Developing Suffolk Talent'. A collaborative approach would be crucial from the start and working with other industry partners in the region, rather than competing with them, would be key.

5.6.16. In areas of education where Sizewell B is already active, EDF Energy would enhance its activity with information about the Sizewell C programme, so that the overall programme becomes broader. Although the reach would be county-wide it would begin with supporting those that would be impacted most by the build.

5.6.17. Inspire would be led by EDF Energy in the initial stages and as the supply chain becomes involved it would also become its framework for the management of education delivery. This would have a heavy emphasis on apprentice and graduate opportunities and bridge the gap between school and employment. Education activity would be developed and delivered with the aim of leaving a legacy. The intent would be to work across the local area and counties of Suffolk and Norfolk, encouraging collaboration, promoting clear pipelines into employment, and supporting the counties' longer term goals to raise aspirations, raise skill levels and retain talent.

5.6.18. EDF Energy also continues to deliver a national programme of initiatives with a broad range of aims across the provision of education in science, technology and maths that would be drawn on for this Project, including:

- providing digital education and skills resources, campaigns and tools;
- running or participating in event-based interaction through national, regional and local events, particularly those related to STEM skills and careers;
- targeted promotion of early careers opportunities to young learners;
- running national campaigns to tackle key education and skills issues, for example, the Pretty Curious campaign (www.edfenergy.com/prettycurious) which seeks to inspire more girls into STEM-related studies and careers; and
- actively supporting other organisations and championing campaigns related to the education and life skills of young people (e.g. The Prince of Wales' #iwill campaign—EDF Energy actively support this through its

national schools programme, Big Energy Project, with schools, apprentice development and recruitment of young employees).

ii. Skills development

5.6.19. Alongside education initiatives, EDF Energy is already taking steps to promote opportunities for local people to be in a good position to take advantage of potential employment opportunities. It has continued to support skills, training and educational programmes in Suffolk through its existing resources at Sizewell B. It has also sponsored and attended Suffolk skills shows to explain the Project to children and teachers.

5.6.20. There is an opportunity for the Sizewell C education, skills and employment strategy to integrate strongly with existing local policies, strategies and interventions. Successful integration of Sizewell C with the priorities of the Local Enterprise Partnership (LEP) and future authorities should ensure that EDF Energy can leverage optimal support from both public and other private sector sources of funding and support.

5.6.21. It is also important that Sizewell C links effectively to existing and future initiatives that are supported by the LEP, Councils, and the oil, gas and offshore wind industries. There will be a focus on providing sustainable opportunities and leveraging the skills base of Suffolk. The combined strategies should focus on creating a long-term legacy for the region, in partnership with others. As a starting point, the Sizewell C skills strategy will align with that of SCC's 'Developing Suffolk Talent'.

5.6.22. The majority of the workforce that would benefit from education, skills and employment interventions would be the employees of our supply chain partners, not only EDF Energy. EDF Energy's role would be to create an environment in which education, skills and workforce development can flourish and the strategy will focus heavily on effective supply chain collaboration.

5.6.23. EDF Energy will place a priority on the benefits of bringing a network of training providers into a close working relationship with the Project. This would help to ensure that local provision meets the demands being created by the Project across a broad range of curriculum and a wide geography. EDF Energy will work closely with the Suffolk Energy Coast Delivery Board and its skills group to explore and create opportunities for collaboration with a network of regional training providers and colleges.

5.6.24. A fundamental aspect of the Project is to promote sustainable careers in the key sectors of the economy that would support the construction of Sizewell C. In addition to apprenticeships and new entrant opportunities, introducing up-skilling and re-skilling programmes would be introduced across the 25,000 roles available during construction.

5.6.25. Through collaboration with regional skills groups, institutions and industry bodies, skills gaps and requirements would be identified with sufficient time for specific provision and appropriate funding mechanisms to be designed and programmed in advance. Adopting this evidence-based approach will enable EDF Energy and its supply chain partners to deliver interventions where they are needed most, and work within the broader regional economic context to promote sustainable careers and skills.

5.6.26. Work is already underway to deliver these interventions. For example, EDF Energy has recently been the energy sector sponsor at the Suffolk Skills Show, and sponsored the production of the EEEGR brochure 'Skills for Energy: The education pathway into the energy industry'.

iii. Pathways into work

5.6.27. EDF Energy will produce a workforce development strategy, working with SCC and other local authorities and skills and training providers. It will look to:

- create clear pathways to employment for local people;
- have measures in place as far in advance of the start of construction as feasible and appropriate; and
- allow time for interventions to work through and to optimise local take-up of jobs.

5.6.28. EDF Energy is proposing to open a jobs service through which contractors and supply chain partners would be required to advertise all vacancies. This would be designed to support the recruitment of local residents to the Project where possible.

5.7. Next steps

5.7.1. The next steps include preparation of:

- a community impact report, drawing on evidence from topic areas including noise, air quality, visual and transport, to identify the specific combined environmental effects on residential amenity in local areas;

- a Health Impact Assessment;
- a Public Services Strategy, including an Emergency Services Plan, Community Safety Management Plan and Worker Code of Conduct; and
- an economic strategy, including the approach to quantifying economic impacts, the supply chain and procurement, a skills, education and employment strategy, and a construction workforce development strategy.

5.8. Accommodation

a) Introduction

5.8.1. This section sets out the likely scale and mix of demand for accommodation during the construction phase and how it could be met. The section is structured as follows:

- this section highlights the responses to the Stage 1 consultation relevant to accommodation, signposting to where this has been addressed in this document;
- **Section 5.9** describes the current position, including a summary of how work has been undertaken to define the baseline position;
- **Section 5.10** describes the updated proposals, a summary of assumptions about the workforce during construction and the approach to purpose-built accommodation;
- **Section 5.11** outlines the areas where effects and opportunities are considered most likely to arise, based on the size and characteristics of the workforce and feedback from engagement with the local authorities;
- **Section 5.12** details how EDF Energy would develop measures to enhance positive effects, whilst mitigating likely significant adverse effects; and
- **Section 5.13** identifies the next steps for this workstream.

5.8.2. A proportion of the Sizewell C construction workforce would require skills that are not available in large enough quantities amongst the existing population of Suffolk and the surrounding counties. There would therefore be up to 3,600 non-home-based workers from elsewhere that would require temporary accommodation in the area.

5.8.3. EDF Energy aims to strike a balance between using existing accommodation in the area and a purpose-built campus to make sure that the local community derives economic benefits from worker spend in the area, while avoiding negative effects on accommodation capacity, affordability and community cohesion.

5.8.4. Workers’ accommodation choices would be varied and would include a purpose-built accommodation campus, caravan sites (both touring and static), other tourist accommodation (both serviced and un-serviced), the formal private-rented sector (PRS), current owner-occupied accommodation and additional, new accommodation that is likely to come forward as a result of demand (e.g. people taking in lodgers and renting out spare rooms). It is important to understand where the non-home-based construction workforce is likely to look for accommodation in order to assess potential impacts on the market.

b) Stage 1 consultation

5.8.5. Table 5.6 summarises the responses received to the Stage 1 consultation in terms of accommodation and signposts to where in this document each response has been addressed.

5.8.6. EDF Energy has been working to review the comments received from the Stage 1

consultation and address the issues, providing more information where possible. EDF Energy has:

- refined its estimate of the number of construction workers required in the early years;
- gathered more information on key local issues such as the amount, affordability and local variations in private-rented and tourist accommodation;
- worked with the Councils’ housing officers to understand local housing issues; and
- started discussions about ways to avoid the negative effects and enhance the benefits that would arise.

5.8.7. EDF Energy has also started to scope the next stages of work that will include:

- refining its understanding of the housing market and how it plays a role in supporting vulnerable families, especially in locations like Leiston which are most likely to be affected by construction workers; and
- developing effective ways of reducing or avoiding adverse effects, targeted at the areas where EDF Energy can create long-lasting and effective interventions, for example through bringing empty homes back into use.

Table 5.6 Summary of responses to the Stage 1 consultation

Response to the Stage 1 consultation	EDF Energy’s approach/response
Accommodation Campus: Size, specifications, location and operational management linked to worker behaviour and community effects	
<ul style="list-style-type: none"> • There was general support for EDF Energy’s accommodation strategy of providing a campus close to the construction site to reduce social impacts on surrounding communities and the need for workers to travel. • Some respondents stated that the scale of the proposed campus was inappropriate and that they would prefer EDF Energy to modify the strategy and use two or more smaller-scale campuses instead to lessen potential impacts and to allow for potential legacy use. • Comments were raised relating to the location of an accommodation campus and its operational management (linked to worker behaviour and community effects). 	<p>See Section 5.9, Section 5.10 and Section 7 Main Development Site</p>
Accommodation Strategy: The importance of not only meeting the requirements of the development, but also the future needs of the local community and housing and tourism functions of the area	
<ul style="list-style-type: none"> • There was general support for the strategy of provision of an accommodation campus on the grounds that it would reduce social impacts on surrounding communities and the need for workers to travel. • The importance of not only meeting the requirements of the development, but also the future needs of the local community and housing and tourism functions of the area, was raised. 	<p>See Sections 5.10–5.12</p>

5.9. Current position

5.9.1. This section describes EDF Energy's current position and information gathered about the amount, type, availability and affordability of accommodation in the area around Sizewell C.

a) Accommodation in Suffolk

5.9.2. EDF Energy has been working to build an understanding of the existing stock of accommodation, their characteristics and how affordable and available they would be to workers across the private-rented, tourist sector and owner-occupied sectors. This approach uses public datasets and desk-based research to predict the potential impact that the construction workforce might have on accommodation capacity in the area.

5.9.3. A refined estimate of the amount of different types of accommodation has been produced using 2011 Census data released since the Stage 1 consultation. It has also been developed through engagement with tourist accommodation providers and housing representatives.

i. The private-rented sector

5.9.4. It is anticipated that some non-home-based construction workers would look to the PRS for temporary accommodation during the construction of Sizewell C. The PRS was used by construction workers during the construction of Sizewell B, offering flexible, independent accommodation, mainly for workers in short-to-medium-term positions.

5.9.5. The 2011 Census data indicates that since 2001 there has been a significant increase in the number of private-rented homes in almost all areas of the UK. Between 2001 and 2011, around 12,000 additional private-rented households have been created in the four districts of Suffolk Coastal, Waveney, Ipswich and Mid Suffolk, and the sector now represents 15.2% of all households compared to 10.3% in 2001.

5.9.6. Whilst the overall stock has grown, private-rented housing is not spread evenly throughout the area. There are concentrations in Ipswich and Lowestoft, for example, at a significant distance from Sizewell C. These are likely to be less attractive to non-home-based workers. Evidence suggests that there is more movement within this sector than others.

5.9.7. Along with changes in the size of the PRS in the UK and Suffolk, the role and the function of the market will continue to change in light of current, emerging and potential future Government policy. For example, tax related to second properties and buy-to-let mortgages is likely to have an ongoing effect on the sector nationwide. EDF Energy would use the most readily available information and will continue to work with the local authorities to understand local issues within the market.

5.9.8. EDF Energy has held discussions with SCDC and WDC housing officers to gain a better understanding of the current challenges and characteristics of the private-rented market, and its function in helping to meet housing need. These discussions have highlighted that affordability is now the key reason for households joining the Housing Register in SCDC and WDC. These discussions have focused on housing need and the PRS in Leiston in particular. As the settlement closest to the site it is likely to attract the largest number of construction workers looking for accommodation at peak. It would be particularly important to ensure that the lower 30th percentile of the PRS remains accessible to local people as a way into the housing market. This will be treated in EDF Energy's assessment as the part of the housing market most sensitive to change.

ii. The tourist accommodation sector

5.9.9. A database of tourist accommodation was supplied to EDF Energy by Visit East Anglia in 2012. This included survey information on the location (postcode), sector (e.g. serviced, self-catering), number of units and bedspaces across the East of England. The data has been reviewed based on a number of assumptions about the characteristics and distribution of the non-home-based workforce at peak, and elements of the accommodation itself. For example, its location, whether it is considered available (e.g. due to planning restrictions on year-round use or long-term stays) and whether it is affordable to construction workers. This has led to EDF Energy being able to map tourist bedspaces that may be used by construction workers.

5.9.10. EDF Energy is aware that, in the summer peak, a significant number of bedspaces are occupied by tourists and displacing them may have wider adverse impacts. Feedback from tourism bodies and accommodation providers indicates that occupancy levels are strong and the peak season has lengthened from Easter to the end of August.

5.9.11. Since the Stage 1 consultation, meetings have been undertaken with tourist accommodation providers and have provided useful feedback, including:

- there have been significant changes in the nature of tourism accommodation since Sizewell B was constructed and the tourism market is currently stronger than ever along the Suffolk Coast;
- prices and type of stock differ significantly between locations along the Suffolk coast;
- some accommodation has been significantly improved and moved upmarket in recent years;
- local providers are already used to accommodating contractors related to the Sizewell B outages and other major projects;
- there is a significant bank of ‘un-rated’ tourist accommodation that the database may not have picked up;
- despite a general increase in occupancy there remains significant spare capacity in some areas and sub-sectors.

5.9.12. Where possible, information and feedback gained has been applied to the models to estimate the stock and availability of tourist accommodation on the Suffolk coast. EDF Energy will continue to work with the local authorities and tourist industry stakeholders to understand how the sector is changing and appreciate the concerns within the sector and identify any potential effects.

iii. Affordability in private-rented and tourist accommodation

5.9.13. Estimates of affordability in the tourist sector have been calculated based on monitoring of current average peak and off-peak cost for each type of accommodation and compared to the union-agreed rates of accommodation allowance for non-home-based construction workers of £36 a night (Ref. 5.11). These indicate that a significant amount of tourist accommodation would not be affordable to Sizewell C construction workers (refer to **Table 5.7** and **Figure 5.7**).

5.9.14. EDF Energy has undertaken a study into the affordability of self-catering accommodation in areas east of the A12, where workers are most likely to look for accommodation. This highlighted significant variations in the amount of accommodation that is affordable in, for example, Aldeburgh compared to Leiston. This corroborates information gained from discussions with local authorities and tourism bodies in the area. The assumptions of proportion of affordable accommodation for workers in some locations has been reduced as a result, changing EDF Energy’s assumptions about how the non-home-based workers would be spread across the area.

Table 5.7 Proportion of total affordable and available accommodation for non-home-based workers in the indicative 60-minute maximum commute time area

Accommodation type	% of total stock affordable to non-home-based workers
Caravans	100% (50% available*)
Serviced Accommodation	15%
Self-Catering Accommodation	Local variations

* Availability discount applied to account for planning restrictions on use of caravan sites for construction workers on a year-round basis. Further work will be undertaken in partnership with the local authorities to understand the ability of caravan parks to play a greater role in meeting workers’ needs.

5.9.15. **Figure 5.7** shows the average costs per week of different forms of tourist accommodation at different times of year, and median and lower 30th percentile (Local Housing Allowance rates) costs for rooms in shared homes in the private-rented sector.

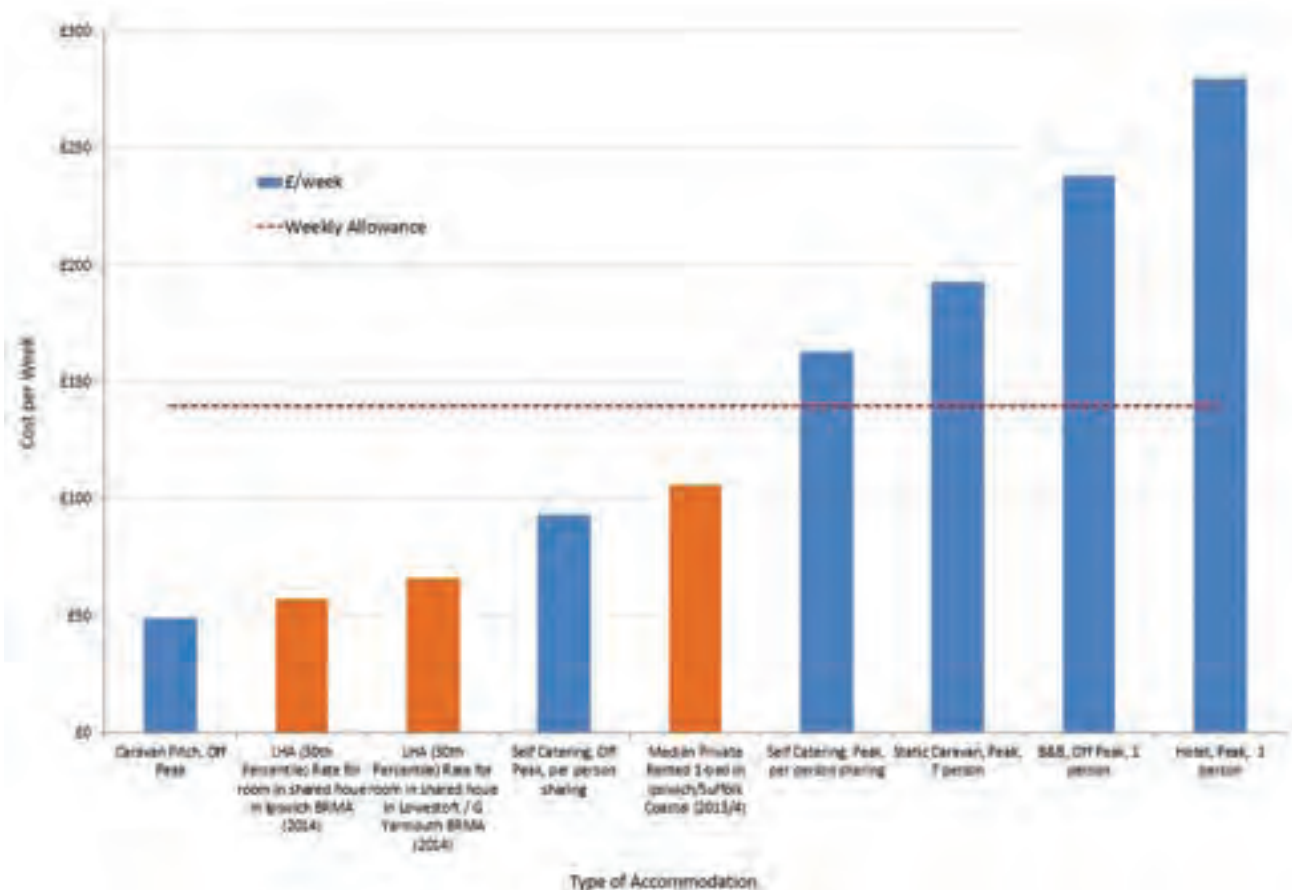
5.9.16. The horizontal line shows the union-agreed accommodation allowance paid to construction workers based on 4 nights per week. Actual pay scales for the Project have not been determined, but the chart uses the current union-agreed accommodation allowance as a benchmark.

5.9.17. This shows that caravans, the PRS and self-catering sectors would be far the most affordable accommodation for Sizewell C workers. On average, serviced accommodation would not be affordable to construction workers, even in the off-peak period, although this disguises a large range from the cheapest (approximately £25 per night) to over £100 per night for the most expensive.

5.10. Updated proposals and emerging approach

5.10.1. This section describes the updated proposals and progress made since the Stage 1 consultation, as well as a summary of assumptions about the size, location and accommodation preferences of the workforce during construction. It also outlines the rationale of preferred options identified since the Stage 1 consultation and the principle that a single accommodation campus immediately adjacent to the construction site is required during the construction phase.

Figure 5.7 Average weekly accommodation costs by sector compared to the allowance for construction workers



a) Project assumptions and objectives

5.10.2. In order to deliver the Project effectively and efficiently, EDF Energy’s overall objective is to ensure that the Project limits any significant adverse local economic or social impacts, whilst optimising local benefits that would arise from the construction and operation of the power station. Any actions would need to meet the Project’s principles to:

- provide a high-quality working and living environment for the workforce during the construction phase; and
- enact a Code of Conduct for the Sizewell C workforce and seek to beneficially assimilate the activity generated by the Project with the local community.

b) Accommodating the workforce

5.10.3. There are a number of good reasons for using existing accommodation to house a significant proportion of the workforce, including:

- the potential to deliver direct economic benefits to local accommodation providers and ‘spin-off’ benefits for other businesses in the local area through spending, especially where significant spare capacity exists;
- there is a high-level of interest from local providers to offer accommodation to the construction workforce; and
- the demand created by the Project should help to stimulate improvements in the existing housing and tourist stock, generating legacy benefits.

5.10.4. However, there is limited tourist accommodation available close to the site, especially during the peak season from Easter to September, and EDF Energy does not want to take scarce accommodation and, therefore, impact the tourist industry.

5.10.5. The location and type of accommodation sought by the construction workforce depends upon a range of factors, for example, the length of stay, salary, role and family circumstances of the individuals concerned and whether they plan to move to the local area on a permanent basis.

5.10.6. The key questions in determining workers' demand for particular accommodation are:

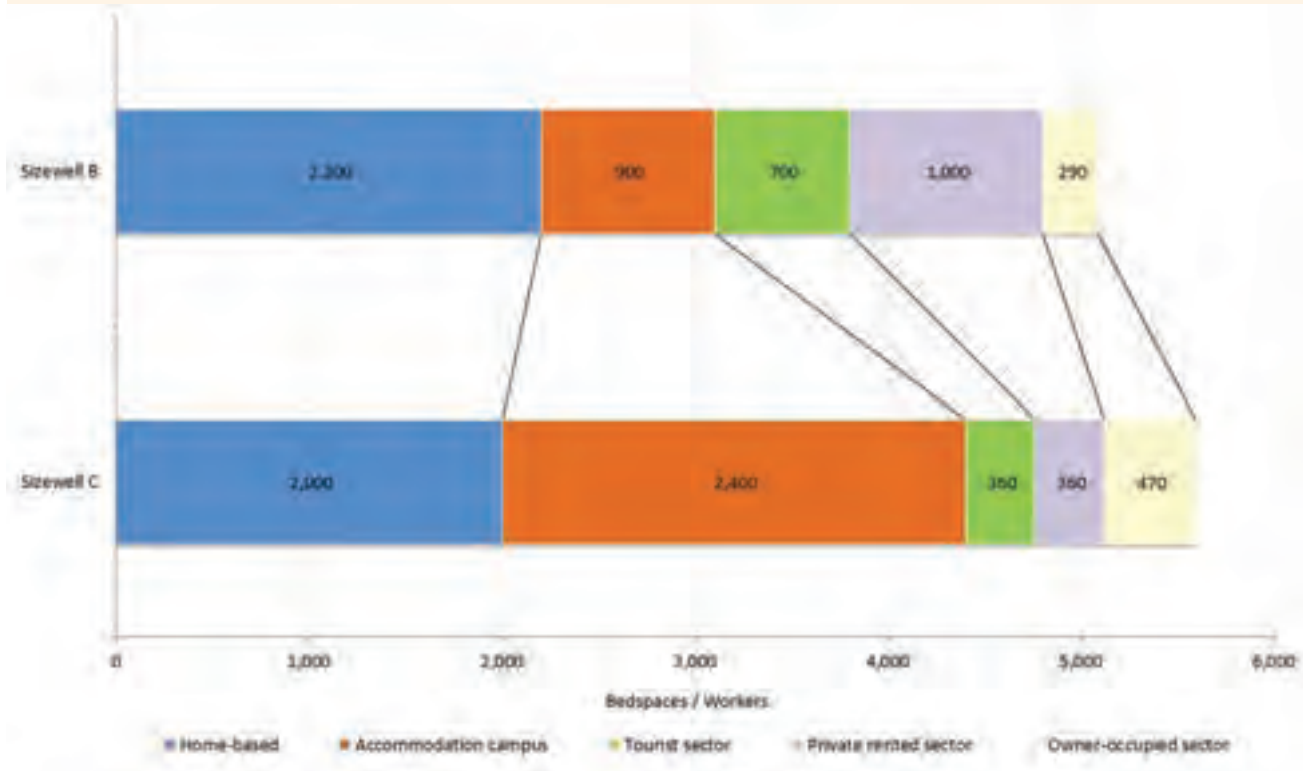
- what type of accommodation is it? (i.e. long-term versus short-term, or serviced versus self-catered)
- how close to the site is it?
- can workers afford it?

5.10.7. The dedicated accommodation campus or other forms of EDF Energy-provided accommodation would not be suitable or attractive options for all workers. A number would prefer to find local accommodation through other routes. This has been assessed for three sectors: tourism accommodation (both serviced and self-catered), the PRS and owner-occupied housing. These breakdowns have then been used as an input to the Gravity Model, which has been used to estimate where the non-home-based workers who are not in the accommodation campus may live.

5.10.8. The central assumptions are set out in **Figure 5.8**. This figure also compares the peak assumptions for Sizewell C against the monitored peak at Sizewell B. In addition to around 2,000 workers being existing residents, up to 2,400 are assumed to live in the accommodation campus with the remainder split between the tourism, private-rented and owner-occupied sectors.

5.10.9. The breakdown is partly informed by experience of the overall sector split at Sizewell B, initial discussions with HPC contractors and development of both HPC and Sizewell C workforce profiles.

Figure 5.8 Estimated accommodation choices by construction workers at peak at Sizewell B and Sizewell C (rounded) (Ref. 5.12)



5.10.10. The main differences between the accommodation workers used at the peak of construction at Sizewell B and predicted for Sizewell C are related to:

- the size of the accommodation campus, which was smaller for Sizewell B (900 bedspaces); and
- the fact that there was a large caravan park for construction workers operating during the peak of Sizewell B, captured under the definition of ‘tourist’ accommodation.

c) Accommodation campus

5.10.11. The accommodation campus would play an important role in attracting the high-quality workforce required to deliver such a large and complex Project. It would meet worker needs and aspirations and help manage worker behaviour and impacts on the wider community, including traffic impacts.

i. Delivering a NSIP

5.10.12. EDF Energy’s Project Vision outlines the intention to ‘deliver a nuclear power station at Sizewell C that will make a major contribution to the nation’s low-carbon energy needs’ (refer to **Section 2 Vision and Objectives**). The Project would be competing with a number of other large infrastructure projects in the UK and Europe, including energy and nuclear projects, and would need to be attractive to draw in the best possible workforce.

5.10.13. While the Project would endeavour to optimise local employment where possible, the skills required would mean that part of the workforce would need to be drawn in to the area from elsewhere. EDF Energy’s current estimate is that around 3,600 of the workers, at peak construction, would be drawn from outside the area and need accommodation for varying lengths of time in the local area.

5.10.14. The most effective and practical way to achieve the national need for the construction of a large energy infrastructure project, in the context of a large non-home-based workforce, is through the provision of a single, high-quality, on-site accommodation campus where a significant proportion can stay for varying lengths of time to complete their tasks.

5.10.15. This approach takes into account the substantial weight attached by policy to the ability to build and deliver nationally important infrastructure in a timely and cost-effective manner, while also creating a strong monitoring and mitigation strategy (including an accommodation strategy) that would help to avoid and reduce adverse effects in the local area.

ii. A single, on-site accommodation campus

5.10.16. Based on evidence from contractors at HPC, along with experience on Hinkley Point B and Sizewell B, EDF Energy has identified that it is preferable to have as many workers accommodated on-site as possible. It is, therefore, proposing to progress a single campus within walking distance of the construction site, rather than dispersed multiple campuses, or a single campus away from the site. This is because:

- it greatly reduces the number of journeys on local roads, as well as time associated with travelling to and from the site;
- it increases productivity and reduces potential health and safety risks associated with long travel and work times; and
- it is vital that key workers are resident on-site, so they can be flexible in terms of the out of hours working that may be necessary to respond to emerging site needs and maintain construction productivity and progress.

5.10.17. A single site campus would enable EDF Energy to provide the most flexible accommodation offering, making it easy for workers and contractors to manage their accommodation needs. The size would generate a critical mass that would in turn allow the provision of a range of amenities to workers. This should make the campus environment more attractive and encourage workers to stay on site, leading to fewer potential problems, in terms of worker behaviour and community disruption.

5.10.18. By way of comparison, the Sizewell B accommodation campus was widely regarded as a success, in that it generated minimal disturbance and provided an effective means of managing the workforce. The campus also proved very popular with construction workers, with a waiting list throughout the construction phase.

5.10.19. EDF Energy has considered the alternatives to a single, on-site accommodation campus. It has concluded that an off-site campus, either as an alternative, or an addition to a smaller, on-site accommodation campus, would be unlikely to make a significant difference in terms of any localised community impacts around the main development site. It would however lead to the reduction or loss of the many benefits of an on-site accommodation campus in terms of reduced journeys and wider worker management.

5.10.20. Providing a single, on-site accommodation campus would also help to mitigate the impacts of large groups of construction workers in a number of otherwise small rural communities. A multiple-campus option would spread the workforce across a wider area and increase the difficulty in managing effects on those communities, as well as increasing traffic through more (and longer) bus journeys across multiple shifts.

5.10.21. By having accommodation adjacent to the site, workers would be able to walk to work, and the effects on traffic that would be generated by a multiple-campus approach would be avoided. This approach is supported by the Planning Inspectorate Panel's report from HPC. In determining the development consent order DCO granted in 2013, the Planning Inspectorate Panel recommended to the Secretary of State (paragraph 4.231) that there are:

“significant advantages for the project in housing workers as close as possible to the site. In that way they would be readily available at short notice to tackle any emergencies that arise, and undertake ‘out of hours’ tasks. The time they would spend travelling to work would be reduced. Whilst this would no doubt be offset in part by an additional need to travel when not working between the site and other nearby centres for leisure and other purposes, it nonetheless seems to us that overall there would be a net reduction in vehicle movements.”

5.10.22. Some respondents to the Stage 1 consultation suggested that the campus(es) should be located in Ipswich and/or Lowestoft, stating that these locations would be better able to cope with the influx of a large numbers of workers. However, experience from other projects indicates that these locations are too far from the site to be attractive to non-home-based-workers (at least 36 minutes to Lowestoft and 46 minutes to Ipswich by car, but considerably longer via park and ride or direct bus services). As EDF Energy cannot enforce workers' accommodation choice, it is likely that a campus in any of these locations would be under-utilised. In turn, this could lead to increased pressure on tourist and PRS accommodation close to site.

5.10.23. Other respondents were concerned that provision of an on-site accommodation campus would limit economic benefits to local businesses. The operation of the

accommodation campus would bring economic benefits, including the potential for local businesses to supply goods and services used by the accommodation campus (e.g. administration, security, catering and other support functions) which have a high local contingent and therefore bring economic benefits for residents and small businesses.

iii. Accommodation campus size

5.10.24. At Stage 1, an estimate of around 2,000-3,000 bedspaces was considered for the capacity of the accommodation campus. EDF Energy has reviewed the appropriate size of the accommodation campus following feedback from the Stage 1 consultation, noting that a degree of uncertainty is inherent in estimating the accommodation demand generated by the Project.

5.10.25. This estimate has been refined to up to 2,400-bed spaces in order to strike the right balance between the following considerations:

- operational requirements (i.e. the ability to deliver the Project to the highest standards and on time) and the benefits of providing substantial campus accommodation for attracting the best workforce;
- an understanding of workforce and contractor needs and preferences (i.e. to be close to the site and have sufficient facilities and amenities), as derived from other projects including HPC;
- the scale of the anticipated peak workforce, duration of peak and proportion of local recruitment;
- the estimated level of ‘spare’ accommodation capacity in the area - striking a balance between placing too much pressure on existing stock and maximising the economic benefits of a non-home-based workforce in the area by using otherwise spare tourist accommodation;
- the capacity of the site to provide a safe, secure facility; and
- EDF Energy's desire to minimise traffic disruption from workers travelling to and from the site and effects on local communities including concerns about safety, community cohesion and use of community facilities and space.

5.10.26. Section 7 Main Development Site describes the progress made on the siting and masterplanning of the proposed accommodation campus since the Stage 1 consultation. This includes information on the rationale for siting and design considerations including landscaping.

iv. Accommodation campus design and facilities

5.10.27. The accommodation campus would be competitively priced and would be linked to access to a number of key facilities and characteristics to make it attractive to workers. Facilities and services are likely to include: sports facilities, a bar, occupational health, and security and administration services, which would also help to reduce potential community impacts.

5.10.28. Having identified a preferred location and size for the accommodation campus, EDF Energy is now consulting on two main options for the masterplan configuration of the campus:

- Option 1: campus development east and west of the Eastbridge Road; and
- Option 2: built form (e.g. accommodation buildings, parking, amenity building etc.) on the east side of Eastbridge Road, with sub-options:
 - (i) the sports pitches on the west side of Eastbridge Road; or
 - (ii) the sports pitches remotely located, on a site yet to be identified but for which feedback from stakeholders is sought.

5.10.29. Details of the current design for these options are included at **Section 7 Main Development Site**. The key difference in terms of socio-economic effects is likely to focus on the on or off-site location of sports facilities. Locating the sports facilities at the campus site would encourage workers to use them instead of other facilities elsewhere, reducing traffic effects on local communities but also potentially reducing the economic effect of off-site expenditure by campus-based workers. Locating the sports facilities outside of the accommodation campus and closer to Leiston would provide community benefits if made accessible to the public, and could create a legacy benefit for the community after the construction phase is complete.

5.11. Project effects

5.11.1. This section outlines the areas where significant positive and negative effects are considered most likely to arise, based on the size and characteristics of the workforce, the existing accommodation stock, feedback from the public during the Stage 1 consultation and engagement with the local authorities and other relevant stakeholders.

a) Workforce distribution

5.11.2. As set out previously, the central case currently includes an assumption of a single 2,400-bed accommodation campus at the site, around 2,000 home-based workers and around 1,200 workers split between the tourist, private-rented and owner-occupied sectors. This is subject to ongoing refinement and sensitivity testing. This potential distribution of non-home-based workers across the area has been used to identify areas of sensitivity and to develop an early indication of how and where the mitigation plans within the accommodation strategy might be implemented to the greatest effect in terms of both locations and projects (**Section 5.12**).

5.11.3. **Tables 5.8–5.10** show the expected distribution of workers in the tourist, private-rented and owner-occupied sectors in the area immediately around the site, the Districts of Suffolk Coastal and Waveney and elsewhere in Suffolk and beyond.

i. Workers living in tourist accommodation

5.11.4. **Table 5.8** compares the distribution of workers in tourist accommodation from the current Gravity Model with the identified distribution at the peak of construction at Sizewell B, by ward.

Table 5.8 Estimated location of construction workers at peak in the tourist sector compared to the Sizewell B experience (numbers may not add due to rounding)

Non-home-based workers in tourist accommodation	Sizewell C Estimate		Sizewell B	
Leiston, Aldeburgh and Saxmundham	79%	283	93%	656
...of which Leiston	14%	52	56%	395
Rest of Suffolk Coastal	19%	67	1%	7
Waveney	2%	9	5%	35
Elsewhere	<1%	1	1%	7

5.11.5. Table 5.8 also shows a concentration of non-home-based workers in areas close to the site with more accommodation. The proportion of workers occupying tourist accommodation in Leiston is lower than for Sizewell B because of the extensive use of a dedicated caravan site facility in Leiston during its construction and the greater capacity of the proposed on-site accommodation campus.

5.11.6. It is likely that caravans would again be popular with some workers, especially in the early years of construction. Caravans are a cheaper and more flexible option than hotels and bed and breakfasts. Therefore, they tend to be preferred by non-home-based construction workers. It is critical that any approach to workers using caravans is well-managed in consultation with local authorities and reflects the Project's commitment to minimise adverse effects on local communities.

5.11.7. EDF Energy is working with the local authorities to examine the issues around the potential for the provision of temporary caravan sites or extensions to existing sites in a managed, sustainable way to provide flexibility as part of the balanced accommodation strategy. In addition, as part of this consultation, EDF Energy is consulting on the provision of a caravan site on the land to the east of Eastlands Industrial Estate in Leiston (refer to **Section 7 Main Development Site**).

5.11.9. Table 5.9 shows that the number of workers likely to occupy PRS accommodation in Leiston ward is far lower than experienced at Sizewell B, due to the presence of a larger, single, on-site campus. The Gravity Model estimates that a slightly greater proportion of the workforce choosing to stay in private-rented accommodation would be accommodated beyond the Leiston, Aldeburgh and Saxmundham area than for the construction of Sizewell B; however the absolute figures are again much lower.

iii. Workers buying homes

5.11.10. It is estimated that by the time of peak construction some workers would have moved to the area with their families. Some of these would be operational staff, while others would be long-term construction workers, including managers and supervisors. Based on the Sizewell B experience, the total proportion of non-home-based workers in the owner-occupied category is estimated to be in the region of 10% of the workforce at peak.

5.11.11. The distribution of non-home-based workers in the owner-occupied sector is based on the total stock of family-sized (i.e. 2+ bedroom) dwellings, as informed by the 2011 Census. **Table 5.10** compares the distribution of workers in owner-occupied accommodation from the

Table 5.9 Estimated location of construction workers at peak in the private-rented sector compared to the Sizewell B experience (numbers may not add due to rounding)

Non-home-based workers in PRS	Sizewell C Estimate		Sizewell B	
Leiston, Aldeburgh and Saxmundham	47%	169	64%	640
...of which Leiston	28%	99	29%	290
Rest of Suffolk Coastal	28%	99	11%	110
Waveney	12%	42	17%	170
Elsewhere	14%	49	8%	80

ii. Workers living in private-rented accommodation

5.11.8. Table 5.9 compares the distribution of workers in PRS accommodation from the current Gravity Model with the identified distribution at the peak of construction at Sizewell B by ward.

current Gravity Model with the identified distribution at the peak of construction at Sizewell B, by ward.

5.11.12. Spread over a number of years, this would be within the overall turnover and capacity of the local housing market, and may provide a valuable boost if the housing market is subdued.

Table 5.10 Estimated location of construction workers at peak in the owner-occupied sector compared to the Sizewell B experience

Non-home-based workers in the owner occupied sector	Sizewell C Estimate		Sizewell B	
Leiston, Aldeburgh and Saxmundham	79%	283	93%	656
...of which Leiston	14%	52	56%	395
Rest of Suffolk Coastal	19%	67	1%	7
Waveney	2%	9	5%	35
Elsewhere	<1%	1	1%	7

b) Accommodation capacity

5.11.13. The PRS, tourist sector and owner-occupied sectors offer a certain amount of accommodation within commuting distance from the Project’s construction site.

5.11.14. It is clear that simply identifying the total stock of accommodation does not go far enough in determining the amount of ‘spare’ capacity. There are several variables, including location and amount of homes, affordability and demand/availability, which could affect the capacity of accommodation markets. The preferences of non-home-based construction workers is also a critical aspect of this. Workers usually prefer accommodation as short a distance from their workplace as possible if reasonably priced; this could increase constraints on availability locally.

5.11.15. The total non-home-based workforce at peak is expected to be around 3,600 people. The provision of up to 2,400 beds in an accommodation campus at the site reduces demand from those workers for accommodation in the PRS and available tourist accommodation. EDF

Energy believes this strikes an acceptable balance between addressing the needs of the Project and reducing adverse effects on local accommodation.

5.11.16. Tables 5.11 and 5.12 show the proportion of available and affordable bedspaces in the tourist and private-rented sectors that workers are expected to take in the areas around the site, and in the wider Districts of Suffolk Coastal and Waveney and beyond.

i. Capacity in tourist accommodation

5.11.17. In terms of tourist bedspaces, demand for up to around 32% of all bedspaces could occur in Leiston, where the stock of bedspaces is more limited. Other areas close to the construction site (Aldeburgh, Yoxford and Saxmundham) are estimated to expect demand for between 10-20% of affordable, available accommodation at the peak of construction. This represents a far smaller proportion of all stock in areas like Aldeburgh, where a large part of the market has already been discounted from this assessment.

Table 5.11: Gravity Model capacity effects in tourist accommodation

Ward	Non-home-based construction workers at peak	Accommodation supply available (discounts applied) (bedspaces)	% of total supply therefore used by construction workers
Aldeburgh	195	1049	19%
Saxmundham	35	233	15%
Yoxford	40	335	12%
Leiston	50	160	32%
Walberswick and Wenhaston	< 10	263	4%
Snape	< 10	161	5%

* Source: Visit East Anglia/NVG Accommodation Database, EDF Energy Gravity Model

Table 5.12 Gravity model capacity effects in the private rented sector

Ward/Area	Non-home-based construction workers at peak	Accommodation supply (bedspaces)	% of total supply therefore used by construction workers
Aldeburgh	30	534	6%
Saxmundham	35	715	5%
Yoxford	15	327	4%
Leiston	100	1183	8%
Walberswick and Wenhaston	< 10	267	2%
Snape	< 10	327	2%

* Source: Census 2011 (Ref. 5.3), EDF Energy Gravity Model (Rounded)

ii. Capacity in private rented accommodation

5.11.18. The non-home-based construction workforce would be expected to take just less than 10% of all private-rented bedspaces in some areas close to the site, with the greatest effects seen in Leiston at the peak of construction.

5.11.19. Whilst the total stock within the indicative 60-minute maximum commute area is substantial, the decisions made by non-home-based workers in terms of location (distance to site), alongside price and availability of accommodation, result in very different effects on capacity at a sub-district level. This also illustrates the local effect that an on-site accommodation campus has on mitigating otherwise negative effects on local capacity. Reducing the size and location of the accommodation campus would be likely to have significant effects on these markets given workers' preference to live close to their workplace, potentially resulting in higher take-up of PRS housing in Leiston.

5.11.20. The assessment of capacity effects uses the peak workforce, representing the highest level of accommodation demand. However, there would be differences in the type of accommodation likely to be in demand at different stages of the construction phase. For example, during early years and earthworks stages, due to the skills profile and earnings of workers contracted, there would be more demand for lower cost accommodation such as caravans.

iii. Leiston: a case study

5.11.21. Leiston is likely to experience the greatest effects on the capacity of the PRS overall, as it is anticipated that around 100 workers would take private-rented accommodation in Leiston at the peak of construction. This

is despite Leiston having a higher proportion of dwellings in the PRS than other areas, and is due to a number of factors:

- Workers:
 - recent experience suggests that construction workers regularly look to share dwellings, with 1/2-bed dwellings popular. Workers are likely to be looking to rent properties at the lower end of the market to save money; and
 - workers would, on average, be able to spend more than Local Housing Allowance rates, on which Housing Benefit is measured.
- Housing need:
 - Leiston has a housing waiting list of around 160 households, of which around 25 are in 'priority need' i.e. Band A or Band B (based on Suffolk Coastal District Council (June/July 2015) Housing Register); and
 - the majority of these households are in need of 1 and 2 bedroom accommodation and cite affordability as a key reason for housing need.

5.11.22. As such, there is a potential cross-over between low-income households in or near Leiston being in housing need due to affordability or other factors and workers looking for temporary accommodation.

5.11.23. EDF Energy has worked closely with the local authorities in order to build a detailed understanding of the level of housing need and to identify likely significant effects of the Project in Leiston, and to develop a methodology that will be applied to other areas nearby. This will inform the emerging measures outlined below to identify, monitor and avoid or mitigate significant adverse effects in the housing market.

5.12. Monitoring the effects and maximising benefits

5.12.1. EDF Energy recognises that a number of people and organisations are concerned about the impact of its construction workforce on the local area. This section provides details of how EDF Energy would continue to develop the impact assessment and commit to an accommodation strategy to monitor and manage the potential beneficial and adverse effects of the Project.

a) Accommodation strategy

5.12.2. The single on-site accommodation campus would make a large contribution to limiting traffic and adverse socio-economic effects. EDF Energy will work with local authorities to ensure an organised and robust approach to minimising effects from its workforce on community cohesion and accommodation capacity.

i. Accommodation management

5.12.3. It is anticipated that a dedicated accommodation management office would be set-up. It would provide a signposting service to workers and contractors where necessary, linking workers with accommodation. If capacity issues are raised in a location, newly registering workers would be re-directed away from that area. In this way, while not directly placing workers in certain locations, EDF Energy would provide a flexible and responsive approach to managing impacts. Should there be an opportunity for group bookings of a significant size at a certain location, or a concentration of construction workers at a certain location, EDF Energy may look to develop options for responsive measures to improve transport to the site (e.g. by providing a direct bus).

5.12.4. It is anticipated that an accommodation management office would work with local communities to ensure that any issues are identified and addressed at an early stage. This could be achieved through, for example:

- regular dialogue with key local stakeholders in the business, tourism and private-rented sectors to ensure that any emerging issues are identified and addressed at an early stage;
- developing an accommodation database, for local residents and providers to register their details and for EDF Energy to pass this information on to contractors.

5.12.5. EDF Energy recognises that there is a large amount of 'latent' accommodation in the area. This includes un-rated tourist accommodation, rooms for let in private homes, and accommodation new to the market each year. Rooms in private homes are likely to be a key potential source of accommodation, particularly as from May 2016 the level of 'Rent a Room' relief (income from room renting non-taxable) increased from £4,250 to £7,500 giving significant financial incentives to households with a spare room.

5.12.6. Latent accommodation would, in due course, offer an opportunity to mitigate negative effects on tourist and private-rented sector capacity, and would be subject to the same rules on quality and safety. Advertising for similar accommodation at HPC generated a significant response with around 1,500 suitable bedspaces currently listed in the vicinity of the construction site.

ii. Enhancing supply

5.12.7. EDF Energy continues to work with the local authorities to explore the most appropriate options to mitigate any negative effects. Measures may include facilitating bringing empty homes back into use through renovation and options could be explored to make conversions of existing stock more favourable.

5.13. Next steps

5.13.1. In terms of next steps, EDF Energy will:

- ensure that the key sensitivities of both private and tourist accommodation markets have been identified and continue to develop and refine the accommodation baseline both with new data and through on going engagement with relevant stakeholders;
- continue to refine assumptions on where the workforce is likely to live, which will feed into work outlined in the early part of this section on possible implications for community facilities and public services;
- continue to collaborate on developing effective impact assessment and mitigation strategies;
- continue to explore options to address policy constraints on temporary caravan sites, or the potential for increasing capacity at tourist accommodation providers close to the main development site.

6. Transport

6.1. Introduction

6.1.1. The construction of Sizewell C would involve the daily movement of large numbers of construction workers as well as the movement of large amounts of building materials and equipment. EDF Energy's Vision is to deliver the Sizewell C Project (the Project) so that adverse transport effects on the environment and local communities are limited through mitigation, where reasonably practicable, in advance of effects being felt.

6.1.2. In practice, that means considering safety on the local highway and transport networks and designing a transport strategy that limits and mitigates effects during construction and operation to take full account of local environmental, economic and social issues. This approach recognises concerns about the traffic effects of the construction phase, given the nature of the local road network. A separate Environmental Impact Assessment (EIA) would be undertaken at the end of the operational phase, prior to decommissioning works commencing. Refer to **Section 12 Related Assessments and Approaches** for details on the approach to EIA.

6.1.3. In developing the transport strategy for the Project, EDF Energy has sought to take account of the sensitivity of the local highway network in the development and design of its proposals. EDF Energy has sought opportunities to limit the traffic and traffic-related effects of moving goods and people using non-road based transport, where feasible and cost-effective, and through the careful siting and design of proposals. These principles have guided the transport proposals and approaches in accordance with EDF Energy's wider vision and objectives for the Project (refer to **Section 2 Vision and Objectives**).

6.1.4. This section sets out EDF Energy's transport strategy for the construction phase of the Project and the basis for the associated transport proposals. It describes how EDF Energy proposes to manage the daily movement of the construction workforce to and from the main development site, how the freight requirements of the construction phase would be managed, and how the various measures proposed would help to limit traffic impacts on the local road network.

6.1.5. This section also sets out the latest position on the traffic modelling conducted to assess the traffic impacts of the construction phase. It includes the latest estimates of the additional traffic that the Project would generate during the period of peak construction, when the maximum number of construction workers would be on-site. This is anticipated to be in the middle of the construction phase,

assumed to be around 2024, and to last one to two years. For robustness, EDF Energy has assumed that the maximum number of workers would coincide with the peak number of HGV movements. Refer to **Section 5 Socio-economics** for details on the likely profile of worker activity.

6.1.6. Additional modelling analysis would be provided in the Stage 3 consultation to identify the impacts of construction traffic across a wider study area. This would identify whether there is a need for any mitigation additional to that set out in **Section 11 Highway Improvements**.

6.1.7. Details of the main transport issues raised during the Stage 1 consultation and how these are being addressed are also detailed in this section.

6.1.8. EDF Energy's proposals for associated development form an essential part of the transport strategy for the construction phase. While each of the proposed transport-related associated developments are briefly described in this section, **Sections 8–11** provide further detail on the off-site associated developments; specifically **Section 8 Rail**; **Sections 9 and 10 Northern and Southern Park and Ride**; and **Section 11 Highway Improvements**.

6.1.9. This section is structured as follows:

- **Section 6.2** details the policy context within which the transport issues relating to the Project would be considered;
- **Section 6.3** considers a number of approaches to managing and reducing traffic associated with the movement of the construction workforce;
- **Section 6.4** describes the approach to managing material and freight movements by sea, rail and road; as well as information on EDF Energy's material quantities estimates;
- **Section 6.5** details the work undertaken to develop a traffic model of the existing highway network, and the future network without the Project;
- **Section 6.6** summarises the approach taken in the modelling related to the traffic generated by the construction of Sizewell C;
- **Section 6.7** describes the potential traffic impacts across the modelled area;
- **Section 6.8** sets out the noise and traffic emissions assessment findings; and
- **Section 6.9** describes the next steps that will inform the development of the transport strategy and related assessments (i.e. the Transport Assessment).

6.1.10. This section focusses on the construction phase of the Project, as this would generate substantially greater workforce and freight related movements than the operational phase. However, in further work following the Stage 2 consultation the much lower operational traffic impacts of Sizewell C operation will be considered, together with any requirement for associated mitigation.

6.2. National policy

a) EIA and Transport Assessment

6.2.1. NPS EN-1 (Ref. 1.1) provides guidance on the comprehensive process of EIA which must be followed by the applicant for any project that is subject to the European EIA Directive 85/337/EEC (Ref. 6.1). An Environmental Statement must be submitted as part of the application for development consent for all such EIA development projects. EDF Energy will follow the process for this Project, as described in **Section 12 Related Assessments and Approaches.**

6.2.2. The issue of transport is dealt with in Section 5.13 of the National Policy Statement (NPS) EN-1. This states that if a project is likely to have significant transport implications, the applicant's Environmental Statement must include a Transport Assessment utilising the WebTAG methodology stipulated in Department for Transport guidance. WebTAG is a framework used to appraise transport projects and proposals in the UK. It provides a tool for ensuring that transport studies are comparable and consistent. WebTAG is based on economic benefit and environmental impact techniques described in the Design Manual for Roads and Bridges (DMRB). There are five high-level criteria that are assessed: economic, safety, environmental, accessibility and integration.

b) Guidance in EN-1

6.2.3. Section 5 of NPS EN-1 also provides guidance on the principles and approaches that should apply to the transport and traffic impacts associated with an energy Nationally Significant Infrastructure Project (NSIP). Paragraph 5.13.4 states:

“Where appropriate, the applicant should prepare a travel plan including demand management measures to mitigate transport impacts. The applicant should also provide details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.”

6.2.4. Paragraph 5.13.8 notes that a new energy NSIP may give rise to substantial transport impacts on the surrounding transport infrastructure and that, if this is the case, the applicant should seek to mitigate these impacts. Furthermore, clear direction is given on mitigation measures as follows (paragraph 5.13.8):

“Where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts.”

6.2.5. It goes on to state:

“The IPC [now Secretary of State] should have regard to the cost-effectiveness of demand management measures compared to new transport infrastructure, as well as the aim to secure more sustainable patterns of transport development when considering mitigation measures.” (paragraph 5.13.9)

“Water-borne or rail transport is preferred over road transport at all stages of the project, where cost-effective.” (paragraph 5.13.10)

6.2.6. Traffic demand management measures in this context can be broadly defined as promoting the use of alternatives to single occupancy private car use and road-borne freight movements.

6.2.7. When referring to transport impacts the policy states (paragraph 5.13.7):

“Provided that the applicant is willing to enter into planning obligations or requirements can be imposed to mitigate transport impacts identified in the NATA/WebTAG Transport Assessment, with attribution of costs calculated in accordance with the Department for Transport’s guidance, then development consent should not be withheld, and appropriately limited weight should be applied to residual effects on the surrounding transport infrastructure.”

6.2.8. EDF Energy will prepare a Transport Assessment in line with the requirements of EN-1 and the Department for Transport’s WebTAG and Transport Assessment guidance. This assessment will demonstrate that demand management techniques have been fully considered (and linked to the travel plan) to mitigate potentially intensive demand for travel to site, and takes account of operationally reasonable and cost-effective measures that may be proposed in relation to the delivery of the Project.

6.3. Transport strategy for the construction workforce

a) Overall strategy

6.3.1. The peak construction workforce for Sizewell C is estimated to be around 5,600 workers and a further 500 associated development operational workers, as indicated in **Section 5 Socio-economics**. At the Stage 1 consultation, EDF Energy proposed a number of approaches to managing and reducing the daily traffic associated with the movement of the construction workforce to and from the construction site during the peak years of construction. These included:

- options for a near site accommodation campus, helping to significantly reduce the number of workforce journeys through towns and villages close to the construction site;
- two park and ride developments, one for construction workers approaching Sizewell from the north on the A12 and the other for those approaching from the south on the A12;

- direct bus services operating from Ipswich and Lowestoft; and
- bus pick-up services for workers using rail services on the East Suffolk Line.

6.3.2. Although there were many and varied views on the specific site options presented in the Stage 1 consultation, and queries around how some of the proposals would work in practice, the principle of these elements of EDF Energy’s transport strategy received support. It was recognised that these elements have the potential to reduce the traffic impacts which would otherwise occur. These elements of EDF Energy’s Stage 1 consultation are therefore retained in this Stage 2 consultation.

b) Location of the construction workforce

6.3.3. The construction workforce for Sizewell C would comprise a mixture of:

- home-based workers who are already resident in the local area or region and who would commute to and from the site from their existing home on a daily basis; and
- non-home-based workers who do not currently live in the local area or region and would find accommodation in the area during the construction phase. Many of these workers would be resident in an accommodation campus provided by EDF Energy (refer to **Section 5 Socio-economics** and **Section 7 Main Development Site**). Others would find their own accommodation in the local area, for example in private-rented, tourist or caravan accommodation.

6.3.4. In order to develop a suitable strategy for managing construction workforce movements, and to assess the likely traffic impacts of Sizewell C, it is necessary to estimate the residential location of the construction workforce. For this purpose a Gravity Model of the Sizewell C workforce has been developed, which is described in **Section 5 Socio-economics**.

c) Park and ride proposals

6.3.5. EDF Energy considers that the geographic distribution of the workforce estimated by the gravity modelling work continues to support the justification for two park and ride developments to help reduce traffic from construction workforce movements. One would intercept traffic travelling on the A12 from the south, and one would intercept traffic travelling on the A12 from the north. Both park and ride developments would intercept traffic movements from locations west of the A12.

6.3.6. EDF Energy presented a number of site options for northern and southern park and ride developments in the Stage 1 consultation. The purpose of both park and ride sites remains to reduce construction worker traffic on the A12 between the park and ride sites at Wickham Market and Darsham and on the B1122 between Yoxford and the construction site, including at Theberton and Middleton. The northern park and ride would also reduce construction worker flows through the villages of Blythburgh and Westleton. Similarly, the southern park and ride would reduce these flows through Snape and Tunstall on the B1069, Leiston and surrounding settlements.

6.3.7. Following analysis of the Stage 1 consultation responses and further work on the park and ride site options, EDF Energy's preferred site for the southern park and ride is at Wickham Market (now proposed at around 900 car parking spaces) and the preferred site for the northern park and ride is at Darsham (proposed at around 1,000 spaces). The Gravity Model estimate of the residential distribution of the peak construction workforce has informed the proposed sizing of the park and rides.

6.3.8. The rationale for selection of the preferred sites, along with further information on the proposals, is detailed in **Section 9 Northern Park and Ride** and **Section 10 Southern Park and Ride**.

i. Frequency and routing of park and ride buses

6.3.9. The frequency and timing of park and ride buses would depend on the shift patterns adopted during the construction phase and the number of workers to be moved during the shift changeover periods. A frequent service would operate during staff changeover periods with a reduced skeleton service outside these hours. The working patterns anticipated for the construction phase are unchanged since the Stage 1 consultation, as set out in **Section 5 Socio-economics**. Bus services between the northern park and ride site at Darsham and the construction site would travel on the A12 and the B1122. Services between the preferred southern park and ride site at Wickham Market have also been assumed to use the A12 and B1122 designated route to minimise journey delays and avoid residential areas in Leiston.

ii. Implementation of the park and ride strategy

6.3.10. The objectives of the park and ride proposals received widespread support in response to the Stage 1 consultation, but many respondents queried how the park and ride facilities would be operated and their use enforced in practice. EDF Energy recognises the importance

of developing and implementing approaches to ensure the effective delivery of the park and ride facilities. The detail of this will be developed further as part of the travel planning work for the construction phase, as well as drawing on learning from the Hinkley Point C (HPC) Project which also adopts the use of park and ride for the majority of the workforce.

6.3.11. The park and ride strategy includes an actively managed parking permit system for the construction workforce. This would limit and control the allocation of permits for the car park on the main development site during construction and require workers without a parking permit to use their allocated park and ride site, a rail pick-up or a direct bus service. Compliance with a Travel Plan and an associated parking strategy would be a requirement of all construction employees and contractors working at the construction site.

d) Direct bus services

6.3.12. At the Stage 1 consultation, EDF Energy indicated that it expected to run direct bus services from central Ipswich and Lowestoft during the peak years of construction. This remains a part of EDF Energy's plans and these services would be an alternative to the use of park and ride or local rail services for workers living in these locations.

6.3.13. The frequency and routing of any direct bus services would remain flexible to adjust to patterns of demand that arise during the construction phase. At this stage, it has been assumed that a regular service would be provided from both Ipswich and Lowestoft during staff changeover periods, and that a minibus service, to and from Ipswich, would also be provided outside of staff changeover periods for approved visitors to the construction site and for visitors to, and residents of, the accommodation campus.

6.3.14. Direct bus services from Ipswich and Lowestoft would use the A12 and then the B1122 to reach the main development site. These routes would minimise the potential for effects on local villages and give an approximate one-way journey time of 46 minutes from Ipswich and 36 minutes from Lowestoft.

6.3.15. EDF Energy's traffic modelling continues to assume, as indicated at the Stage 1 consultation, that 200 workers could travel to and from the construction site by direct bus from Lowestoft and Ipswich. EDF Energy continues to consider that this is a conservative assumption and that, in practice, it may well be possible to move more workers in this way.

e) Total number of daily bus movements

6.3.16. In total, EDF Energy has estimated that up to 350-400 daily bus movements (175-200 return journeys) could occur at peak construction. These figures combine both park and ride and direct bus movements. The majority of bus movements would be from the park and ride facilities and would occur at staff changeover periods. EDF Energy anticipates that bus movements would comprise a mix of larger buses and smaller mini-bus sized vehicles.

f) Use of rail services

6.3.17. Some responses to the Stage 1 consultation suggested that EDF Energy should use dedicated rail services to bring construction workers to and from the main development site. This suggestion was often raised in the context of responses which were keen to see additional investment in local rail infrastructure, including further upgrades to the East Suffolk Line to allow faster and more frequent services, and the reinstatement of rail passenger services to Leiston.

6.3.18. As described in more detail in **Section 8 Rail**, EDF Energy is working closely with Network Rail to establish the infrastructure upgrades required to increase the track capacity to accommodate up to an additional five trains per day (ten train paths) over and above the existing timetable. EDF Energy plans to use all of the additional paths created to deliver freight during the construction phase. A single large freight train can avoid in the order of 50 HGVs (i.e. goods vehicles exceeding 3.5 tonnes) (i.e. 100 movements) on the local road network. Given the potential of rail to reduce the number of HGVs travelling to site, EDF Energy considers that there is a compelling case to use all of the train paths for moving freight rather than construction workers. This case is enhanced by the following considerations:

- only a limited proportion of the construction workforce is likely to live sufficiently close to a rail station to make daily travel by rail an attractive proposition;
- the attractiveness of using rail for workers is likely to be further limited by the constrained frequency of services on the East Suffolk Line and the relatively slow journey time by rail from many locations when compared to travel by car or bus; and
- start and finish times for the workforce would not likely always coincide with available rail services, whereas park and ride and direct bus services can be more easily timed and flexibly adapted to meet the required demand.

6.3.19. For these reasons, EDF Energy is not proposing any dedicated rail services for construction workers. It is proposing, however, to provide a bus pick-up service for workers travelling by train to Darsham and Saxmundham on the East Suffolk Line. The location of EDF Energy's preferred northern park and ride development at Darsham would facilitate this.

g) On-site parking during construction

6.3.20. The Gravity Model indicates that a significant number of construction workers would reside east of the A12. For these workers, it would not be sensible or viable to travel away from the construction site to a park and ride facility. EDF Energy is therefore proposing to retain the Stage 1 consultation proposal to allow workers living in the area bounded by the A12 and rivers Deben and Blyth to drive directly to the construction site. Assessment of the number of workers expected to live in this area, the expected car occupancy levels and working patterns shows that a 1,000 space car park would be needed to accommodate the peak car park demand from construction workers and accommodation campus staff.

6.3.21. This car park would also cater for construction workers driving to site in the early and later stages of the construction phase, when park and ride facilities would be under construction or are being removed.

h) Walking, cycling and travel planning

6.3.22. EDF Energy has considered the scope to encourage workers living in the local area to cycle direct to the main development site. In this context, EDF Energy has assessed the existing network of local cycle routes and identified how to support or enhance existing facilities to encourage safe cycling to site during both construction and the operation of Sizewell C. Further details of the proposed improvements are provided in **Section 11 Highway Improvements**.

6.3.23. As EDF Energy progresses its proposals, a more detailed Travel Plan for the construction phase will be developed. This will include the proposals for encouraging walking or cycling to the construction site and park and ride facilities where practicable, as well as the scope for encouraging higher levels of car-sharing to further reduce traffic impacts.

6.3.24. The traffic modelling assumes that no construction workers would walk, cycle or motorcycle either to the main development site or to the park and ride facilities. This conservative assumption adds to the robustness of the traffic model, as in practice this would occur to some degree and walking and cycling would be encouraged via the travel planning process.

i) Car sharing assumptions

6.3.25. The level of car sharing during the construction phase has been assumed to be 1.1 (i.e. an average of 1.1 workers per car) for home-based workers (i.e. those workers already resident in the area). This is the national travel to work average.

6.3.26. Car sharing by non-home-based workers not resident in the accommodation campus has been assumed to be 2 (i.e. an average of two workers per car). This reflects the much greater likelihood that these workers would be co-located in private-rented, caravan or tourist accommodation. Therefore, they would have a much greater propensity to car share.

6.3.27. These car sharing assumptions, which apply to workforce journeys to and from the park and ride and on-site car parks, are considered to be robust, particularly bearing in mind that car sharing during the construction of Sizewell B (combining both home-based and non-home-based workers) was recorded as being above 2. The Travel Plan, which will be consulted upon prior to the submission of an application for development consent, will encourage all those working on the site to share car journeys.

j) Non-work related travel by non-home-based workers

6.3.28. In addition to daily travel to and from the main development site, some additional trips would be made on the local road network associated with non-work related leisure trips made by the construction workforce.

6.3.29. For home-based workers already resident in the area, these trips are already counted within the existing baseline traffic flows. However, non-work related trips by non-home-based workers would add to traffic flows and these have been included in the traffic modelling of the impacts of Sizewell C, based on national travel statistics relating to leisure related trips. This also takes into account proposed working patterns and that construction workers residing in accommodation campus are likely to make fewer longer distance trips given the range of facilities that would be provided at the accommodation campus or nearby.

k) Summary

6.3.30. The combined effect of EDF Energy's transport strategy on the movement of the construction workforce would be to reduce significantly the scale of additional car traffic that would otherwise be generated on the local road network at peak construction. The accommodation campus in particular reduces the need for construction

workers to travel to work each day. For workers living further afield the park and ride facilities would significantly reduce additional traffic for the towns and villages closest to the main development site. The proposed construction working patterns (refer to **Section 5 Socio-economics**) would also spread workforce journeys throughout the day, thus reducing the traffic impacts.

6.3.31. Additional traffic would nonetheless be generated and this section sets out how this would be robustly assessed when modelling the traffic impacts of Sizewell C. This is described in more detail from **Section 6.5** onwards.

6.4. Transport strategy for moving materials and freight

a) Introduction

6.4.1. The construction of Sizewell C would require large volumes of bulk and other materials to be delivered to the main development site. This section provides the latest information on EDF Energy's overall approach to managing freight, the latest material quantities estimates and summarises how sea, rail and road would be used to bring the materials required for the construction of Sizewell C effectively to the site. EDF Energy would welcome feedback on this from consultees.

b) Overall strategy for managing materials and freight movements

6.4.2. EDF Energy's overall strategy for managing materials and freight movements can be described in the following terms:

- Firstly, wherever practical and cost-effective, EDF Energy and its contractors would seek to reduce the volume of materials that require movement off-site, either through the re-use of excavated material as fill, landscaping or via the deployment of a borrow pit to source material on-site as well as to deposit other material (refer to **Section 7 Main Development Site**).
- Secondly, to move bulk materials and containerised goods by sea or by rail on and off the main development site, wherever practical or cost-effective, in line with national planning policy and guidance.
- Thirdly, where movement of materials by road remains necessary, to manage this to reduce local impacts by using agreed routes for HGV movements and adopting systems that can monitor, manage and control the number and timing of those movements to the main development site.

6.4.3. In the event that the rail and/or marine solutions, which remain EDF Energy's preferred strategy, prove to be impractical or not cost-effective, EDF Energy may explore road-based scenarios for freight movement with appropriate mitigation of the resulting greater highway impacts that would arise.

c) Proportion of materials moved by sea and rail

6.4.4. During the Stage 1 consultation, EDF Energy set out its intention to use sea and rail for freight deliveries during the construction of Sizewell C to reduce the reliance on deliveries by road. EDF Energy is continuing to develop its plans for the delivery of freight. This work has included:

- evaluating the capability of the options for sea and rail deliveries, including assessment of potential constraints on delivery (e.g. weather and navigational constraints in respect of sea delivery and rail pathing/infrastructure constraints in respect of rail deliveries);
- assessing the key material requirements that would arise over time during the construction phase, for each key area of the project build, and from this identifying the periods during which demand for materials is greatest; and
- considering the scope to move each major category of materials by sea and rail, taking account of the nature of the materials and possible supply sources.

6.4.5. This work informs estimates of the proportion of materials that can be moved by sea and rail, as well as those materials that would require to be delivered by road. This work is ongoing and requires assessment of a number of potential scenarios.

6.4.6. A marine maximised scenario would involve the use of:

- a temporary jetty capable of enabling export of unsuitable earthworks materials, import of bulk materials for concrete and backfilling operations, import of containerised goods and import of Abnormal Indivisible Loads (AILs);
- the existing rail head at Sizewell Halt to cater for delivery of bulk materials during the period when the temporary jetty would be under construction and to provide a level of contingency during any downtime of the temporary jetty; and
- a Beach Landing Facility (BLF) to cater for import of AILs during the operational life of the power station, and potentially the construction phase.

6.4.7. A rail maximised scenario would involve the use of:

- a dedicated rail head, either direct to the main development site or on land east of the Eastlands Industrial Estate, to cater for the import of bulk materials for concrete and backfilling operations, and the import of containerised goods;
- the existing rail head at Sizewell Halt to cater for the delivery of bulk materials during the period when the dedicated rail head would be under construction;
- a reduced scale jetty for the import of AILs and any other commodities that could be cost effectively delivered by sea; and
- BLF to cater for the import of AILs during the operational life of the power station, and potentially the construction phase.

6.4.8. Work is ongoing to enable EDF Energy to determine the optimum delivery scenario and the infrastructure that would be required to support it. Overall, EDF Energy anticipates that at least 60% (by weight) of the total materials required for construction could either be sourced from within the main development site (refer to **Section 7 Main Development Site** in relation to the borrow pit) or delivered to the site by sea or rail.

6.4.9. This proportion, which remains an indicative estimate at this stage, will be subject to ongoing refinement. In total, EDF Energy estimates that the implementation of either a marine or rail maximised transport strategy would remove up to 250 HGVs per day (500 HGV movements) from the road network on average over the peak construction phase.

6.4.10. The following sections provide more information on EDF Energy's latest estimates for material quantities and proposals in relation to the movement of freight by sea, rail and road.

d) Material quantities estimates

6.4.11. In broad terms, the materials which would require transportation to and from the main development site during the construction phase can be divided into four general categories:

- the materials required to be brought to the site for the construction of the two proposed UK EPR™ units and associated permanent power station, sea defences and ancillary buildings;

- the materials required to be brought to the site for all the supporting Sizewell C specific elements of the construction programme; this includes materials for the construction of the access road, the temporary jetty, the accommodation campus and other temporary and permanent structures;
- material movements associated with the bulk earthworks phase of the construction programme and, depending on which bulk material management strategy is adopted, there could be a requirement for substantial movement of surplus excavated materials from the site and import of fill materials to the site; and
- material movements associated with the construction and removal of any associated developments (e.g. the accommodation campus).
- the main office and induction centre;
- the new rail extension into the main development site or a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate in Leiston;
- the temporary jetty proposed to bring materials to and from the site by sea during construction;
- the BLF for occasional delivery of AILs during operation and potentially during construction;
- the cut-off wall required to support the earthworks/excavation phase; and
- sea defences for the main development site.

i. Material quantities for the construction of two UK EPR™ units and ancillary buildings and structures

6.4.12. The material quantities required for the main construction of a two UK EPR™ development have been considered carefully as part of the development of EDF Energy's HPC Project. The Sizewell C design is essentially the same as HPC and, as such, the material quantities estimates for this element of the Sizewell C Project (the Project) are the same at this stage.

6.4.13. In total, approximately 4.5 million tonnes of materials would be required for the main construction of the power station and supporting buildings. Of this, approximately 3 million tonnes would be required for the main civil works.

6.4.14. The large majority of materials required for the main construction are bulk materials which would be required for the production of concrete (including sand, aggregates, cement and cement replacement products) as well as smaller quantities of steelwork, reinforcing bar ("rebar") and a wide range of other materials in much smaller quantities.

ii. Material quantities for Sizewell C specific elements of the construction programme

6.4.15. The main construction items specific to Sizewell C are as follows:

- site set-up and infrastructure, including access road, temporary and permanent crossings of the SSSI corridor, utilities and fencing;
- the accommodation campus;

6.4.16. Many of these elements are still in the design development phase and are to be the subject of further consideration and consultation. Material quantities estimates for these elements of the Project are therefore provisional at this stage.

6.4.17. However, for the purposes of ensuring a robust approach to the material quantities that may be generated by the Project, and the associated transportation requirements, initial materials estimates have been made. It is currently estimated that these elements would add approximately a further 2.5 million tonnes to the total material quantities required. These would be largely materials for concrete production and other building construction materials. This is an increase on the figure estimated at the Stage 1 consultation, reflecting the further design development in these areas.

iii. Material quantities movements during the earthworks phase

6.4.18. During the early phase of construction, a large area would need to be excavated to provide the foundations for the power station and supporting buildings. At present, it is estimated that around 6.5 million tonnes of excavated material may be generated during the excavation phase. This figure remains subject to some uncertainty linked in particular to decisions on building foundation depths and the precise location of the cut-off wall.

6.4.19. A proportion of the excavated material would be peat, or peat mixed with clay. This material is unsuitable for use as engineering fill material and is also considered to be unsuitable for wider landscaping within the main development site or the EDF Energy Estate. As such, it is currently anticipated that this material would either be re-used as backfill in a borrow pit within the main development

site or exported off-site. EDF Energy’s proposals are detailed in **Section 7 Main Development Site**. EDF Energy continues to explore the option of providing this material to the Royal Society for the Protection of Birds’ (RSPB) Wallasea Island Wild Coast Project, in the event that it would need to be exported off-site. Discussions with the RSPB are being progressed and it is envisaged that any such export would take place by sea via a temporary jetty.

6.4.20. The volume of excavated material that is likely to be unsuitable for use has been subject to a further geotechnical study and engineering assessment since the Stage 1 consultation. Of the approximate 6.5 million tonnes, it is now estimated that around one third (approximately 2 million tonnes) would be unsuitable for use and around two thirds would be likely to be suitable for use as fill material or for landscaping. The quantity of fill material which could require importation is now estimated at around two million tonnes.

iv. Total material quantities

6.4.21. The total material quantities associated with the main elements of Sizewell C construction are summarised in **Table 6.1**.

Table 6.1 Current estimates of material quantities

Item	Current Estimate
Material quantities for construction of two UK EPR™ units and associated ancillary buildings	Approximately 4.5 million tonnes (of which 3 million tonnes are associated with the main civil works construction phase and 1.5 million tonnes with the mechanical and electrical phase)
Material quantities for Sizewell C specific elements of the construction	Approximately 2.5 million tonnes
Imported fill material	Approximately 2 million tonnes
Excavated material	Approximately 6.5 million tonnes (of which approximately 4.5 million tonnes is suitable for use and 2 million tonnes unsuitable for use)

6.4.22. EDF Energy will continue to refine its estimates of the volumes and types of materials requiring transportation. Taking all of the above into account, and based upon existing information, in total EDF Energy estimates that around 9 million tonnes of material would require transportation to

the main development site over the construction phase. A further 3 to 4 million tonnes of material is potentially required to be transported off-site. This latter figure includes the 2 million tonnes of material which potentially could be re-used on-site as backfill to the borrow pits.

v. Material quantities arising from off-site associated developments

6.4.23. In addition to the above, there would be some movements associated with the construction and subsequent removal activities, where relevant, of the off-site associated developments (i.e. the park and rides, rail and highways improvements). Material quantities for these elements of the Project are currently estimated to be in the region of 300,000 to 400,000 tonnes. A more precise quantity will be included as part of the application for development consent.

e) Moving materials by sea – marine maximum scenario

6.4.24. In the event that a marine maximised delivery strategy is followed, EDF Energy would build a temporary jetty at the main development site. This facility would allow both the sea delivery of AILs and the import of bulk and containerised materials. It may also be used for the export of some materials excavated from the main development site.

6.4.25. Since the Stage 1 consultation, EDF Energy has progressed further design work on the temporary jetty, taking account of its anticipated project requirements, navigational and weather constraints and potential environmental effects (e.g. coastal processes). Further details about the temporary jetty are provided in **Section 7 Main Development Site**.

f) Moving materials by sea – rail maximum scenarios

6.4.26. In the event that a rail maximised delivery strategy is followed, EDF Energy would build a marine delivery facility focused on providing capability for the delivery of AILs only. Options for such a facility are currently being considered but could include:

- a reduced scale jetty, to limit construction impacts and reduce the time taken for construction;
- a BLF solution, which utilises trans-shipment by barges from a remote port.

6.4.27. Further design and environmental details of these

options are provided in **Section 7 Main Development Site**.

g) Moving materials by rail

i. Overview

6.4.28. At the Stage 1 consultation, EDF Energy considered that rail could play an important role in the delivery of freight during construction, offering an alternative non-road option to marine. This remains EDF Energy's view, as it could play a significant role in enabling up to around five freight trains per day (ten movements) delivering bulk materials and containerised goods.

6.4.29. At the Stage 1 consultation, EDF Energy set out a number of options for facilitating rail deliveries. These included:

- a new rail terminal east of the Eastlands Industrial Estate in Leiston; or
- three route options (red, green and blue) for extending the Saxmundham – Leiston branch line into the construction site on a temporary basis.

6.4.30. Since the Stage 1 consultation EDF Energy has undertaken further work on the red, green and blue rail route options. This has included more detailed consideration of alignment, how affected roads or tracks would be crossed and the relative costs and environmental effects of each option.

6.4.31. Based on this work, EDF Energy's two preferred options for further consultation are:

- a new rail terminal east of Eastlands Industrial Estate in Leiston; or
- the green route rail extension option for extending the Saxmundham – Leiston branch line into the construction site on a temporary basis.

6.4.32. Further information on these options, and the reasons for not progressing the red and blue route rail extension options, are detailed in **Section 8 Rail**.

6.4.33. At present, EDF Energy has not decided between the rail extension option (green route) and the option of a new rail terminal east of Eastlands Industrial Estate in Leiston. One of the considerations is the balance between the use of sea and rail deliveries in supporting the construction programme. While it is clear that both sea and rail are likely to play important roles, there is currently uncertainty as to the final balance between

these two modes. In some scenarios sea delivery is more dominant, in others a greater role is played by rail.

6.4.34. EDF Energy's position in this area will be informed by further Project development and analysis, as well as feedback on the two rail options to this Stage 2 consultation.

ii. Rail freight during the early years of construction

6.4.35. As noted at the Stage 1 consultation, there is an existing rail terminal at Leiston (south of King George's Avenue) at the end of a rail line between Saxmundham to Leiston. This was used for occasional movements associated with the transport of spent fuel from Sizewell A. The rail terminal was also used during the construction of Sizewell B. As noted at the Stage 1 consultation, with refurbishment, it would be possible to use this existing rail terminal to bring freight deliveries to the site by rail during the early construction phase, but not the five trains required during the main construction phase.

6.4.36. For either of the freight delivery scenarios, the use of the existing rail terminal would be required to cater for deliveries during the early years of the programme.

6.4.37. The existing infrastructure can accommodate up to two freight trains per day, but unloading space at the terminal is constrained. It would therefore not meet the long-term construction requirements for the Project.

6.4.38. The existing facilities at the rail terminal have not been designed for the off-loading of bulk materials. Therefore, work would be required to optimise the layout of the terminal and provide the required off-loading facilities and equipment. Further information is detailed in **Section 8 Rail**.

iii. Rail improvements on the East Suffolk Line and the Saxmundham–Leiston branch line

6.4.39. The Stage 1 consultation indicated that improvements to the East Suffolk Line and the Saxmundham –Leiston branch line would be required to support the use of rail for freight deliveries. EDF Energy is continuing to discuss these proposals with Network Rail, who is responsible for rail infrastructure on the East Suffolk Line and the Saxmundham–Leiston branch line. EDF Energy anticipates that any upgrades or improvements to the existing rail network owned and operated by Network Rail would not form part of the application for development consent and would be progressed separately via a bilateral agreement with Network Rail.

6.4.40. Some refurbishment and reconstruction of the Saxmundham–Leiston branch line would be required, including modification of several manually operated level crossings to improve journey times for freight trains. EDF Energy is continuing to progress the details of this work with Network Rail. If closure of any level crossings were proposed this would be subject to further consultation with affected parties.

6.4.41. In the event that the current condition of the branch line is such that large sections of track require replacement, EDF Energy may discuss with Network Rail the possibility of leasing the branch line for the duration of the Sizewell C construction phase, with EDF Energy undertaking the required upgrade works.

6.4.42. Further information on the proposed rail improvements is detailed in **Section 8 Rail**.

h) Noise from rail freight movements

6.4.43. EDF Energy recognises that the Stage 1 consultation responses raised concerns about noise from rail freight deliveries, particularly if rail movements were to occur during the night. It is expected that the majority of rail movements would take place during the day. The aim would be to minimise the need for night-time movements. However, discussions with Network Rail suggest that rail timetabling issues and uncertainties mean that the requirement for some night-time rail movements cannot be ruled out. The noise assessment work will consider these issues, along with the requirement and scope for providing appropriate mitigation (refer to **Section 8 Rail**).

i) Moving materials by road under a rail or marine maximum scenario

6.4.44. Despite EDF Energy's major investment proposals for sea and rail transport, the large quantities and wide variety of freight required mean that a significant number of deliveries would still need to be made by HGVs. HGVs are goods vehicles of all sizes that exceed 3.5 tonnes in weight. As set out at the Stage 1 consultation, it is anticipated that any HGV deliveries to and from the main development site would be controlled to fixed routes along the A12 and B1122. These routes would avoid HGV deliveries travelling through Leiston and many other local towns and villages.

6.4.45. On this basis, HGVs delivering to the site would only be permitted to use alternative routes in the event of specific, limited circumstances such as an accident or incident requiring HGV traffic to be diverted.

6.4.46. The Stage 1 consultation indicated that the expected average HGV movements at peak construction range from 100 to 300 deliveries per day (equating to 200-600 two-way movements). Further work on material quantities for the Project and the development of the sea and rail proposals has enabled a refinement of the forecast. It is now estimated that average HGV movements at peak construction would be 225 deliveries per day (equating to 450 two-way movements) on the road network. Based on a high-level analysis of potential supplier origins and the experience of Sizewell B construction, EDF Energy estimates that 85% of HGV traffic would reach the site via the south and 15% via the north along the A12 to Sizewell C.

6.4.47. These figures on HGV movements remain subject to further work, noting the following at this stage:

- These figures are for peak construction and at many periods in the construction phase average HGV movements would be lower.
- The figures are averages, which means that on any given day the number of HGV movements could be higher or lower than set out. On infrequent occasions and on the busiest days, the number of HGV movements could be up to twice the average (i.e. 450 deliveries per day (equating to 900 two-way movements)).

6.4.48. In EDF Energy's traffic modelling (refer to **Section 6.5** onwards) and in the assessment of the traffic-related impacts of Sizewell C, the Typical Day (225 HGV deliveries per day) is the focus of the assessment, as this is most representative of the scale of impacts that could occur. EDF Energy has also, however, considered the Busiest Day (450 HGV deliveries per day) between the main development site and various destinations.

6.4.49. EDF Energy expects the Project to be subject to planning requirements that would control the absolute number of HGV movements allowed on any given day. These requirements could limit the overall number of movements, so as to not exceed the average numbers during peak construction that have been used in the transport and environmental assessments.

6.4.50. It is anticipated that HGV movements would be spread across the day, with a greater proportion of deliveries occurring in the morning. It has been assumed in the traffic modelling that HGV deliveries would arrive at the construction site entrance from 7am onwards.

6.4.51. EDF Energy will continue to pursue the objective of reducing HGV movements, where possible, to the extent consistent with the wider requirement for a flexible, efficient and cost-effective construction programme.

j) Lorry parks (freight management facilities) and the management and control of HGV movements

6.4.52. At the Stage 1 consultation, EDF Energy identified a potential requirement for lorry parking remote from the main development site to support the management of road deliveries to the site. A number of potential site options for a freight management facility were identified and included in the Stage 1 consultation.

6.4.53. EDF Energy noted at the Stage 1 consultation that an off-site freight management facility could, in principle, serve a number of functions. For example, it could control the pattern of deliveries to the site, provide a location where paperwork and goods could be checked prior to delivery to site and a location where HGVs could be held in the event of an incident or accident on the local road network which prevented access to the main development site. However, it was also noted that many of these functions could potentially be achieved via automated monitoring and communication systems that did not require the construction of a new dedicated facility.

6.4.54. EDF Energy now considers that HGV deliveries and movements to and from the main development site can be effectively managed without the requirement for an external off-site freight management facility or lorry park.

6.4.55. EDF Energy is proposing to adopt a number of measures to manage and control HGV movements to and from the main development site. This includes the implementation of an electronic web-based Delivery Management System (DMS). All contractors receiving and delivering goods and materials by HGV would be required to operate and participate in the DMS. Through this system, agreed deliveries to the site would be booked in advance and allocated to agreed delivery slots within the day. The system would provide a means of recording HGV deliveries to the site, ensuring that such deliveries are operating within any agreed controls and limits. It would also help to facilitate rapid electronic communication with suppliers in the event of any accidents, incidents or other Project events that could lead to HGV deliveries being delayed or rescheduled.

6.4.56. EDF Energy has developed a DMS that is now operational for the HPC Project. Learning from this and other similar projects will inform the design and development of the DMS for Sizewell C. A similar

system is, for example, operating for the management of container HGV movements to and from Felixstowe Port. It has proved effective in facilitating smooth day-to-day port operations as well as reducing the requirement for external holding of HGVs on the local road network when there are weather related delays at Felixstowe.

6.4.57. EDF Energy's second proposal to manage HGV deliveries to site is to use Automatic Number Plate Recognition (ANPR) technology to control the movement of HGVs on agreed routes. ANPR is a camera-based technology that can be used to record the number plates of vehicles on specific routes. Via the DMS system, suppliers would be required to provide the number plates of HGVs delivering goods and materials to the site. ANPR cameras would be placed on the agreed HGV routes to monitor compliance. Use of the ANPR system would be combined with wider communication with suppliers and HGV drivers so that agreed HGV routes and the importance of compliance with them are understood. Any breaches of compliance would be investigated and addressed. EDF Energy has implemented an ANPR system for the HPC Project to secure compliance with agreed HGV routes. Any learning and experience from the operation of this system would be incorporated into the procedures adopted for Sizewell C.

6.4.58. Through these measures, EDF Energy would be able to confirm that the number of daily deliveries to the site remains within any agreed limits and that HGVs comply with agreed routes. EDF Energy is committed to achieving a high-level of compliance with agreed project controls in this area and to promptly address any breaches in compliance were they to occur. Further details of EDF Energy's proposed approach to the management of HGV movements to and from the site will be set out in a Construction Traffic Management Plan (CTMP). The development of the CTMP will be progressed in consultation with Suffolk County Council (SCC).

6.4.59. In the event of an incident or accident preventing normal timely access to the construction site via the agreed HGV routes, EDF Energy anticipates putting in place a number of approaches to address these scenarios. This would include the development and implementation of communication procedures with the police, SCC and Highways England to give early identification or warning of any incidents/accidents or events which could prevent normal smooth access to the site via the approved routes. Depending on the nature and location of the incident, a number of alternative approaches may be adopted, including:

- following identification of an incident of concern, rapid communication would be made with suppliers

to delay, reschedule or hold en-route planned HGV deliveries to the site;

- for deliveries already en-route, agreed diversionary routes would be used where the normal agreed route to site is unavailable (e.g. due to an accident);
- the southern park and ride facility at Wickham Market includes an area for holding HGVs in the event of an incident on the local highway network or the main development site (refer to **Section 10 Southern Park and Ride**);
- the temporary holding at, or controlled release of, HGVs from the Sizewell C site, where these HGVs have already delivered goods and are ready to make their return journey; and
- the use of part of the land east of the Eastlands Industrial Estate, which includes space for a holding area for HGVs, in the limited circumstances where direct access to the site may be temporarily unavailable.

6.4.60. EDF Energy will further develop the planned approaches in consultation with SCC, Highways England, the police and other emergency services. It is anticipated that the key elements of the proposals and approaches would be set out in a Traffic Incident Management Plan (TIMP) for the construction phase.

k) Freight consolidation

6.4.61. A number of responses to the Stage 1 consultation suggested that any potential freight management facility should also be used for the consolidation of freight deliveries, thus reducing the total number of lorry movements required to and from the main development site.

6.4.62. EDF Energy considers that, given the scale of Sizewell C construction, many HGV deliveries would take place in fully loaded vehicles and suppliers of large quantities of materials or goods would arrange their own consolidation activities where necessary. These could be at locations close to suppliers and at existing warehouse developments. Moreover, more specialist high value equipment delivered by road would need to be delivered direct to contractors on-site to avoid any issues over supplier/product liability in relation to any defective goods. For these reasons, the practical scope for further consolidation of HGV movements remote from the main development site is considered to be limited and a wider consolidation facility is not proposed.

l) Light goods vehicles

6.4.63. In addition to HGV movements, it is anticipated that the construction phase would generate a significant number of lighter goods vehicle movements (i.e. vans and small delivery vehicles that weigh less than 3.5 tonnes). These light goods vehicle movements would relate to a wide range of Project purposes, including the delivery of post, packages, food, consumables, specialist tools and equipment and other small items. Vehicles in this category would also include contractor's fleet vehicles and visitors to the site.

6.4.64. EDF Energy is proposing a consolidation facility for post, packages and other small item deliveries to the main development site. This is proposed to be located at the proposed southern park and ride facility at Wickham Market (refer to **Section 10 Southern Park and Ride**).

6.4.65. For the traffic modelling, EDF Energy has estimated that there would be 700 light goods vehicle movements per day on the local road network at peak construction. This is in the order of three times the daily average number of light goods vehicle movements recorded during the peak period of Sizewell B construction. This increase on the Sizewell B figure reflects that Sizewell C has two UK EPR™ units, and also includes an additional allowance for the busiest days. The figure is therefore a robust estimate for traffic modelling and transport assessment purposes. On many days and periods of the construction phase, light goods vehicle movements are likely to be substantially lower. Given the wide variety of Project purposes to which these vehicle movements relate, these movements have been assumed to occur throughout the working day and from a wide variety of locations using various routes.

6.5. Traffic modelling

a) Introduction

6.5.1. In order to assess the likely traffic impacts of the Project, EDF Energy is developing a traffic model of the local road network (refer to **Figure 6.1**).

6.5.2. The development of a traffic model begins with the preparation of a 'Base Model' which aims to replicate the existing conditions on the local road network. A process of calibration and validation is undertaken so that the model gives a good reflection of observed traffic conditions.

6.5.3. In the second stage of the process, general traffic growth and traffic associated with specific 'committed developments' (major developments with planning

permission but not yet built) are then added to the base traffic model, along with any known transport improvements associated with these or other schemes. The purpose of this stage in the process is to estimate the future conditions on the road network before the development (in this case Sizewell C). This is known as the 'Reference Case' model.

6.5.4. The third stage of the process is then to add estimates of traffic generated by the Project during peak construction to the 'Reference Case' model. This 'With-Development' model is then used to examine the likely impacts of the development on the road network.

b) Current status of model development and traffic modelling

6.5.5. A VISUM traffic model has been developed for the purposes of assessing Sizewell C traffic impacts. VISUM is one of a number of industry standard software packages used for transport modelling and is widely used in transport studies. The study area and modelled network for the VISUM model has been agreed with SCC and remains the same as that shown at the Stage 1 consultation: it extends to Lowestoft to the north, Ipswich to the south and the A140 to the west. The geographic extent of the model is shown in **Figure 6.1**.

i. Base traffic model

6.5.6. A VISUM Base Model of the existing road network was initially developed using a wide range of Manual Classified Counts (MCC) and Automatic Traffic Counts (ATC) on the local road network, which were conducted in May and June 2011. Traffic count information from the Highway England Traffic Flow Data System (TRADS) which holds information on traffic flows at sites on the motorway and trunk road network was also used. In addition, SCC provided count data from a number of their permanent count sites.

6.5.7. Since the Stage 1 consultation, EDF Energy has held further discussions with SCC in relation to the Base Model. In response to these discussions, the model was further enhanced through the incorporation of:

- data from further traffic counts conducted in autumn 2012 and from a number of permanent traffic counters operated by SCC;
- data from the existing East of England Regional Model (EERM); and
- updated schools data from SCC in relation to education trips.

6.5.8. The 2012 Base Year traffic matrices were developed using origin-destination data from the 2001 Census Journey-To-Work (JTW) survey, prior to the release of the 2011 Census data. Following a comprehensive review of the 2012 Base Model by SCC, EDF Energy agreed that the Base Model would be updated using 2011 Census JTW data when available, and using traffic survey data collected in May 2015.

6.5.9. A series of manual and automatic traffic count surveys across the study area were undertaken in May 2015. These were supplemented by data supplied by SCC and data from Highway England's TRADS database. Observed journey time information was extracted from the Department for Transport's Trafficmaster database for a number of key routes across the highway network to provide a further model validation dataset.

6.5.10. The 2015 Base Model has been updated to reflect recent highway network changes and the traffic demand matrices were developed using 2011 Census JTW data instead of the 2001 data initially available. The use of cordon matrices from the EERM was also refined to better reflect the origin-destination trip loading within the modelled area. The model was calibrated and validated using the May 2015 and other recent data. EDF Energy is continuing to work with SCC to agree the Base Model.

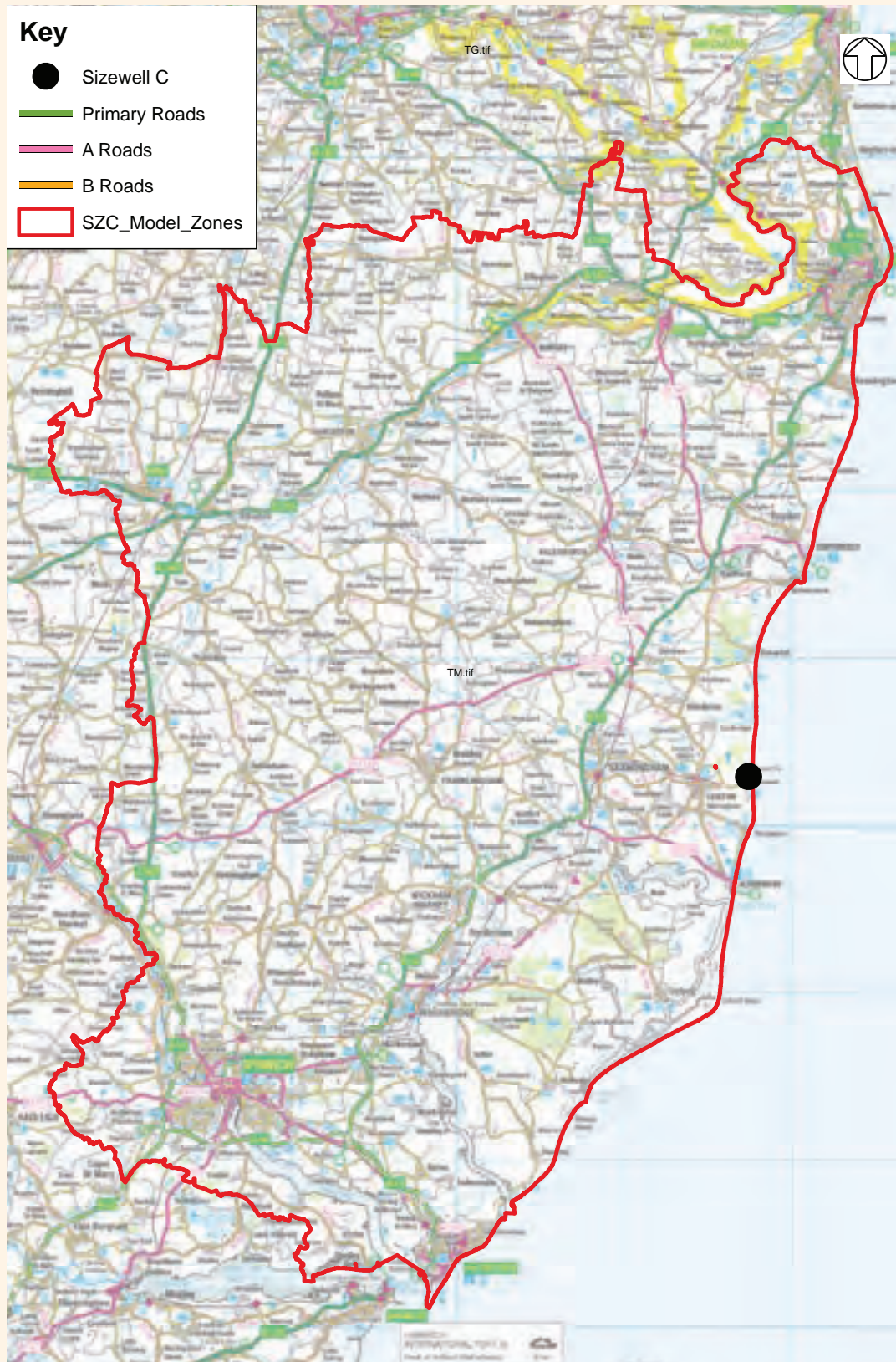
ii. Reference Case traffic model

6.5.11. EDF Energy has developed a Reference Case traffic model to predict future conditions on the local road network at the time of peak construction (currently assumed to be 2024), but without the addition of Sizewell C-related traffic.

6.5.12. This Reference Case model includes traffic growth arising from general economic development (in line with established Department for Transport guidance in this area) and additional traffic associated with major developments. These major developments include new housing and commercial traffic relating to the Adastral Park development east of Ipswich and additional potential freight traffic associated with the expansion of Felixstowe Port.

6.5.13. In general, widespread increases in traffic are expected in the Reference Case. However, the modelling conducted thus far does not suggest that future traffic growth up to the time of Sizewell C peak construction would lead to a significant change in traffic conditions across the local road network, or to material detrimental impacts in the form of significant increases in journey times or junction performance. The main exception to this relates to traffic conditions on the A12 in the area east of Ipswich and up to the Woodbridge area. In these

Figure 6.1 Extent of traffic model



areas, the Reference Case traffic model is suggesting the potential for some additional congestion and traffic delay during peak periods as a result of traffic growth and network modifications in this part of the A12.

6.5.14. This finding, which is unrelated to Sizewell C, will be discussed further with SCC and compared against their own expectations of future traffic conditions in this area. The specific developments that have been modelled explicitly in the Reference Case have been agreed with SCC.

iii. Modelled time periods

6.5.15. At the Stage 1 consultation, EDF Energy’s initial traffic modelling had considered the weekday 15:00 to 16:00 hour period, as this time period would see high existing traffic flows coincide with relatively high flows relating to Sizewell C construction.

6.5.16. Since the Stage 1 consultation, a more comprehensive programme of traffic modelling has been progressed, as follows:

- 06:00 to 09:00 hours in the weekday morning period; and
- 15:00 to 19:00 hours in the weekday afternoon/evening period.

6.5.17. These seven weekday hourly periods, which have been agreed with SCC, cover all of the existing network peaks as well as periods when there are expected to be higher volumes of Sizewell C development-related traffic.

6.5.18. The 2015 Base model will be developed for all seven weekday hourly periods. However, at this stage, three hours have been produced, as agreed with SCC, as follows:

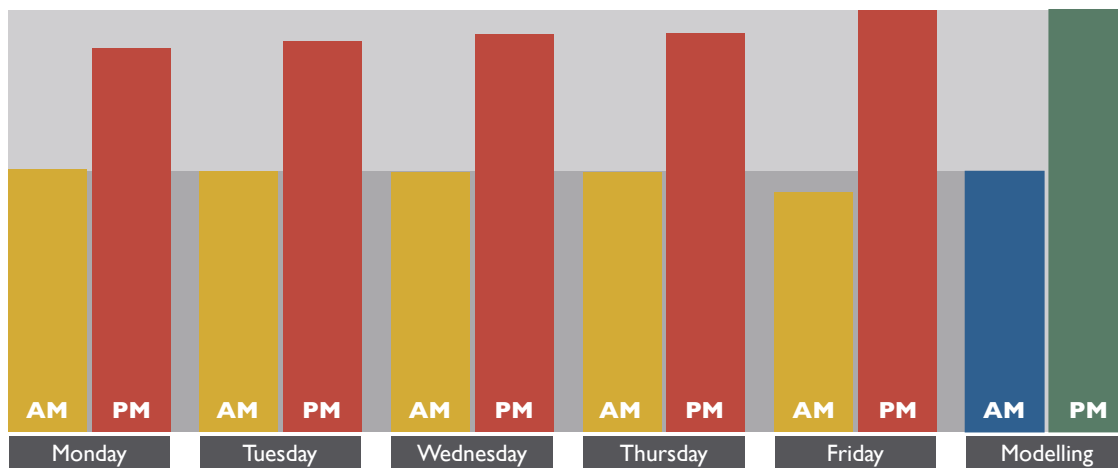
- 08:00 to 09:00 hours;
- 15:00 to 16:00 hours; and
- 17:00 to 18:00 hours.

6.5.19. The remaining four hourly periods will be modelled in due course, to inform the Stage 3 consultation.

6.5.20. For robustness, the morning (08:00 to 09:00 hours) base traffic modelling has been developed using the average of Monday to Thursday morning traffic data, as well as the remaining two morning hours (06:00 to 08:00 hours). Analysis has indicated that these periods are consistently busier than Friday mornings. Conversely, analysis indicates that Friday afternoon and early evening traffic within the study area is consistently the busiest time of the week, and higher than in any other weekday or weekend periods. Consequently, the afternoon (15:00 to 16:00 hours) and early evening (17:00 to 18:00 hours) modelling has used Friday afternoon traffic data, as well as the remaining two early evening hours (16:00 to 17:00 hours and 18:00 to 19:00 hours). **Figure 6.2** illustrates the day-to-day traffic flow variation across the modelled area.

6.5.21. Both highway network traffic flows, and those associated with Sizewell C construction, are lower at weekends than on weekdays. Therefore, impacts and mitigation are assessed from the weekday modelling results. The variation of traffic flows during the summer is described later in this section.

Figure 6.2 Weekday traffic flow variations across study area



6.5.22. The combination of the use of these modelling time periods and data, along with traffic growth assumptions for the Reference Case model, ensures that the traffic model is not under-estimating the scale of existing traffic on the network, or the future traffic conditions which could apply by the time of Sizewell C construction. EDF Energy continues to work with SCC on the Reference Case model so that it represents a robust starting point for the assessment of Sizewell C impacts, which are discussed further in subsequent sections.

c) Network seasonality

6.5.23. A number of responses to the Stage 1 consultation raised the issue of the seasonality of the local road network. This was raised in the context of a concern that additional traffic during holiday periods, in particular the peak summer period, would compound issues relating to the impacts of Sizewell C construction traffic. This issue was particularly raised by those suggesting that a bypass was necessary to address the impacts of existing and future traffic through the section of the A12 north of Wickham Market, running through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham (refer to **Section 11 Highway Improvements**).

6.5.24. Since the Stage 1 consultation, EDF Energy has conducted an initial analysis of the current extent of seasonality of the road network covered by the VISUM traffic model, comparing data collected in May 2015 (which has been used in the development of the base traffic model) with August 2015 data. This analysis indicates that:

- much of the road network covered by the VISUM model, including Ipswich, the A14 and other locations, exhibits no seasonality (i.e. daily traffic flows in August are broadly similar to those in May); and
- during the morning peak, traffic flows across the VISUM modelled area, including on the A12, are lower in August than in May.

6.5.25. However, the analysis suggests that 07:00-19:00 weekday traffic flows on the A12 north of Woodbridge are typically around 10% higher in August than in May, and that average weekday PM peak period traffic flows on this part of the network are around 10% to 35% higher in August than in May, as **Figures 6.3** and **6.4** show. These trends are consistent with a higher volume of tourism related traffic on the A12 in August.

Figure 6.3 Morning (Monday to Thursday) and evening (Friday) weekday peak hour A12 flows during May and August at Farnham and Wangford

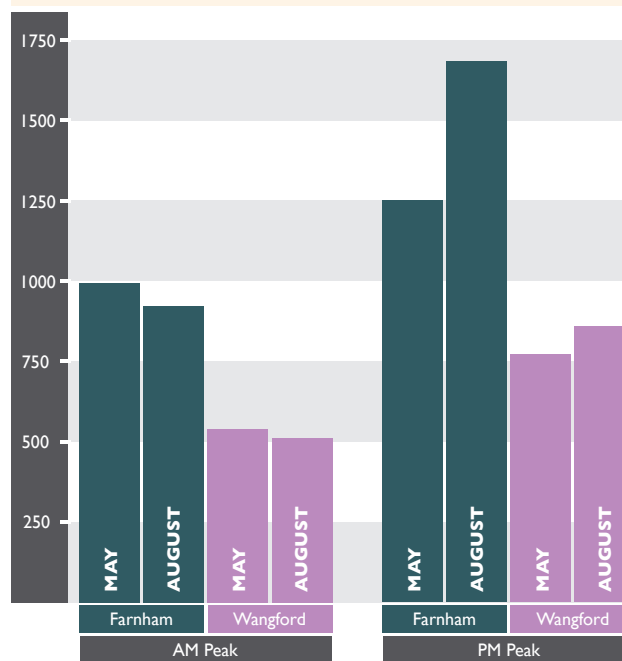
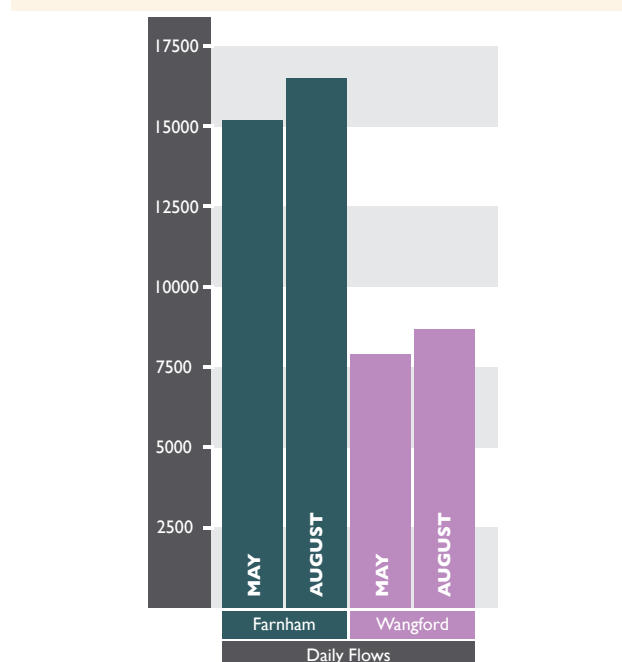


Figure 6.4 Monday to Friday 07:00-19:00 A12 flows during May and August at Farnham and Wangford



6.5.26. The Sizewell C Base and Reference Case traffic modelling for the PM periods (15:00 to 19:00) has been developed using Friday PM traffic flow data. Analysis has shown that this is the busiest weekday during May, as **Figure 6.2** shows. By comparison, August Friday PM flows and Saturday late morning and early afternoon flows are higher than those used in the modelling. However, the number of construction workers on Fridays and Saturdays are lower than assumed in the modelling.

6.5.27. The key purpose of the Sizewell C traffic modelling is to examine and assess the impacts which would typically occur with the whole workforce present on weekdays at peak construction, as opposed to any shorter term and time limited effects. EDF Energy will discuss the further analytical approaches which may be adopted in this area with SCC. It is recognised that there may be some seasonal effects on the A12 and at other locations that are not captured by the existing traffic modelling.

d) Summary

6.5.28. Since the Stage 1 consultation, EDF Energy has further developed the Base and Reference Case traffic modelling which will be used as the starting point for the assessment of Project's construction traffic impacts. The modelling is being progressed in a comprehensive manner and addresses:

- a wide geographic area, including all potentially affected parts of the road network;
- the busiest periods of the day and the busiest days of the week in terms of traffic generation; and
- modelling which incorporates both general future traffic growth across the network and the specific traffic associated with major developments expected to come forward by the time of peak construction.

6.5.29. EDF Energy will continue to progress and refine its base and Reference Case traffic modelling, working with SCC as the local highway authority.

6.6. Traffic modelling of the Sizewell C construction phase

6.6.1. This section sets out the key inputs and assumptions which have been used to generate the Typical Day and Busiest Day assessments of Sizewell C construction traffic on weekdays at peak construction. These have been referred to elsewhere in this section but, for ease of reference, are collated in **Table 6.2**. The only difference between the

two assessments is the number of HGVs per day as indicated in **Table 6.2**.

6.6.2. The inputs and assumptions set out in **Table 6.2** and used in the traffic modelling conducted to date remain subject to potential change, linked to further development and refinement of the Project proposals and associated studies and assessments. It is considered that the assumptions used are robust and therefore represent a sound basis for assessing potential Sizewell C traffic impacts for the following reasons:

- the traffic modelling considers the peak period of Sizewell C construction and assumes that peaks in both workforce and freight related trips occur at the same time;
- the lower number of accommodation campus bedspaces was used (2,000), compared to that proposed (2,400);
- the numbers assumed to travel by non-car modes (rail and direct buses) are modest and in practice it is considered that there could be scope for additional use of these modes;
- an assumption has been made that no construction workers would walk, cycle or motorcycle either to the main development site or to the park and ride facilities. In practice, this would occur to some degree; and EDF Energy's Travel Plan measures would encourage walking and cycling where practical;
- the level of car sharing assumed is modest and significantly lower than that recorded during the construction of Sizewell B; and
- the modelling has included all potential areas of additional traffic generated by the Project during the construction phase, including non-work trips from construction workers who are not already resident in the area.

6.6.3. Taking account of these considerations, it can be noted that during many periods of the construction phase, the actual level of traffic generated by the construction of Sizewell C would be lower than has been considered in the traffic modelling.

6.6.4. High-level outputs from the modelling work are presented in **Section 6.7. Section 11 Highway Improvements** also sets out predicted traffic changes and impacts of Sizewell C construction, together with mitigation proposals, at Farnham. That section also identifies predicted construction traffic changes and impacts on the B1122 and describes proposed improvements, including those at Yoxford, Theberton and at the main development site access.

Table 6.2 Main assumptions relating to Sizewell C peak construction traffic

Issue	Assumption
Peak construction workforce	5,600
Associated development operational workers	500
Residential location of workforce	Based on the Gravity Model
Working patterns of the construction workforce	See Section 5 Socio-economics
Size of development site accommodation campus	2,000 (Note: Using 2,000 bedspaces rather than proposed 2,400 bedspaces makes the impact assessments more robust)
Frequency of park and ride buses	Four to seven buses from northern and southern park and ride sites per hour during staff changeover periods, hourly service outside staff changeover periods
Frequency of direct buses from Ipswich and Lowestoft	Half hourly during staff changeover periods
Total number of direct and park and ride buses	400 movements per day
Routing of park and ride and direct buses	A12 and B1122
Number of workers travelling by direct bus	200
Number of workers travelling by rail	100
Number of workers walking / cycling / motorcycling to construction site or park and ride sites	No workers assumed to use these modes
Average level of car sharing	1.1 workers per car for home-based workers and 2 workers per car for non-home-based workers
Non-work trips	Included for all non-home-based workers (campus and non-campus)
Typical Day - Average number of HGVs per day at peak construction	450 movements (225 deliveries)
Busiest Day - Maximum number of HGVs per day	900 movements (450 deliveries)
Routing of HGVs	A12 and B1122
Origin of HGVs	85% from A12 south 15% from A12 north
Light goods vehicles	700 movements per day, of which 350 are to and from the postal consolidation facility

6.6.5. A subsequent stage of consultation will describe any mitigation measures needed as a result of any impacts identified by the additional modelling.

6.7. Potential traffic impacts across the modelled area

6.7.1. The VISUM traffic model that is being used to assess Sizewell C traffic impacts is a dynamic highway assignment model, which means that existing and development related traffic within the model can re-route to choose the best available routes, as a combination of distance and journey time, within the network (other than HGVs and buses

which are assigned to fixed routes). This means that flow changes within the traffic model on any given route are not a simple direct addition of Sizewell C traffic onto a fixed and unchanging future year traffic flow. Moreover, the traffic modelling conducted to date also suggests that an amount of non-Sizewell C-related traffic would potentially re-route, meaning that actual increases in vehicle flows could be lower than those shown in **Table 6.3**. Nonetheless, the potential scale of changes in daily traffic flows for the locations shown in **Figure 6.5** across the network, assuming no re-routing, is shown in **Table 6.3**.

Figure 6.5 Locations in Tables 6.3 to 6.9 inclusive



Table 6.3 Peak period of Sizewell C construction

Indicative daily 24-hour weekday traffic flows at a range of locations

Location	Current average daily (24-hour) weekday all-vehicle traffic flows (based on 2015 data)	Estimated future weekday daily traffic flows without Sizewell C (Reference Case)	Estimated future daily weekday Sizewell C peak construction flows	Estimated future daily weekday traffic flows with Sizewell C peak construction traffic	Estimated percentage traffic increase from Sizewell C
Lover's Lane, Leiston (location A)	1,900	2,150	1,150	3,300	53%
B1122 Abbey Road, central Leiston (location B)	4,700	5,200	2,400	7,600	46%
B1119 Saxmundham Road, Leiston (location C)	4,050	4,550	1,050	5,600	23%
B1069 Coldfair Green (location D)	5,300	6,050	600	6,650	10%
B1122 Aldeburgh (location E)	3,500	3,900	250	4,150	6%
B1125 Westleton (location F)	2,350	2,650	350	3,000	13%
A1094 west of Snape Road (location G)	7,400	8,350	50	8,400	1%
B1069 Tunstall (location H)	3,000	3,950	400	4,350–4,900	10%–24%
B1121 Saxmundham (location I)	5,000	5,600	100	5,700–5,750	2% - 3%
A1120 Yoxford (location J)	3,750	4,450	350	4,800	8%
A144 Halesworth (location K)	7,000	8,100	450	8,550	6%
B1125 Blythburgh (location L)	1,500	1,700	150	1,850	9%
A145 Beccles (location M)	16,700	18,550	100	18,650	1%
B1119 between Framlingham and A12 (location N)	2,800	3,050	50	3,100	2%
B1078 Wickham Market (location O)	4,150	7,250	1,300	8,550–8,750	18%–21%
B1116 Hacheston (location P)	7,150	7,850	150	8,000	2%
B1122 Theberton (location Q)	4,950	5,550	2,050	7,600	37%
B1122 Yoxford (location R)	3,350	3,750	1,250	5,000	33%
A14 south of Ipswich (west of Seven Hills junction) (location S)	61,100	68,400	650	69,050	1%
A14 Felixstowe Branch (east of Seven Hills junction) (location T)	44,350	52,200	150	52,350–52,450	Less than 1%
A12 Farnham (location U)	18,700	20,300	1,300	21,600	6%
A12 Wrentham (location V)	9,500	10,500	1,100	11,600–11,650	10%–11%
A12 Blythburgh (location W)	9,950	10,950	1,350	12,300	12%
A12 north of Darsham Park & Ride (location X)	14,000	15,350	1,600	16,950	10%
A12 Yoxford (location Y)	15,050	16,500	1,250	17,750	8%
A12 south of Wickham Market Park & Ride (location Z)	24,400	25,550	1,700	27,250	7%
A12 Woodbridge (location AA)	36,300	37,550	1,300	38,850	3%

6.7.2. There are five locations where some re-routing of Reference Case traffic would occur, adding traffic to these routes, when the Sizewell C traffic is added, as identified in **Table 6.3**. At three of these sites—the B1121 Saxmundham (location I), A14 east of Seven Hills (location T) and A12 Wrentham (location V)—the re-routed traffic volume is small (50–100 vehicles per day) and would not be noticeable when spread over a whole day.

6.7.3. At B1069 Tunstall (location H) and B1078 Wickham Market (location O), the re-routing of Reference Case traffic is greater at 550 and 200 vehicles per day respectively. However, this re-routing may not occur in practice or only part of the traffic might re-route. In these locations, it is only possible to identify that the traffic increase would lie somewhere within the quoted range. If all of the re-routing occurred, it would increase impacts to the upper end of the quoted range at B1069 Tunstall and B1078 Wickham Market, but would reduce impacts elsewhere on the highway network.

6.7.4. **Table 6.4** details the changes in weekday traffic flows during peak hours on the highway network arising from the peak period of Sizewell C construction as a percentage increase over the Reference Case.

6.7.5. **Table 6.4** demonstrates that, for the same locations considered in **Table 6.3**, the scale of changes in traffic at network peak hours is generally similar or somewhat lower than overall daily changes in traffic flows. This is because non-Sizewell C-related traffic is higher at network peak hours and also reflects that, due to the working patterns and other features of the development, Sizewell C-related construction traffic is relatively well spread across the day.

6.7.6. **Table 6.5** shows the changes in HGV and bus movements across the highway network.

Table 6.4 Peak period of Sizewell C construction

Peak hour percentage increases in weekday traffic flows at a range of locations

Location	Percentage increase in traffic at peak Sizewell C construction in the weekday AM peak period (7am–9am)	Percentage increase in traffic at peak Sizewell C construction in the weekday PM peak period (4pm–6pm)
Lover’s Lane, Leiston (location A)	25%	47%
B1122 Abbey Road, central Leiston (location B)	40%	37%
B1119 Saxmundham Road, Leiston (location C)	20%	19%
B1069 Coldfair Green (location D)	8%	7%
B1122 Aldeburgh (location E)	7%	7%
B1125 Westleton (location F)	9%	11%
A1094 west of Snape Road (location G)	2%	0%
B1069 Tunstall (location H)	13%	14%
B1121 Saxmundham (location I)	3%	3%
A1120 Yoxford (location J)	7%	6%
A144 Halesworth (location K)	5%	4%
B1125 Blythburgh (location L)	3%	9%
A145 Beccles (location M)	1%	0%
B1119 between Framlingham and A12 (location N)	1%	1%
B1078 Wickham Market (location O)	13%	11%
B1116 Hacheston (location P)	1%	0%
B1122 Theberton (location Q)	27%	25%
B1122 Yoxford (location R)	25%	23%
A14 south of Ipswich (west of Seven Hills junction) (location S)	0%	0%
A14 Felixstowe Branch (east of Seven Hills junction) (location T)	Less than 1%	Less than 1%
A12 Farnham (location U)	3%	3%
A12 Wrentham (location V)	7%	8%
A12 Blythburgh (location W)	8%	6%
A12 north of Darsham Park & Ride (location X)	10%	6%
A12 Yoxford (location Y)	6%	5%
A12 south of Wickham Market Park & Ride (location Z)	5%	3%
A12 Woodbridge (location AA)	0%	0%

Table 6.5 Peak period of Sizewell C construction

Changes in HGV and bus flows at the locations identified in **Figure 6.5**.

Location	Current daily HGV and bus flow	Pre-SZC daily HGV and bus flow	SZC buses	SZC HGV Typical Day	With SZC daily HGV and bus flow Typical Day	% increase	SZC HGV Busiest Day	With SZC daily HGV and bus flow Busiest Day	% increase
Lover's Lane, Leiston (location A)	170	170	0	800	970	471%	800	970	471%
B1122 Abbey Road, central Leiston (location B)	130	140	0	0	140	0%	0	140	0%
B1119 Saxmundham Road, Leiston (location C)	90	100	0	0	100	0%	0	100	0%
B1069 Coldfair Green (location D)	200	210	0	0	210	0%	0	210	0%
B1122 Aldeburgh (location E)	110	120	0	0	120	0%	0	120	0%
B1125 Westleton (location F)	100	100	0	0	100	0%	0	100	0%
A1094 west of Snape Road (location G)	190	210	0	0	210	0%	0	210	0%
B1069 Tunstall (location H)	170	170	0	0	170	0%	0	170	0%
B1121 Saxmundham (location I)	60	60	0	0	60	0%	0	60	0%
A1120 Yoxford (location J)	190	200	0	0	200	0%	0	200	0%
A144 Halesworth (location K)	240	260	0	0	260	0%	0	260	0%
B1125 Blythburgh (location L)	60	60	0	0	60	0%	0	60	0%
A145 Beccles (location M)	440	480	0	40	520	8%	80	560	17%
B1119 between Framlingham and A12 (location N)	30	30	0	0	30	0%	0	30	0%
B1078 Wickham Market (location O)	170	190	0	0	190	0%	0	190	0%
B1116 Hacheston (location P)	90	90	0	0	90	0%	0	90	0%
B1122 Theberton (location Q)	230	240	400	450	1090	354%	900	1540	542%
B1122 Yoxford (location R)	170	180	400	450	1030	472%	900	1480	722%
A14 south of Ipswich (west of Seven Hills junction) (location S)	8090	9530	10	290	9830	3%	580	10120	6%
A14 Felixstowe Branch (east of Seven Hills junction) (location T)	6320	7770	0	30	7800	0%	60	7830	1%
A12 Farnham (location U)	900	940	210	370	1520	62%	740	1890	101%
A12 Wrentham (location V)	420	440	70	30	540	23%	60	570	30%
A12 Blythburgh (location W)	630	660	70	70	800	21%	140	870	32%
A12 north of Darsham Park & Ride (location X)	810	860	70	70	1000	16%	140	1070	24%
A12 Yoxford (location Y)	800	830	210	370	1410	70%	740	1780	114%
A12 south of Wickham Market Park & Ride (location Z)	1090	1110	80	380	1570	41%	760	1950	76%
A12 Woodbridge (location AA)	1080	1080	80	350	1510	40%	700	1860	72%

6.7.7. NPS-EN1 recognises that NSIPs would create substantial impacts on local transport infrastructure. These impacts have been significantly reduced by the embedded mitigation included within the proposals set out in this Stage 2 consultation, namely:

- the use of rail and marine modes to deliver freight and AILs;
- the construction of an accommodation campus for construction workers, so reducing journeys to work on the local road network;
- the development of park and ride facilities to reduce car journeys by those living at home or in non-campus accommodation; and
- direct bus services from Ipswich and Lowestoft.

6.7.8. Table 6.8 indicates that, aside from the A12 and B1122, the largest proportional increases in traffic arising from the construction phase are predicted to occur near Leiston. The impacts shown at Lover's Lane would only be realised if the rail proposal east of Eastlands Industrial Estate is implemented. If the green rail route were implemented then impacts at Lover's Lane would be lower.

6.7.9. Table 6.5 also illustrates that, at locations geographically more distant from the construction site, the increases arising from the Project diminish and become an increasingly small increment on predicted future traffic flows. On nearly all these roads, save for the A145 at Beccles (location M), there is no increase in HGV and bus movements. The increase on the A14 at Ipswich is small when compared to the existing traffic flows.

6.7.10. Tables 6.3, 6.4 and 6.5 present the residual traffic impacts after these measures have been taken into account. EDF Energy recognises that they represent, in many cases, significant increases in traffic flows over conditions that would be experienced in 2024 if Sizewell C were not under construction. However, in the great majority of cases, these increases are from low existing traffic volumes and the resulting traffic volumes would not exceed the traffic-carrying capacity of the road network. Consequently, they are unlikely to cause additional congestion or delays. EDF Energy recognises that the environmental effects of these traffic increases also need to be considered, so preliminary noise and traffic emissions assessments are set out in **Section 6.8**.

6.7.11. In some key locations, such as Farnham, Theberton and Yoxford, specific proposals to mitigate these effects are identified in this Stage 2 consultation. Here and elsewhere on the local highway network EDF Energy will

do further investigations of the likely effects of increased traffic flows on the environment, amenity, road safety and highway junction capacity. Where it is necessary to mitigate any identified impacts, EDF Energy will propose additional measures in a subsequent stage of consultation.

6.7.12. Notwithstanding, EDF Energy provides a commentary below on the predicted traffic impacts at the B1122, A12 and elsewhere. The daily, peak hour and HGV/bus traffic flow changes from **Tables 6.3, 6.4** and **6.5** are presented together for clarity. For each location, EDF Energy identifies the further work needed.

a) Traffic increases on the B1122

6.7.13. At the Stage 1 consultation, EDF Energy proposed that the B1122 would be the designated HGV route for traffic between the A12 and the Sizewell C construction site. The B1122 was the approved HGV route during the construction of Sizewell B. It avoids vehicles having to travel through Leiston, Saxmundham and most other local towns and villages. The B1122 would also be the route taken by the park and ride buses, and some cars and direct buses. It is acknowledged that additional Sizewell C construction traffic would be significant relative to current flows and proportionally much greater on the B1122 than on the A12 or most other local roads.

6.7.14. Following further refinement and development of the Project proposals, EDF Energy can now estimate the scale of additional traffic on the B1122 at peak construction, as **Table 6.6** details.

6.7.15. Current weekday all-vehicle daily traffic flows on the section of the B1122 between the junction with the A12 at Yoxford and the Sizewell C construction site are estimated to range between around 3,350 and 4,950 vehicle movements per day. Flows at the higher end of this range are more characteristic of the section south-east of the B1122/B1125 junction and through Theberton. Future flows by the time of Sizewell C peak construction (but without Sizewell C-related traffic) are predicted to rise to between around 3,750 and 5,550 vehicle movements per day. It is estimated that Sizewell C traffic at peak construction could add approximately a further 1,250 vehicle movements at the western end of B1122 at Yoxford and a further 2,050 vehicle movements east of B1125, leading to a total of between 5,000 and around 7,600 vehicle movements per day. This represents an increase of around 37% at Theberton and 33% on the B1122 at Yoxford.

Table 6.6 Peak period of Sizewell C construction

Changes in daily, peak hour and HGV and bus flows at the B1122 locations identified in **Figure 6.5**

Location	Current weekday traffic flows	Pre-SZC weekday traffic flows	SZC weekday peak construction traffic flows	With SZC weekday peak construction traffic flows	% increase	7am-9am weekday construction traffic	% increase	4pm-6pm weekday construction traffic	% increase	Current daily HGV and bus flow	Pre-SZC daily HGV and bus flow	With SZC daily HGV and bus flow Typical Day	% increase	With SZC daily HGV and bus flow Busiest Day	% increase
B1122 Abbey Road, central Leiston (location B)	4,700	5,200	2,400	7,600	46%	40%	37%	130	140	140	0%	140	0%		
B1122 Aldeburgh (location E)	3,500	3,900	250	4,150	6%	7%	7%	110	120	120	0%	120	0%		
B1122 Theberton (location Q)	4,950	5,550	2,050	7,600	37%	27%	25%	230	240	1,090	354%	1,540	542%		
B1122 Yoxford (location R)	3,350	3,750	1,250	5,000	33%	25%	23%	170	180	1,030	472%	1,480	722%		

6.7.16. These figures above assume that all direct and park and ride buses serving the construction site use the A12 and the B1122. EDF Energy considers that this is the most suitable route for these buses.

6.7.17. Additional car traffic on the B1122 would comprise a number of elements, including commuting journeys by construction workers residing east of the A12, daily visitors to the construction site, and non-work related trips from non-home-based workers and residents of the accommodation campus.

6.7.18. It is recognised that Sizewell C construction traffic on the B1122 would comprise a significantly higher proportion of larger vehicles than is currently the case. Current HGV and bus traffic flows on the B1122 at Theberton represent around 5% of existing flows, approximately 230 HGV and bus movements per day, which is estimated to rise to around 240 movements per day before Sizewell C peak construction.

6.7.19. Sizewell C peak construction traffic would lead to substantial increases in the average number of daily HGV and bus movements on the B1122. As **Table 6.6** shows, with further increases on the busiest days of HGV movements there could be up to 900 Sizewell C-related HGV movements, albeit these occasions would be infrequent. These increases are identified as Busiest Day in **Table 6.6**.

6.7.20. At B1122 Abbey Road in Leiston, flows increase significantly from a low existing level and the road capacity would not be exceeded. The other effects will be assessed to determine the need for any mitigation. Traffic increases at the B1122 in Aldeburgh are small and are unlikely to cause any congestion, delays or significant environmental effects.

6.7.21. The noise and air quality implications of the additional traffic are set out in **Section 6.8**. EDF Energy will consider amenity and other effects in order to assess the need for any further mitigation to that described in **Section 11 Highway Improvements**.

b) Traffic increases on the A12

6.7.22. **Table 6.7** summarises the daily, peak hour and HGV and bus flow changes on the A12 at various locations.

Table 6.7 Peak period of Sizewell C construction

Changes in daily, peak hour and HGV and bus flows at the A12 locations identified in **Figure 6.5**

Location	Current weekday traffic flows	Pre-SZC weekday traffic flows	SZC weekday peak construction traffic flows	With SZC weekday peak construction traffic flows	% increase	7am-9am weekday construction traffic % increase	4pm-6pm weekday construction traffic % increase	Current daily HGV and bus flow	Pre-SZC daily HGV and bus flow	With SZC daily HGV and bus flow Typical Day	% increase	With SZC daily HGV and bus flow Busiest Day	% increase
A12 Farnham (location U)	18,700	20,300	1,300	21,600	6%	3%	3%	900	940	1,520	62%	1,890	101%
A12 Wrentham (location V)	9,500	10,500	1,100	11,600–11,650	10%–11%	7%	8%	420	440	540	23%	570	30%
A12 Blythburgh (location W)	9,950	10,950	1,350	12,300	12%	8%	6%	630	660	800	21%	870	32%
A12 north of Darsham Park & Ride (location X)	14,000	15,350	1,600	16,950	10%	10%	6%	810	860	1,000	16%	1,070	24%
A12 Yoxford (location Y)	15,050	16,500	1,250	17,750	8%	6%	5%	800	830	1,410	70%	1,780	114%
A12 south of Wickham Market Park & Ride (location Z)	24,400	25,550	1,700	27,250	7%	5%	3%	1,090	1,110	1,570	41%	1,950	76%
A12 Woodbridge (location AA)	36,300	37,550	1,300	38,850	3%	0%	0%	1,080	1,080	1,510	40%	1,860	72%

6.7.23. A number of points can be noted from the figures in **Table 6.7**:

- the figures illustrate that existing and predicted future traffic flows on more southerly sections of the A12 are significantly higher than flows on the A12 at more northerly locations between Yoxford and Lowestoft;
- for all locations on the A12, the predicted increase in traffic arising from wider economic growth and development unrelated to Sizewell C is broadly similar to the impact related to Sizewell C;
- at all locations on the A12, the predicted increases in daily traffic volumes arising from Sizewell C construction traffic are below or within the 5% to 15% range, which was quoted at Stage 1 consultation for the section of the A12 through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham (the traffic volumes for all these villages are essentially the same as at Farnham);
- percentage increases arising from Sizewell C traffic are generally slightly lower during peak network periods than the overall total increase in daily traffic flows. This reflects higher existing flows during network peak periods as

well as the impact of EDF Energy’s proposed working patterns, which mean many workforce movements would occur outside the main network peaks;

- the daily traffic flows at Sizewell C peak construction would be well within the traffic-carrying capacity of the A12 at Wrentham (location V), Blythburgh (location W), Darsham (location X), Yoxford (location Y) and Wickham Market (location Z). The noise and traffic emissions effects of these increased traffic volumes are considered in **Section 6.8**. Other impacts, for example on the environment and amenity, resulting from the increase in traffic flows will be assessed and consulted on prior to the submission of an application for development consent; and
- at Woodbridge (location AA), the Sizewell C effect would be least, as the existing flows are higher. There is some evidence that non-Sizewell C traffic would use other routes to avoid delay in this area, irrespective of whether Sizewell C goes ahead or not.

6.7.24. EDF Energy’s proposals for the A12 at Farnham based on these increases are set out in **Section 11 Highway Improvements**.

c) Traffic increases elsewhere

Table 6.8 Peak period of Sizewell C construction

Changes in daily, peak hour and HGV and bus flows at the remaining locations

Location	Current weekday traffic flows	Pre-SZC weekday traffic flows	SZC weekday peak construction traffic flows	With SZC weekday peak construction traffic flows	% increase	7am-9am weekday construction traffic % increase	4pm-6pm weekday construction traffic % increase	Current daily HGV and bus flow	Pre-SZC daily HGV and bus flow	With SZC daily HGV and bus flow Typical Day	% increase	With SZC daily HGV and bus flow Busiest Day	% increase
Lover's Lane, Leiston (location A)	1,900	2,150	1,150	3,300	53%	25%	47%	170	170	970	471%	970	471%
B1119 Saxmundham Road, Leiston (location C)	4,050	4,550	1,050	5,600	23%	20%	19%	90	100	100	0%	100	0%
B1069 Coldfair Green (location D)	5,300	6,050	600	6,650	10%	8%	7%	200	210	210	0%	210	0%
B1125 Westleton (location F)	2,350	2,650	350	3,000	13%	9%	11%	100	100	100	0%	100	0%
A1094 west of Snape Road (location G)	7,400	8,350	50	8,400	1%	2%	0%	190	210	210	0%	210	0%
B1069 Tunstall (location H)	3,000	3,950	400	4,350–4,900	10%–24%	13%	14%	170	170	170	0%	170	0%
B1121 Saxmundham (location I)	5,000	5,600	100	5,700–5,750	2%–3%	3%	3%	60	60	60	0%	60	0%
A1120 Yoxford (location J)	3,750	4,450	350	4,800	8%	7%	6%	190	200	200	0%	200	0%
A144 Halesworth (location K)	7,000	8,100	450	8,550	6%	5%	4%	240	260	260	0%	260	0%
B1125 Blythburgh (location L)	1,500	1,700	150	1,850	9%	3%	9%	60	60	60	0%	60	0%
A145 Beccles (location M)	16,700	18,550	100	18,650	1%	1%	0%	440	480	520	8%	560	17%
B1119 between Framlingham and A12 (location N)	2,800	3,050	50	3,100	2%	1%	1%	30	30	30	0%	30	0%
B1078 Wickham Market (location O)	4,150	7,250	1,300	8,550–8,750	18%–21%	13%	11%	170	190	190	0%	190	0%
B1116 Hacheston (location P)	7,150	7,850	150	8,000	2%	1%	0%	90	90	90	0%	90	0%
A14 south of Ipswich (west of Seven Hills junction) (location S)	61,100	68,400	650	69,050	1%	0%	0%	8,090	9,530	9,830	3%	10,120	6%
A14 Felixstowe Branch (east of Seven Hills junction) (location T)	44,350	52,200	150	52,350–52,450	Less than 1%	Less than 1%	Less than 1%	6,320	7,770	7,800	0%	7,830	1%

d) Further modelling and assessment work

6.7.25. Table 6.9 summarises the further work that EDF Energy will undertake and consult upon prior to the submission of an application for development consent.

6.7.26. EDF Energy will continue to progress and refine its traffic modelling and assessment work taking account of comments received from the Stage 2 consultation

and those arising from SCC’s detailed reviews of the traffic modelling. More information will be published as part of a further stage consultation prior to submission of an application for development consent.

6.7.27. EDF Energy’s further discussions with SCC will also continue to consider whether any of the traffic modelling conducted to date, or further specific analysis arising from it, should give rise to additional mitigation measures.

Table 6.9 Further work

Location	Summary comment and further work prior to Stage 3				
	Environment	Amenity	Road safety	Junctions	No further work
Lover’s Lane, Leiston (location A)	●		●		
B1122 Abbey Road, central Leiston (location B)	●	●	●	B1119	
B1119 Saxmundham Road, Leiston (location C)	●	●	●	B1122	
B1069 Coldfair Green (location D)	●	●	●		
B1122 Aldeburgh (location E)					●
B1125 Westleton (location F)	●	●	●		
A1094 west of Snape Road (location G)					●
B1069 Tunstall (location H)	●	●	●		
B1121 Saxmundham (location I)					●
A1120 Yoxford (location J)	●	●	●	A12	
A144 Halesworth (location K)				●	
B1125 Blythburgh (location L)	●	●	●		
A145 Beccles (location M)	●	●	●	●	
B1119 between Framlingham and A12 (location N)					●
B1078 Wickham Market (location O)	●	●	●	●	
B1116 Hacheston (location P)					●
B1122 Theberton (location Q)	●	●	●		
B1122 Yoxford (location R)	●	●	●		
A14 south of Ipswich (west of Seven Hills junction) (location S)			●		
A14 Felixstowe Branch (east of Seven Hills junction) (location T)					●
A12 Farnham (location U)	●	●	●	●	
A12 Wrentham (location V)	●	●	●		
A12 Blythburgh (location W)	●	●	●		
A12 north of Darsham Park & Ride (location X)			●		
A12 Yoxford (location Y)	●	●	●	●	
A12 south of Wickham Market Park & Ride (location Z)			●		
A12 Woodbridge (location AA)			●	●	

6.8. Noise and traffic emissions assessments

a. Traffic noise assessment summary

6.8.1. Preliminary traffic noise modelling is being undertaken for both the A12 and the B1122. These roads would be used by HGVs and bus services and cars travelling to/from the main development site. As per the traffic assessment, the noise model will assess the future Reference Case (i.e. Without Development) and the Typical Day (i.e. With Development) for the peak construction year of 2024. The modelling will predict absolute noise levels and changes in noise levels between the Reference Case and the Typical Day.

6.8.2. HGV movements on these roads would predominantly be during the day. Workforce movements to and from the site via bus or car would occur in line with working patterns. Refer to **Section 5 Socio-economics**.

i. A12

6.8.3. The monitoring and preliminary analysis along the network indicates that many dwellings facing onto the A12 currently experience high levels of noise from road traffic. The Sizewell C construction-related traffic is not predicted to give rise to significant increases in the existing noise levels along the route during the day or night.

6.8.4. Modelling of traffic with EDF Energy's proposed one village bypass option at Farnham in place shows a considerable reduction in noise levels for those dwellings in Farnham closest to the bend and facing the road. A low to moderate reduction in noise levels would be experienced by the other dwellings in Farnham. However, there would be some dwellings to the west of Farnham in Mill Lane, Great Glenham Road and Low Road in Stratford St Andrew where it is predicted that there would be a significant increase in noise levels as a result of the re-routing of the traffic. Due to the distance of these properties however, the impact could be mitigated by screening to the west of the proposed road (refer to **Section 11 Highway Improvements**).

ii. B1122

6.8.5. Preliminary analysis of traffic-related noise impacts on the B1122 identifies that the additional HGV and other traffic movements in connection with Sizewell C are likely to lead to significant increases in noise levels for residents living adjacent to the B1122, particularly in Middleton Moor and Theberton. This is due to the low existing baseline flows.

6.8.6. Changes in noise levels would be more significant at night because of the potential for sleep disturbance. During the night-time the additional Sizewell C traffic on the B1122 would predominantly be cars and buses.

6.8.7. More refined modelling and assessments will be undertaken to better understand the level of impact along this road and to identify measures to reduce noise levels in sensitive residential areas. EDF Energy is also exploring other options to mitigate noise impacts on residential properties along the B1122 that could be affected by the Project.

iii. Other Roads

6.8.8. There are a number of other minor roads (e.g. B1125 and B1078) where noise levels may also change as a result of traffic movements associated with the construction phase of the Project. Although changes are not expected to be great, assessment of these will also be undertaken.

b. Traffic emissions assessment summary

6.8.9. Air quality is generally good, with some exceptions, in particular Stratford St Andrew and Farnham. Stratford St Andrew is also the location of an Air Quality Management Area (AQMA). The AQMA has been declared for 1–5 Long Row in Stratford St Andrew, due to monitored concentrations of NO₂ being close to or above the UK annual health-based threshold for the pollutant (air quality objective).

6.8.10. Preliminary air quality modelling and analysis of construction traffic for the A12 and B1122 has been undertaken. Consistent with the traffic and noise assessments, the air quality assessment will assess the future Reference Case and the Typical Day for the peak construction year 2024. The modelling will predict pollutant concentrations and changes in pollutant concentrations between the Reference Case and the Typical Day.

6.8.11. The modelling is currently based on a peak traffic scenario (refer to **Table 6.2**) which includes a number of conservative assumptions. In addition EDF Energy has conservatively assumed that not all of the improvements in air quality anticipated to take place by the Government would actually occur. As such, two future air quality scenarios have been considered.

6.8.12. In the first future air quality scenario, background air quality is not assumed to improve from 2014. In the second scenario, the improvements in vehicle emissions anticipated by 2024 are also achieved. The first future air quality scenario is more conservative than the second future air quality scenario.

6.8.13. The preliminary analysis indicates that there are no locations anticipated to exceed any UK health-based air quality objective for nitrogen dioxide or particulates. This is the case for both of the future air quality scenarios.

6.8.14. Overall changes in air quality at the pollutant concentrations predicted are not considered to be material for nitrogen dioxide or particulates in the preliminary modelling undertaken to date for either future air quality scenario. At Stratford St Andrew in the second, more conservative scenario, there would be a greater change for nitrogen dioxide. Overall, however, the predictions for the Stratford St Andrew AQMA are not considered to be significant.

6.8.15. More refined modelling and assessment will be undertaken to better understand the level of impact along these routes. It will also inform whether further air quality mitigation is required. Traffic data is also being reviewed for locations elsewhere on the highway network to identify if any further air quality modelling is required.

6.9. Feedback sought and next steps

6.9.1. Following analysis of the Stage 2 consultation responses EDF Energy will continue to develop the inputs and assumptions so that the resultant HGV and light goods vehicle volumes can be confirmed. This will enable the VISUM modelling work to be completed and submitted to SCC for review and refinement, where necessary. The VISUM output will be used to identify any other impact locations across the study area. In parallel, historic road accident data will be assessed. From these analyses all necessary highway mitigation measures will be designed, assessed against capacity and environmental criteria and the preliminary design subject to a road safety audit.

6.9.2. Bus service proposals from the park and ride facilities, direct bus services to Ipswich and Lowestoft and any local services will also be developed. The local cycling proposals will also be refined having regard to feedback from the Stage 2 consultation. Any additional measures needed to encourage cycling to the park and ride facilities, and from Leiston, Aldeburgh, Saxmundham and Thorpeness to the main development site will be presented in a subsequent stage of consultation. These non-car measures, together with any car sharing proposals, will be included in a Travel Plan.

6.9.3. Draft versions of the Transport Assessment, the TIMP and the CTMP, along with an Environmental Statement will be consulted on prior to submission of an application for development consent.

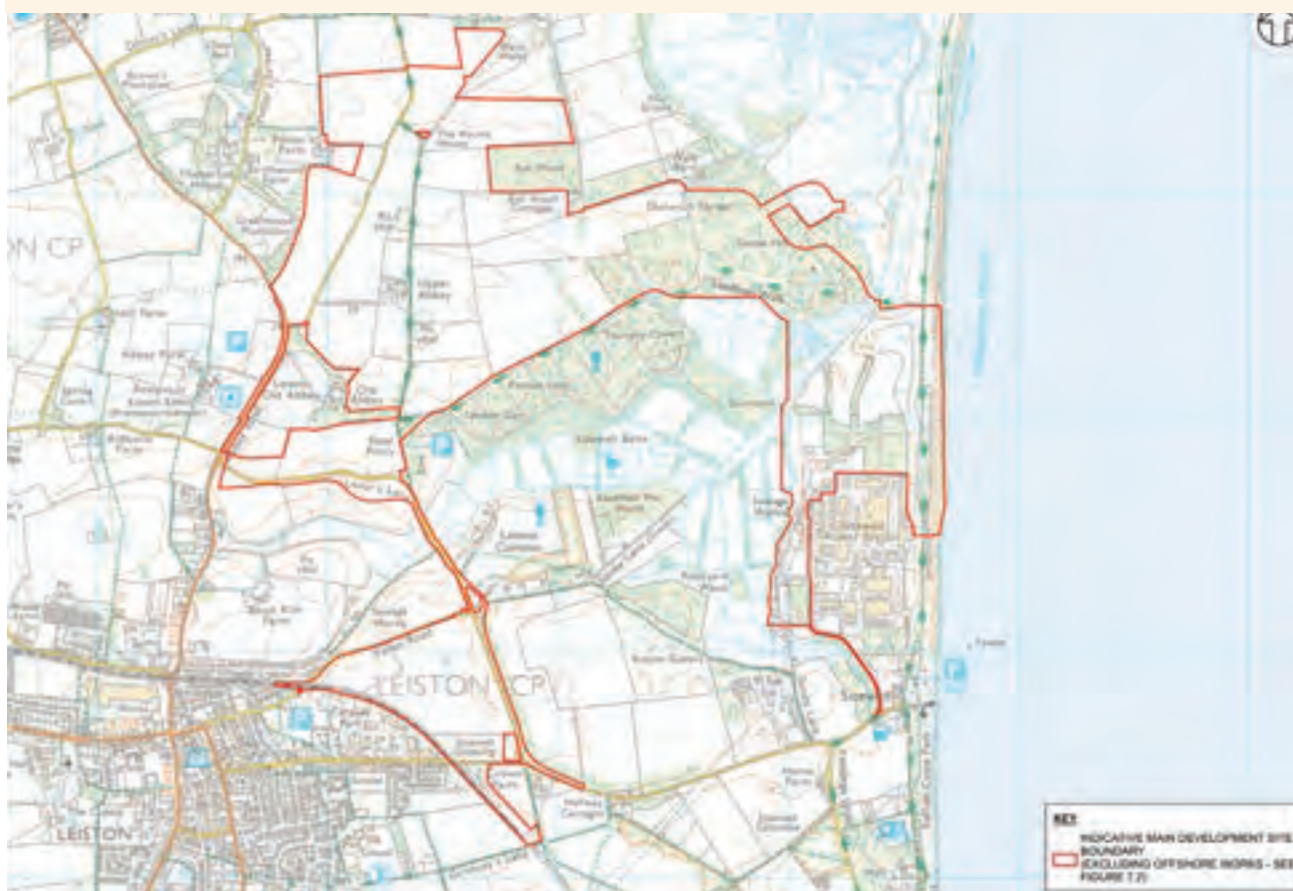
7. Main Development Site

7.1. Introduction

7.1.1. This section details the proposals for the Sizewell C main development site, which is located in the vicinity of the existing Sizewell power station complex. The

main development site comprises the land required for the permanent power station, together with land needed on a temporary basis to facilitate the construction of Sizewell C. The boundary of the Sizewell C main development site is shown in **Figure 7.1**.

Figure 7.1 Sizewell C indicative main development site boundary



7.1.2. The structure of this section is as follows:

- **Section 7.2** describes the existing key physical characteristics of the main development site and its environs.
- **Section 7.3** provides information on the UK EPR™ technology and operational considerations.
- **Section 7.4** describes the proposals for the new nuclear power station at Sizewell C, including a description of the environmental considerations that have informed the design of the individual elements of the proposals.
- **Sections 7.5–7.8** describes the temporary construction phase land uses and activities, including a description of the environmental considerations that have informed the design evolution of the individual elements of the proposals.
- **Section 7.9** provides preliminary environmental information relevant to the main development site, alongside an overview of the further studies/surveys that would be carried out to inform a full environmental impact assessment.

7.2. Site description

a) Site context

7.2.1. The main development site, which comprises the power station platform and temporary construction area, is located to the north and west of the existing Sizewell power station complex.

7.2.2. Leiston is situated adjacent to the nearest point of the main development site (land to the east of the Eastlands

Industrial Estate). There are a number of other villages located nearby, including Sizewell immediately to the south and Eastbridge and Theberton approximately 0.5km and 1.2km, respectively, to the north-west. The coastal towns of Thorpeness and Aldeburgh are located approximately 3km and 6km, respectively, further south, with Dunwich and Southwold approximately 4km and 12km, respectively, to the north. Ipswich is some 36km to the south-west.

Figure 7.2 shows the main development site in the wider context and includes areas required offshore for cooling water and marine transport infrastructure.

Figure 7.2 Site context



7.2.3. For descriptive purposes the main development site is divided into six areas (refer to **Figure 7.3**), which are described further in the subsequent paragraphs:

- 1.** Sizewell B: This area includes land adjacent to the existing Sizewell B sub-station, which is required to accommodate the new Sizewell C sub-station, a relocated pylon (to be sited further to the west) and provision for access and laydown areas. This area also includes the foreshore where the proposed Sizewell C sea defences would tie into the existing Sizewell B station sea defences;
- 2.** land to the north of Sizewell B: This land is required

for the new power station (the main platform) and new sea defences;

- 3.** land east of Bridleway 19 (in the vicinity of Goose Hill and Kenton Hills): This land is required for temporary construction purposes, as well as for the permanent access to Sizewell C;
- 4.** temporary land west of Bridleway 19: This land is required for the accommodation campus and permanent access arrangements off the B1122. This area also includes land south of Leiston Old Abbey which would be used if the green rail route option were pursued and

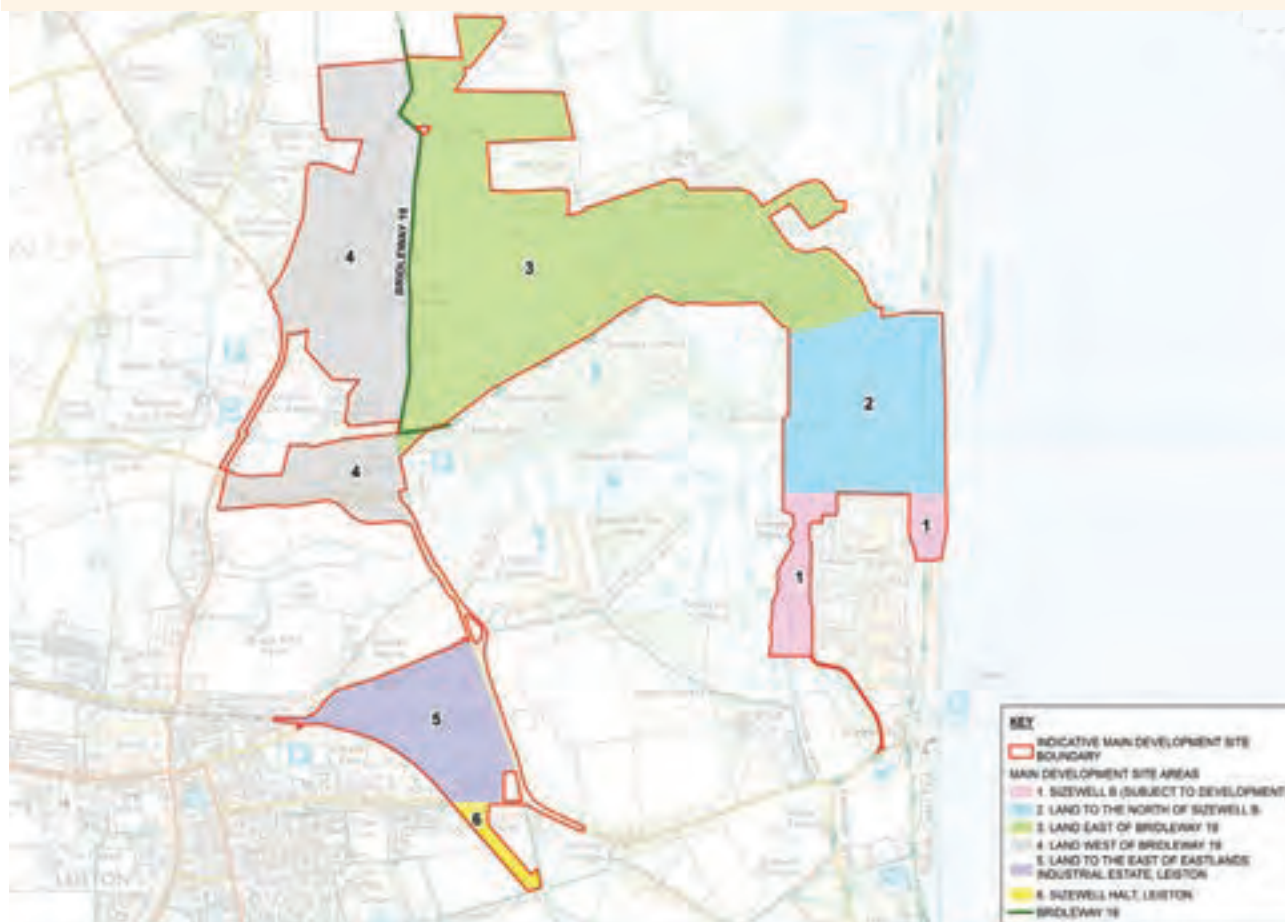
for spoil and topsoil storage. Further north, above the accommodation campus and to the west of Eastbridge Road, is Option 1 (Field 1) for the proposed borrow pit;

- 5. land to the east of the Eastlands Industrial Estate, Leiston: This land is required for construction and accommodation

(i.e. caravan park) purposes, and may be used if the rail route were to be sited in this location; and

- 6. The existing railhead and adjacent land is required for rail deliveries during construction of Sizewell C, especially during the early years.

Figure 7.3 Main development site areas



i) Sizewell B

7.2.4. The Sizewell B power station, which began operating in 1995, is owned and operated by EDF Energy Nuclear Generation Limited (NGL). The power station largely consists of simple rectangular forms with a strong hierarchy of buildings. The white vitreous enamel finished dome sits above the rest of the buildings, with the primary structures clad in blue profiled metal and the secondary buildings clad in pale grey and white metal. A number of ancillary uses are located outside the security fence area, including car parking, training facilities and a sewage treatment plant. Sizewell is currently connected to the national high voltage transmission network by means of four 400kV

circuits carried on two lines of pylons. The transmission network is owned and operated by National Grid.

7.2.5. This area of land sits within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB).

ii) Land to the north of Sizewell B

7.2.6. Land to the north of Sizewell B was used for its construction in the late 1980s/early 1990s. Following construction the land was the subject of a landscape restoration scheme. The site comprises mainly grassland with some areas of scrub and immature deciduous woodland planting. The site levels are 6.4m above

Ordnance Datum (AOD) in the south, dropping to around 2–3m AOD in the middle of the site. To the west, the site level falls steadily towards the Sizewell Marshes Site of Special Scientific Interest (SSSI) to about 0–1m AOD.

7.2.7. The site is bounded to the north by a substantial landscape feature, known as the Northern Mound, which was constructed as part of the Sizewell B restoration scheme. To the east the beach area was reshaped. This involved the establishment of an embankment at 7–10m AOD extending northwards from the Sizewell B sea defences to the Northern Mound, and a further embankment nearer to the sea at 5m AOD, with an amenity corridor in between. The Suffolk Coast Path runs through this amenity corridor.

7.2.8. The area of Sizewell Marshes SSSI that is located within the main development site comprises mainly reed beds, lowland ditches and scrub/wet woodland habitats, with some limited areas of grazing marsh/fen meadow habitat.

7.2.9. This area of land sits within the Suffolk Coast and Heaths AONB.

iii) Land to the east of Bridleway 19 (in the vicinity of Goose Hill and Kenton Hills)

7.2.10. North of the Sizewell Marshes SSSI the land gradually rises from around 0–5m AOD in the east, to 15–20m AOD at its western periphery. The rise in levels is relatively gentle, combined with a gradual rise from south to north.

7.2.11. This part of the main development site comprises agricultural land and coniferous plantation woodland with some mature tree belts (largely deciduous species) and field hedgerows. The area is mostly enclosed by existing woodland, including Goose Hill to the east and north-east, Ash Wood and Great Mount Wood to the north, Kenton Hills and Fiscal Policy to the south and Greenhouse Plantation to the west.

7.2.12. There is a small disused pit located on the east side of Bridleway 19, to the south of Upper Abbey Farm. Three residential dwellings, the semi-detached Ash Wood Cottages and the Round House, are located in the northern part of this area, to the south-east of Ash Wood and adjacent to the Bridleway 19 respectively.

7.2.13. This area of land sits within the Suffolk Coast and Heaths AONB.

iv) Land west of Bridleway 19

7.2.14. This area is generally flat, with a slight slope from south to north, and is bisected by the Eastbridge Road. The land is mostly in arable use at the northern end, with some pasture further south. There is a large disused pit containing grassland and mature scrub to the north of Upper Abbey Farm.

7.2.15. Upper Abbey Farm is a Grade II listed building located adjacent to Bridleway 19. The farmhouse has recently undergone repair following a fire and the surrounding out-buildings are used by Suffolk Wildlife Trust in connection with the ongoing management of the EDF Energy Estate (the Estate).

7.2.16. The site sits within a locally designated Special Landscape Area (SLA) and is adjacent to the Suffolk Coast and Heaths AONB.

v) Land to the east of the Eastlands Industrial Estate Leiston

7.2.17. This land comprises three arable fields to the east of Leiston bounded by Valley Road to the north, Lover's Lane to the east and King George's Avenue to the south. The western boundary is defined by a single rail track forming part of the Saxmundham – Leiston branch line, which serves the existing railhead in Leiston (Sizewell Halt). The field boundaries benefit from existing hedgerow and tree screening on all sides. There is agricultural vehicular access to the largest central field off the junction of Lover's Lane and Valley Road, with the smaller fields accessed from the public highway. This land is not within the SLA or AONB.

v) Sizewell Halt, Leiston

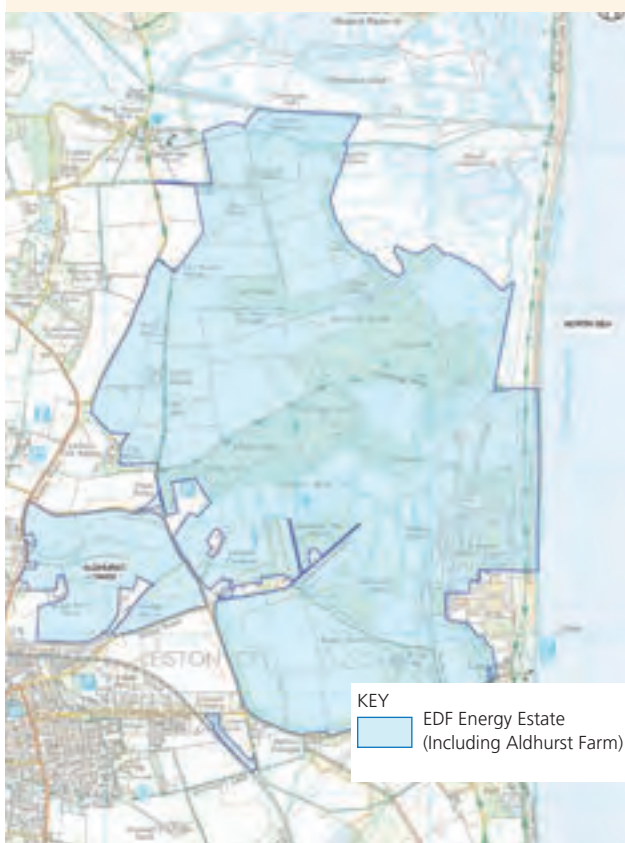
7.2.18. The existing railhead to the east of Leiston (Sizewell Halt) was used during the construction phase of Sizewell B. It comprises existing rail sidings, track, buffers and laydown/hardstanding, as well as accommodating the recently constructed Sizewell B Emergency Response Centre and Transformer Building. A separate siding immediately to the north-east is used by the Sizewell A station for decommissioning purposes. The site is accessed via King George's Avenue. This land is not within the SLA or AONB.

b) EDF Energy Estates

7.2.19. The majority of the main development site falls within the larger Estate owned and managed by EDF Energy, refer to **Figure 7.4**. The Estate is largely bounded to the north by the RSPB Minsmere Nature Reserve, to the south by Sizewell Gap/Lover's Lane, to the west by

the newly constructed Aldhurst Farm Habitat Creation Scheme and to the east by the foreshore. It incorporates a variety of land uses including the Sizewell Marshes SSSI, arable and former arable land in various stages of reversion to a semi-natural grassland and heathland mosaic, coniferous plantations and deciduous woodlands, and the vegetated coastal dunes and shingle beach fronting the Sizewell B power station and the Sizewell C main development site. The Sizewell A site does not form part of the Estate, as it is under separate ownership.

Figure 7.4 EDF Energy Estate



7.3. Nuclear operation

a) Introduction

7.3.1. This section details the operational characteristics of the UK EPR™, including details of the way in which safety considerations have had a bearing on design, as follows:

- key operational parameters;
- UK EPR™ technology;
- nuclear safety and design, including the Generic Design Assessment (GDA), the Nuclear Site Licence, and the Fukushima event;
- spent fuel and radioactive waste management; and
- decommissioning.

b) Key optional parameters

7.3.2. The Sizewell C nuclear power station development would comprise two UK EPR™ reactor units with an expected net electrical output of approximately 1,630 megawatts (MW) per unit, giving a total site capacity of 3,260MW. This is equivalent to supplying around six million homes.

7.3.3. Sizewell C is planned to operate for 60 years. It is expected that approximately 900 staff would be employed during normal operations. Sizewell C is designed to operate continuously 24 hours a day, save for routine maintenance outages. Therefore, access is required to the site and facilities at all times.

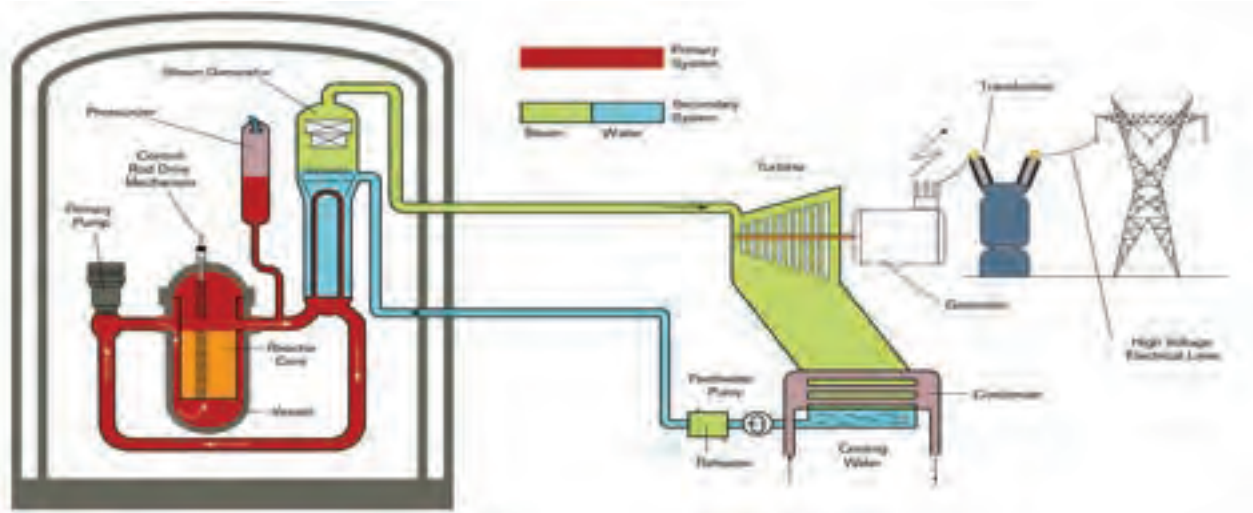
7.3.4. On average 1,000 additional staff would be employed during planned refuelling and maintenance outages, which are expected to take place approximately every 18 months for each UK EPR™ unit. Each outage would typically last between one and three months.

c) UK EPR™ technology

7.3.5. Nuclear power is a low-carbon technology. Its carbon dioxide emissions over the power station's life are far less than those of fossil fuel powered stations and are similar to wind power.

7.3.6. The UK EPR™ unit is a development of existing nuclear technology based on an evolution of the pressurised water reactor design. It has been developed by AREVA in partnership with EDF Energy and has been derived from extensive experience of developing and operating nuclear

Figure 7.5 Schematic layout of the electricity generating process of a pressurised water reactor



power stations worldwide. This experience has brought together reliable, well proven, technologies to provide enhanced safety, environmental protection, technical and economic performance in the UK EPR™ design.

7.3.7. The Hinkley Point C Project is the reference design for the proposed UK EPR™ units at Sizewell C.

7.3.8. At the centre of each UK EPR™ is a nuclear reactor capable of producing 4,500MW of thermal power from a controlled fission reaction contained within a thick-walled steel pressure vessel. Sizewell C would have two of these. As illustrated by the schematic diagram in **Figure 7.5**, a primary circuit of water under pressure is heated by the nuclear fission reaction to a high temperature of around 330°C. The pressure in this ‘primary circuit’ is maintained by heaters and sprays within a pressuriser vessel. The cooling water in this primary circuit is circulated through four heat exchangers (known as steam generators) where water in a separate ‘secondary circuit’ is converted to steam. The reactor pressure vessel, steam generators and pressuriser are contained within a pressure retaining reinforced concrete structure, known as the ‘containment’.

7.3.9. The secondary circuit steam is used to power a single large turbine per reactor, rotating at around 1,500 revolutions per minute (rpm). This is housed in a turbine hall. The turbine is directly connected to a three phase electrical generator capable of producing around 1,750MW of electrical power, of which around 1,630MW is exported. Sizewell C would have two turbine halls.

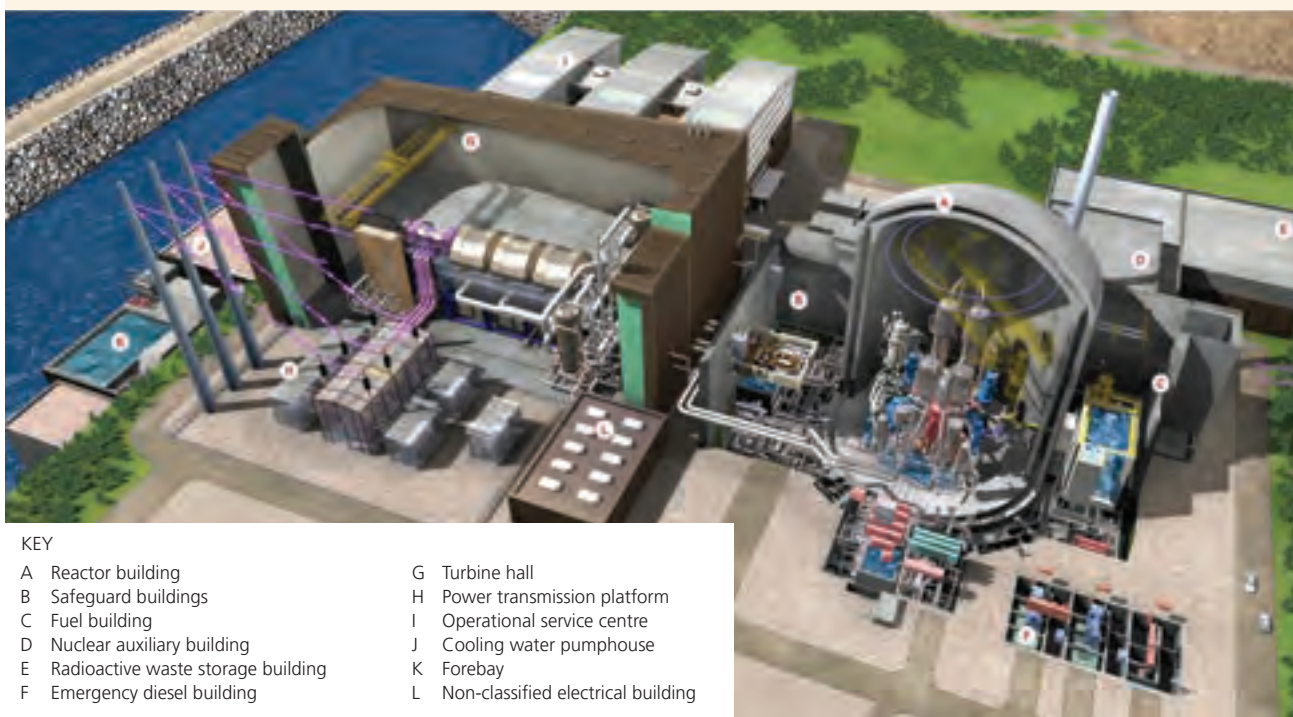
7.3.10. Steam leaving the turbine is circulated through condensers, which are cooled by a further separate circuit of sea water, and turned back into water (or condensate). This steam condensate is returned to the steam generators via high pressure pumps. For Sizewell C, the sea water would be taken from the North Sea via two cooling water intake tunnels (one associated with each unit) and returned via a single sub-surface combined outfall tunnel. Electricity from the Sizewell C generators would be stepped-up to high voltage (400kV) via transformers housed in electrical buildings adjacent to each turbine hall connected via underground cables to the new National Grid 400kV sub-station.

7.3.11. Emergency diesel generators provide back-up power to maintain reactor cooling in the event of an unexpected simultaneous shutdown of the nuclear reactors, and loss of incoming (off-site) power.

7.3.12. The UK EPR™ is designed for a lifetime of 60 years. It has the capacity to make more efficient use of fuel than current designs, thus reducing the quantities of spent fuel that need to be disposed of. Technologies used in the waste processing routes minimise the environmental effect of operation.

7.3.13. For illustrative purposes, the main buildings which comprise a UK EPR™ unit are shown schematically in **Figure 7.6**.

Figure 7.6 Illustration of typical EPR™ layout



d) Nuclear safety and design

7.3.14. The design of the UK EPR™ is the subject of generic and site specific safety assessments, to ensure that the highest standards of nuclear safety are maintained. These assessments include the results from worldwide operating experience, including a review of the events at Fukushima in Japan.

Generic Design Assessment

7.3.15. Generic Design Assessment (GDA) is the process by which the nuclear regulators, the Office for Nuclear Regulation (ONR) and the Environment Agency, assess new nuclear power station designs. The GDA process allows the regulators to assess the safety, security and environmental implications of new reactor designs. Assessment at the design stage enables identification of any potential issues so that they can be addressed by the requesting parties (the companies who have submitted a design for assessment) before commitments are made to construct the reactors.

7.3.16. Through the GDA process EDF Energy and AREVA submitted detailed information on their designs for the UK EPR™. A rigorous and structured examination was undertaken, carried out in an open and transparent manner, to facilitate the involvement of the public who were able to view and comment on design information.

In December 2012, the ONR issued a Design Acceptance Confirmation (DAC) and the Environment Agency issued a Statement of Design Acceptability (SoDA) for the UK EPR™ design, which concluded the GDA process.

7.3.17. The design of the plant, buildings and systems subject to the GDA process are required to meet the highest standards of public and environmental protection, and withstand a range of defined natural and human hazards, to ensure protection over the lifetime of the power station. Any modifications to the design would be controlled by a stringent change control process.

Nuclear Site Licence

7.3.18. In addition to the GDA process, which addresses generic safety, site nuclear safety is regulated under the Nuclear Installations Act 1965 (Ref. 1.8). Under this site specific regime, EDF Energy is required to obtain a Nuclear Site Licence from the ONR to build and operate a nuclear plant. Accompanying the licence is a set of conditions to be complied with covering construction, operation of the plant and staff organisation. The licensing process involves safety case submissions to demonstrate that operation of the proposed plant would not lead to harm to the operators or members of the public. The ONR's inspectors assess the submissions against their own set of Safety Assessment Principles.

Fukushima

7.3.19. The earthquake and tsunami in Japan in 2011, and the consequences for the Fukushima nuclear complex, led to a review of nuclear safety in the UK carried out by Dr Mike Weightman, Chief Inspector at the ONR. Separately, EDF Energy undertook its own review of the robustness of the proposed design, as well as the continued learning from the construction of the reference plant at Flamanville 3 and also EPR™ reactors at Taishan in China. The findings of these reviews has resulted in a number of changes to the configuration of buildings and requirements, which are included within the site layout.

Spent fuel and radioactive waste management

7.3.20. EDF Energy would ensure that the management of spent fuel and radioactive waste generated at Sizewell C protects both people and the environment, in a manner consistent with UK policy and legislation.

7.3.21. The UK EPR™ design optimises fuel use and generates less spent fuel than other nuclear reactors in the UK per unit of electricity generated.

7.3.22. Spent fuel removed from the reactor would initially be stored in the reactor fuel pool. Following this initial storage period, the spent fuel assemblies would be transferred to the separate on-site interim spent fuel store where they would be safely stored until a UK Geological Disposal Facility is available and the spent fuel is ready for final disposal.

7.3.23. The interim spent fuel store would be designed for a life of at least 100 years, which could be extended if necessary. The interim spent fuel store would be designed to be capable of operating independently of other parts of the power station in recognition that its lifetime would, under current assumptions, extend beyond the operational life and decommissioning of the other facilities on-site.

7.3.24. The design of the UK EPR™ planned for Sizewell C includes a number of measures aimed at limiting the amount of radioactive waste generated. Radioactive waste generated at Sizewell C would fall into two categories – Low Level Waste (LLW) or Intermediate Level Waste (ILW). LLW would be disposed of as soon as reasonably practicable, following treatment to limit its volume and appropriate conditioning or packaging to allow its safe transport and disposal. ILW would be conditioned and packaged on-site throughout the operational phase. The packages would be safely stored in the ILW interim storage facility until a UK Geological Disposal Facility is available to accept waste from Sizewell C for disposal.

As with the interim spent fuel store, it would be possible to extend the life of the ILW interim storage facility.

Decommissioning

7.3.25. At the end of electricity generation at Sizewell C, the site would be decommissioned. The process of decommissioning would be divided into a number of activities leading to the clearance and delicensing of the site and, ultimately, its release for reuse.

7.3.26. The UK EPR™ has been designed with decommissioning in mind, enabling radioactive waste quantities to be limited when decommissioning takes place.

7.3.27. The decommissioning strategy to be employed for Sizewell C would be early site clearance. Decommissioning would begin as soon as practicable after the end of electricity generation. The decommissioning of Sizewell C, with the exception of the interim spent fuel store, could be achieved within approximately 20 years of the end of generation.

7.3.28. The interim spent fuel store would continue to operate until a UK Geological Disposal Facility is available and the spent fuel is ready for disposal.

7.3.29. Before decommissioning could take place, EDF Energy would need to obtain separate consent from the ONR under the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended) (Ref. 7.2).

7.3.30. EDF Energy, like all new nuclear operators, is required to have an approved Funded Decommissioning Programme (FDP) in place before nuclear safety related construction begins. The FDP is legally binding, and sets out the legal and financial arrangements to ensure that the full costs of decommissioning and the full share of waste management and disposal costs will be met from funds set aside during the operation of the power station.

7.4. Permanent development

a) Introduction

7.4.1. This section details the proposals for the permanent power station development and the wider Sizewell C masterplan area, including:

- design principles and design brief;
- a masterplan for the Estate;

- a landscape strategy;
- information on the power station layout and appearance of buildings in the landscape;
- the approach to design of the principle power station buildings; and
- key ancillary requirements for the power station.

b) Design principles and design brief

7.4.2. Table 7.1 sets out those that will guide the Project. Taking this overarching guidance into account, a draft set of design principles and design brief information has been developed in consultation with the local authorities and Natural England. The principles and design brief focus on key safety, environmental and project considerations. For example, the design of the power station draws heavily on generic design and operational safety principles, as they guide the layout and form of buildings. The landscape and biodiversity principles seek to reduce effects on the AONB and ecology designations, whilst seeking to minimise land-take within the Sizewell Marshes SSSI. In the wider context, landscape, biodiversity and amenity principles have guided proposals contained in the permanent masterplan. Access

and security principles have established a framework for the provision of a new access road to the site and for security measures to be implemented in accordance with EDF Energy’s standards and the ONR’s requirements.

7.4.3. The design principles help define and establish how the Project can fulfil the criteria of ‘good design’, as set out in National Policy Statements (NPS) EN-1 (Ref. 1.1) and NPS EN-6 (Ref. 1.2). Section 4.5 of NPS EN-1 (also referenced in Section 2.8 of NPS EN-6) states:

“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.”

7.4.4. The design principles are intended to provide fixed guidance as the Project develops, whereas the design brief will take account of emerging Project information as detailed in Table 7.1.

Table 7.1 Design principles and brief

Design Principles	Design Brief
<p>1. Generic Design Sizewell C will be designed to comply with regulatory requirements namely the outcome of the UK EPR™ GDA</p>	<p>1a. Design in accordance with ONR Guidance on the GDA (Ref. 7.3), where ‘significant changes to the GDA design are to be avoided for reasons of standardisation except where changes would give safety benefits’ (paragraph 168). This includes replication of:</p> <ul style="list-style-type: none"> • the structural design of the UK EPR™ buildings and structures; • the size, form and finish, including concrete colour spectrum, of the UK EPR™ safety related buildings and structures, including the nuclear islands, fuel and waste storage buildings and cooling water pumphouses; • the UK EPR™ building configuration and layout; and • the main plant connections and galleries between the UK EPR™ buildings and structures.
<p>2. Construction and Commissioning The proposed design must ensure that the power station can be constructed safely.</p>	<p>2a. Comply with the Construction (Design and Management) Regulations (CDM) in all design and construction. 2b. Provide sufficient space and separation for access and movement of people, plant and materials around the site during construction.</p>
<p>3. Operations The proposed design must ensure that the power station can be operated and maintained safely in accordance with the Nuclear Site Licence and other applicable regulations and consents.</p>	<p>3a. Provide protection against natural and human external hazards, using the ALARP (As Low As Reasonably Practicable) principle. 3b. Provide a safe working environment for the workforce and visitors. 3c. Provide adequate space for safe repair and maintenance of all power station elements including buildings, underground galleries, roads, drainage and fencing. 3d. Provide safe access for periodic inspection of safety critical structures. 3e. Allow for operational changes that occur every 18 months during outages, including fluctuations to the size of the workforce on-site.</p>

Table 7.1 Design principles and brief

Design Principles	Design Brief
<p>4. Decommissioning The power station site and structures must consider safe decommissioning as part of the design.</p>	<p>4a. Replicate the UK EPR™ generic design to ensure a consistent and safe approach to future decommissioning.</p>
<p>5. Programme EDF Energy's programme for delivery of the Project is to be maintained.</p>	<p>5a. Avoid redesign activity with the potential to cause programme delays either during pre-construction (for investment decisions) or during construction (where bespoke build elements could risk delays), especially for those buildings and structures governed by the GDA.</p> <p>5b. Develop any site-specific designs for Sizewell C to allow procurement, construction and commissioning within the planned construction programme.</p>
<p>6. Cost To ensure commercial viability the Sizewell C Project needs to achieve real cost savings associated with being the 'next of a kind', avoiding significant redesign without compromising overall design quality.</p>	<p>6a. Maintain Hinkley Point C designs wherever practicable in order to avoid redesign costs, maximise the efficiency of construction and ensure consistency of the operational and maintenance regime.</p> <p>6b. Monitor the cumulative cost impact of design changes.</p>
<p>7. Quality EDF Energy is dedicated to good design for the Sizewell C development.</p>	<p>7a. Design Sizewell C to demonstrate and symbolise EDF Energy's commitment to good design.</p> <p>7b. Maintain viability by balancing high-quality design within the required programme and budget.</p>
<p>8. Environmental Legislation The development will be designed to comply with all associated environmental legislation and have regard to best practice.</p>	<p>8a. A requirement to comply with legislation will be embedded into the design process at the earliest opportunity. Best environmental practice will be taken into account to help ensure high standards of environmental protection</p>
<p>9. Landscape and Visual Amenity The development will be designed to take account of potential effects on the purpose of the AONB designation. Parties will aim to reach common ground on the definition of the special qualities of the AONB in order to help inform design. Where likely significant effects cannot be avoided or reduced then mitigation measures will be applied.</p>	<p>9a. Plan the construction and operational phases of the development to optimise land use and mitigate landscape, seascape and visual effects, where reasonably practicable.</p> <p>9b. Retain existing screening landscape features, where reasonably practicable, and promote appropriate new landscape design (planting and landform) to mitigate the landscape and visual effects of the development.</p> <p>9c. Establish new planting and landform at the earliest reasonably practicable opportunity.</p> <p>9d. Plan the development and design structures and buildings to respect the rural and, in part, wilderness character of the landscape.</p> <p>9e. Select finishes (materials, colour and texture) to be sympathetic to local landscape and seascape and built context, where reasonably practicable.</p> <p>9f. Design associated infrastructure, including lighting, access and fencing, to minimise, where reasonably practicable, landscape, seascape and visual effects.</p> <p>9g. Minimise, where reasonably practicable, visual effects at night from lighting and light spill without compromising either safety or security.</p>
<p>10. Biodiversity The development will be designed with the aim of avoiding significant harm to biodiversity (habitats and species) particularly designated interest features of nationally and internationally designated sites, protected and priority species. Where likely significant effects cannot be avoided or reduced then mitigation measures will be applied, as necessary. Enhancements to existing habitats will be incorporated where reasonably practicable.</p>	<p>10a. Minimise the likely significant adverse biodiversity effects and seek opportunities post-construction through retention of existing habitats, where reasonably practicable, and creation of new habitats.</p> <p>10b. Seek to retain areas of habitat connectivity and continuity as far as possible within the EDF Energy Estate.</p> <p>10c. Design the development, including lighting, access and fencing, to minimise disturbance to protected species, including at night, and severance of habitats, where reasonably practicable.</p> <p>10d. Minimise land take from the SSSI.</p>

Table 7.1 Design principles and brief

Design Principles	Design Brief
<p>11. Historic Environment The design of the development will consider potential effects on designated and non-designated heritage assets, including buried archaeology and historic landscape character.</p>	<p>11a. Avoid or minimise the likely significant effects on designated heritage assets and their settings, and avoid or minimise likely significant impacts on other non-designated heritage assets including buried archaeology, wherever practicable.</p>
<p>12. Amenity and Recreation The development will be designed to reduce impacts on recreational assets and to deliver appropriate alternative opportunities.</p>	<p>12a. Create and maintain safe public access (pedestrian, equestrian, cycle) through the EDF Energy Estate, integrated with existing networks, where reasonably practicable. 12b. Ensure that facilities for public use and enjoyment in different parts of the EDF Energy Estate take into account the balance of other considerations including landscape character, the historic environment and ecology.</p>
<p>13. Security The development must incorporate proportionate security provisions in accordance with ONR requirements and EDF Energy standards.</p>	<p>13a. Design and install physical security measures that are appropriate to the level of security required in each location.</p>
<p>14. Access Permanent access to and within the site must meet all operational requirements</p>	<p>14a. Provide a new access from the north-west as the main operational access to Sizewell C taking into account the surrounding environment. 14b. Maintain a second independent access point to the power station, for security purposes. 14c. Include access route for workforce, pedestrians and cyclists as appropriate. 14d. Design road lighting and signage to limit impact on the surrounding landscape and wildlife where practicable. 14e. Design appropriate facilities for sea-borne delivery of Abnormal Indivisible Loads (ALs).</p>
<p>15. Sizewell Context Sizewell C structures should complement the existing structures within the landscape, most notably Sizewell A and B.</p>	<p>15a. Design Sizewell C as a planned composition with Sizewell A and B, balancing proportions and impact across the sites. 15b. In outline and based on current knowledge, consider the influence of the future form and appearance of Sizewell A as decommissioning continues. 15c. In order to influence design proposals, assess the relative positioning and prominence of Sizewell C prominent buildings and their impact on key views of the Sizewell site. 15d. Aim to place power transmission routes underground within the Sizewell C operational site and avoid additional transmission pylons within the EDF Energy Estate.</p>
<p>16. Sizewell C Operational Site Sizewell C must be an efficient and well-ordered facility. It should provide visible reassurance of a properly functioning and safe site, considerate of the area of environmental sensitivity.</p>	<p>16a. Design Sizewell C as a masterplanned composition, not a series of individual structures. 16b. Recognise the crucial operational and constructional differences between the Sizewell C UK EPR™ and Sizewell B, and the consequent impacts upon form, construction, materials and appearance. 16c. Develop a coordinated architectural language for each of the three key families of buildings that read together throughout Sizewell C including: <ul style="list-style-type: none"> • UK EPR safety related buildings; • conventional island buildings (turbine halls) and ancillary structures; and • workforce buildings. 16d. Adopt EDF Energy sustainability policies and consider high sustainability ratings for buildings, where appropriate, using an independent rating system. 16e. Design stacks to the minimum height necessary, based on modelled dispersion requirements. 16f. Use durable, low maintenance materials suitable for a marine environment for the external envelope of all buildings. 16g. Minimise the need for permanent access systems, railings and other secondary structures attached to buildings and, where these will be visible from outside the site, maintain a coordinated approach, where reasonably practicable.</p>
<p>17. Workforce EDF Energy is committed to providing a high-quality workplace for the entire power station workforce.</p>	<p>17a. Create a sense of place and community for the workforce within the site. 17b. Design workforce buildings, occupied by large numbers of staff, to respond to occupants' needs for access, views, daylight, shading and ventilation. 17c. Use soft and hard landscaping to provide character to those external areas and routes within the site used most intensely by pedestrians.</p>
<p>18. Wider EDF Energy Estate Design structures located outside the operational platform to take into consideration the local surroundings.</p>	<p>18a. Design new buildings located outside the main Sizewell C platform to be responsive to their individual local context whilst maintaining a coordinated high-quality approach to the whole development.</p>

c) Masterplan

i. Introduction

7.4.5. The Sizewell C operational masterplan (refer to **Figure 7.7**) encompasses the majority of the main development site and the wider Estate. Areas not included are the borrow pit Option 1 (i.e. Fields 1 and 2), the field west of the existing Eastbridge Road, the area to the north of Lover's Lane and west of the Sizewell B District Survey Laboratory and the land to the east of the Eastlands Industrial Estate. These areas are currently outside of EDF Energy's land ownership. However, should they come into EDF Energy's land ownership at a later stage they may be included within the masterplan for the Estate.

ii) Permanent masterplan

7.4.6. The masterplan proposals would help to mitigate the landscape and visual effects of the power station development within the AONB, as well as delivering ecological mitigation and enhancement. More generally, the proposals would enhance the wider landscape, ecology and recreational value of the AONB.

7.4.7. Following construction, land used temporarily would be restored through a combination of woodland planting and the creation of heath, scrub and acid grassland. Habitat creation would be extended to cover the agricultural land within the Estate, which includes the Aldhurst Farm Habitat Creation Scheme. This would result in a substantial tract of interconnected semi-natural habitat being created from the borders of Minsmere Nature Reserve in the north to the heathland areas of Aldringham Walks to the south, with the Sizewell Marshes SSSI and Aldhurst Farm Habitat Creation Scheme constituting an integral wetland feature in between. This would represent a major initiative carried out at a landscape scale for the benefit of people and wildlife. By improving the connectivity between existing habitats with new habitat, there would also be a significant improvement for the benefit of biodiversity.

7.4.8. A number of habitat creation schemes such as at Aldhurst Farm and reptile mitigation on the former arable land off Sizewell Gap are already underway. Although the primary aim of this early work is ecological compensation and mitigation for the effects of Sizewell C, these schemes represent a significant step towards the long-term goal of maximising biodiversity and enhancing the AONB.

Figure 7.7 Sizewell C – operational masterplan





iii) Masterplan overview

7.4.9. The land use precedents for the proposed masterplan can be traced back to the early 1990s when the site was the subject of a previous nuclear power station proposal for a twin pressurised water reactor (PWR) development, in effect a twin replica of Sizewell B. Similar to the current proposal, the majority of the power station footprint was proposed to be located north of the Sizewell B station on land previously used for Sizewell B construction. The site was proposed to be accessed via a new road routed from the north-west, with a crossing over the SSSI and the landscape restoration scheme involved the creation of heathland across the Estate.

7.4.10. The current masterplan reflects the need to ensure the power station constitutes a good fit in the landscape, while allowing sufficient space for it to be constructed and operated efficiently and safely. The masterplan also seeks to ensure that opportunities are taken to mitigate effects and, where possible, improve the overall landscape, ecological and recreational value of the Estate. This has been achieved by seeking to retain, as far as is practicable, the essential

character of the immediate surroundings of the power station. These key features include the Sizewell Marshes SSSI to the west, the forested curtilage of Goose Hill to the north-west, the Northern Mound landscape feature immediately to the north and the foreshore area to the east.

7.4.11. The need to make the best use of available land has informed the proposed relocation of some Sizewell B ancillary functions (refer to **Section 4 Project Overview** for details). Freeing up this land for development would enable Sizewell C to be sited as near to the principal buildings of Sizewell B as possible. It would also make for a more compact development overall, and ensure that the Northern Mound is retained as an important landscape feature and environmental buffer between the power station and land to the north.

7.4.12. As well as seeking to limit the north-south extent of the power station footprint, close attention is being paid to the east-west axis in view of the Heritage Coast and footpath corridor along the foreshore and the Sizewell Marshes SSSI. A key design tenet of the

Figure 7.8 Areas of enhancement and restoration



permanent scheme is to maintain the existing eastward line of built development established by Sizewell A and B (refer to **Table 7.1**). However, the design of the UK EPR™ means that it would be necessary to construct new sea defences east of the building line. As well as performing a flood protection function for the power station, the sea defences and their tie-in with the existing Northern Mound would help screen the lower parts of the development. On the northern and western flank of the permanent development platform, attention has focused on minimising land take from Sizewell Marshes SSSI.

7.4.13. Another component of the masterplan strategy is to minimise the number of buildings on the main platform and to combine facilities, where possible, with the Sizewell B station to reduce the amount of land required across the nuclear complex. For example, opportunities will be explored to use storage facilities off-site. This is already an established practice by the Sizewell B power station, with facilities used in Leiston.

vii) Landscape strategy

7.4.14. The overall approach to the landscape strategy is to restore and enhance areas used during the construction phase, and to take the opportunity to enhance the landscape, biodiversity and recreational value of the wider Estate. In addition the opportunity is being taken to enhance the landscape of those areas subject to early ecological mitigation including Aldhurst Farm and the reptile mitigation area near to Sizewell Gap. The broad sequencing of enhancement across the Estate is shown in **Figure 7.8**.

7.4.15. More specifically, the landscape strategy involves phased tree and hedgerow planting across the Estate. Some early tree planting around the periphery of the construction site has already been completed (winter 2014/2015) and it is proposed to carry out further planting at the start and end of the construction phase. Refer to **Figure 7.9** for details.

Figure 7.9 Early and proposed woodland and hedgerow planting



d) Power station layout

i. Layout

7.4.16. This section provides information on progress made since the Stage 1 consultation on refining the layout of the power station. **Figures 7.10 and 7.11** show the progression of the power station layout between the Stage 1 and 2 consultations. The illustrations show that the disposition of the majority of safety related UK EPR™ buildings is fixed via the outcome of the GDA. Specifically, the complex functional relationships and connections between the buildings have been subject to considerable design development and scrutiny, fixing the relative positions of most buildings. For those buildings where the layout is not fixed, the focus has been on responding to comments received from the Stage 1 consultation and to design changes emerging from Hinkley Point C and the Fukushima review.

7.4.17. **Figures 7.10 and 7.11** show the essential changes to the layout. Less land within the Sizewell Marshes SSSI is proposed to be used than set out at Stage 1 in the north-west corner, achieved by a reduction in construction usage, the repositioning of the SSSI crossing further east and reconfiguration of buildings in the north-west part of the main platform. The reduction in SSSI usage in the north-west is counter-balanced to an extent by the footprint extending slightly westwards into the SSSI in the south-west corner to accommodate the interim spent fuel store, the intermediate level waste interim storage facility and the enlarged raw water supply and storage facility along the west side of the main platform. The latter structure is being provided, following the Fukushima review, to ensure the safety of the power station for an extended period of time even in the event of a complete loss of cooling water from the North Sea.

7.4.18. With regard to the SSSI itself, design progress has focussed on diversion of Sizewell Drain along the western edge of the platform and rationalising the watercourse on the northern edge of the main platform, by moving the confluence of the channels further west. The design of the diverted Sizewell drain would minimise land-take from fen meadow whilst also maximising the biodiversity interest of the re-routed ditch. It is envisaged that a water control structure, such as a tilting weir, would be included. This would improve the management of water levels within Sizewell Marshes SSSI which should help maximise the biodiversity interest of the marshes in the long-term.

7.4.19. Security fencing for the main platform would be installed in accordance with regulatory requirements,

which stipulate dimensions and clearances. Fencing in other areas would reflect the associated security needs.

e) Approach to design of the principal power station buildings

7.4.20. **Figure 7.10** identifies those buildings that have a fixed location and external finish and those which have a fixed location but where the external finish could be varied. These buildings are divided into two categories: the nuclear safety-related buildings and conventional buildings. The subsequent paragraphs describe the approach to determining the finish of these buildings.

i. Nuclear safety related buildings

Reactor buildings

7.4.21. It is necessary for the external concrete finish of buildings with a key nuclear safety function (e.g. the nuclear island, the interim spent fuel store and the cooling water pumphouses) to be routinely visually inspected.

7.4.22. Some respondents to the Stage 1 consultation sought to explore the potential for the Sizewell C domes to match or reflect the design of the Sizewell B dome. The shape of the Sizewell C and Sizewell B reactor building domes are different and there is also a difference in the design philosophy. The Sizewell B dome has a structural concrete inner shell which forms the primary containment and acts as aircraft crash protection. The outer shell acts as a secondary containment, and is only as thick as it needs to be for structural stability. A 2m gap between the inner and outer shells allows for inspection of the safety critical elements. As no external inspection is required of the secondary containment, the dome is finished in the vitreous enamel cladding.

7.4.23. The Sizewell C dome has an outer structural shell surrounding the inner containment. This outer shell would need to be inspected and potentially repaired from the outside to ensure the integrity of the structure is maintained over the operational life of the plant. Inspection and potential repair work would therefore require access to the concrete surface.

7.4.24. Analysis has been carried out since the Stage 1 consultation to review whether it would be possible to redesign the Sizewell C domes. For example, it was considered whether it was feasible to erect an outer steel screen or cladding structure with an applied finish similar to Sizewell B, thereby still allowing for inspection and maintenance of the concrete. While this type of modification is technically feasible, the reactor buildings would have to

Figure 7.10 Stage 1 layout



Figure 7.11 Key layout changes since Stage 1



support substantial additional loadings. Standardisation of nuclear safety design across a new fleet of power stations is a fundamental safety consideration (refer to Design Principle 1 in **Table 7.1**). A change of this significance would lead to project delays as the Generic Design implications would need to be addressed. From a wider perspective significant time delays could undermine national energy policy objectives by preventing new nuclear coming on stream. As an alternative, consideration was given to the potential for colour pigmentation of the external concrete. However, this has been discounted due to the adverse impact upon strength and durability of the material.

7.4.25. For these reasons, colouring or cladding the Sizewell C domes has been deemed not to be feasible and modifications to the reactor domes have not been pursued. However, there is potential to influence, to some extent, the appearance of the concrete through the choice of the aggregate used; the aggregate being the component in the concrete which contributes most to its colour. The consistency and high-quality of the concrete finish would be assured by exacting quality controls, providing a high degree of uniformity.

Turbine halls

7.4.26. With the nuclear islands set back into the site, the location and size of the turbine halls would assume more prominence in the coastal landscape. While there are specific technical and operational requirements for replication of the Hinkley Point C design, EDF Energy is proposing to treat the external appearance of the turbine halls to reflect the AONB context. Therefore, the design of the structures is proposed to be a simple box form with plain elevations and appropriate cladding and edge treatment. In addition, the cladding would be continuous to ensure no light is emitted from the structures. An illustrative design will be developed for inclusion in a later stage of consultation.

Operational service centre

7.4.27. The operational service centre would be the focus for the power station's workforce. It would be in operation 24 hours a day, seven days a week. The building would largely comprise office space, with workshop and warehouse functions at lower levels. The lower levels would be concealed when viewed from the north, south and west by the surrounding buildings and from the eastern seaward side by the sea defence mounds. The office space would be arranged in two wings sitting above the lower level podium, linked by atrium and circulation spaces. The design of this building would need to follow the functional drivers set by HPC, but as it is a non-nuclear safety-related structure there would be some flexibility over its external design.

Ancillary buildings

7.4.28. This group of buildings would comprise staff and administration functions, including facilities to support operational logistics. These smaller buildings would support the day-to-day operation of the site providing office space, equipment storage, access control and ancillary plant. The buildings would be located on the main platform and on land immediately north of the bridge, close to the car park.

Transmission arrangements

7.4.29. Electrical connections from Sizewell C would be made via underground cables from the site to a new National Grid 400kV sub-station, to be located adjacent to the existing Sizewell B sub-station. This would provide the connection for Sizewell C to the existing national grid high voltage transmission system. It is likely that one existing National Grid pylon would need to be relocated to allow the existing overhead lines to connect to the new sub-station. No additional overhead line circuits should be required for Sizewell C in the vicinity of the site. Further studies will be completed to confirm the details of the revised overhead line connection.

ii.Environmental considerations for the principal power station buildings

Landscape and visual

7.4.30. **Figures 7.12–7.18** illustrate in outline how the proposed Sizewell C buildings would be viewed in the landscape. Due to the topography of the surrounding landscape, including the Northern Mound, and the likely height of the sea defences, the majority of the power station's lower lying structures would not be seen from key viewpoints along the coast. The visibility of the power station from the west would be broken up by mature woodland in the Sizewell Marshes SSSI and the more undulating topography further inland.

Figure 7.12 View looking south-east across Sizewell Marshes SSSI



Figure 7.13 View looking south along the foreshore from the Northern Mound



Figure 7.14 View looking north-east from Grimsey's Lane



Figure 7.15 View from the District Survey Laboratory



Figure 7.16 View looking east with Leiston Abbey in the foreground



Figure 7.17 View looking east from Abbey Lane near to the Cakes and Ale car park



Figure 7.18 View looking south from Minsmere Sluice



7.4.31. Figure 7.12 illustrates how the two reactor domes and interim spent fuel store stack would rise above a line of mature trees, which would be retained.

7.4.32. Figure 7.13 illustrates a view of Sizewell C from the north of the site. The main power station buildings seen are the turbine halls in the foreground and the northern reactor building set back inland.

7.4.33. Figure 7.14 illustrates the height and extent of the Sizewell C power station from an inland location, with Sizewell A and Sizewell B to the right. The buildings seen from this location would be the two reactor buildings and the turbine halls.

7.4.34. Figure 7.15 illustrates the top of the Sizewell A reactor building and Sizewell B reactor dome with a partially visible Sizewell C station, with the visibility of Sizewell C broken up by intervening woodland.

7.4.35. Figure 7.16 illustrates the top of the Sizewell B dome. It demonstrates that from this area and elevation, Sizewell C would not be seen with the woodland of Leiston Old Abbey and higher intervening land forming a screen.

7.4.36. Figure 7.17 shows a view taken further inland and at a higher elevation. The Sizewell A reactor building and the Sizewell B dome can be seen and the southern unit of Sizewell C would be partially visible.

7.4.37. Figure 7.18 shows the proposed development in the coastal landscape, with the turbine halls to the east and the reactor buildings set back to the west. Sizewell B and Sizewell A are located to the east.

Historic environment

7.4.38. The design of the development will consider potential effects on the settings of designated heritage assets along the Suffolk Coast, with the aim of avoiding or minimising any potentially significant effects on settings, wherever practicable.

Ecology

7.4.39. Development of the main power station platform, as currently proposed, would involve the loss (defined as land within the construction sheet pile area) of between 5.04 – 5.55ha of the Sizewell Marshes SSSI, depending on the crossing option selected (refer to SSSI crossing arrangements for further details). This comprises reedbed, wet woodland open water ditches and fen meadow. To provide compensation EDF Energy is developing a habitat creation scheme at Aldhurst Farm, upstream and contiguous with the Sizewell Marshes SSSI. This will provide a series of extensive reedbeds with interconnecting ditch habitat within a surrounding matrix of semi-natural acid grassland/heath. Studies are ongoing to also compensate for the loss of a small area of fen meadow.

7.4.40. There are significant reptile populations including adder, grass snakes, slow worm and common lizard within the main development site, in particular within Goose Hill, on the land north of Sizewell B and, to a lesser extent, within Sizewell Marshes. The arable field margins also support reptiles. Not all species of reptile are present in all habitats. Adder and slow worm prefer the rides within Goose Hill; and grass snakes are likely to prefer the wetter habitats within Sizewell Marshes. To mitigate the loss of these habitats, EDF Energy is setting aside an extensive area of land to provide replacement habitat

suitable for reptiles (refer to **Figure 7.8**). Most of this area consists of former arable land that has been seeded with grassland, although areas of clear-fell are also included within Kenton Hills. In excess of 120ha of replacement habitat is currently under conservation management, to ensure that they are in a suitable condition to receive reptiles translocated from the main development site.

Groundwater

7.4.41. Construction of the main Sizewell C platform and buildings would require deep excavations, below current groundwater levels. To ensure that these excavations take place in dry conditions, a cut-off wall would be constructed to allow water to be pumped out of the site. The potential effects of this cut-off wall and the Sizewell C platform on surrounding land, including the SSSI, is currently being modelled. Initial results indicate that there would be no adverse impact on the hydrology of the SSSI, or other surrounding land. As such there should be no adverse effect on the hydro-ecology of the SSSI. It may also be possible to improve hydrological conditions in some areas through the incorporation of a water control structure on the diverted Sizewell drain. Studies are ongoing to optimise the efficacy of such mitigation.

Surface water

7.4.42. A drainage strategy is being developed, outlining how surface water run-off and foul water would be managed during the operational phase. This strategy will be developed alongside other elements of the design as it evolves, drawing upon relevant hydrological and ecological studies.

7.4.43. During operation, foul water generated on the main development site would be treated on-site and discharged offshore via the cooling water outfall. The level of treatment would be determined based on the assessment of the receiving environment. It is currently anticipated that foul water would undergo secondary treatment to enable discharge into the North Sea.

7.4.44. Surface water run-off would be controlled and routed, via the permanent drainage system, out to sea via the cooling water outfall.

7.4.45. Detail of the Flood Risk Assessment (FRA) process is provided in **Section 12 Related Assessments and Approaches**. Initial modelling indicates that it is likely that there would be no material increase in flood risk as a result of the proposals.

Noise

7.4.46. Operational noise would be low and unlikely to be significantly different from that of Sizewell B.

Air quality

7.4.47. Sizewell C would include emergency diesel generators, to provide auxiliary power to the site in the event that electricity supplies from the national grid are lost. These diesel generators would emit relatively small quantities of nitrogen oxides, sulphur dioxide and carbon monoxide. However, they would only be run for test purposes or in the event of a loss of electricity supplies. No adverse effects are therefore predicted on people or ecological receptors, although modelling studies are ongoing.

b) Key ancillary requirements for the power station

7.4.48. This section describes the key ancillary requirements for the power station, which include cooling water infrastructure, coastal protection and flood defence measures (i.e. sea defences) and access requirements.

i. Cooling water infrastructure

7.4.49. Sizewell C would require the installation of sea water intake and outfall structures on the seabed to ensure the safe and efficient operation of the station. There would be two intake tunnels linking these to the power station, each with two intake heads and a single discharge tunnel with two outfall heads. All of the intake and outfall heads would be situated east of the Sizewell Banks, around 3km (subject to final engineering design) from the shore, at depths of approximately 13-15m below Ordnance Datum. The geographical extent of this infrastructure is shown in **Figure 7.2**.

7.4.50. For a number of reasons, the intakes and outfalls would be located immediately to the east of the sea-bed feature known as the Sizewell Bank. Firstly, there is a need to avoid recirculation of the warmed cooling water effluent back into the intakes of Sizewell B, as this would result in losses to generation efficiency and potential safety issues. Secondly, the offshore discharge location reduces the environmental effect of the plume of heated water from Sizewell C.

7.4.51. One or more fish recovery and return lines would be directionally drilled as separate tunnels in parallel with the route of the cooling water discharge tunnel to around 300m offshore. These would discharge via a small outfall structure.

ii. Environmental considerations for cooling water infrastructure

Coastal processes

7.4.52. The location of the intake and outfall heads 3km offshore would have a negligible, and localised, effect on the shoreline processes. Localised seabed scour (i.e. localised deepening of sea floor, potential change in surface sediments, and thus potential but equally localised habitat change) would be the only likely effects.

Marine water quality

7.4.53. The cooling water system would abstract large quantities of water from the North Sea (around 125 cubic metres per second in total) via the seabed cooling water intake heads. It would be returned via the associated outfall structures some 10 degrees Celsius (°C) warmer. This warmed water would be buoyant and would thus rise quickly to the sea surface from which the excess heat would dissipate to the air above. The discharged water would also contain residuals of both steam circuit conditioning chemicals and the biocide used to prevent biological fouling and blockage of the cooling water circuit. The effects of these chemical and thermal discharges will be assessed. Any release would be subject to controls imposed via an Environmental Permit granted by the Environment Agency.

7.4.54. The Sizewell B cooling water effluent is discharged close to the shore. The Sizewell C cooling water effluent would be discharged some 3km offshore and the resultant plumes would therefore be largely distinct. Given the greater depth of water further from the shore, the Sizewell C plume would have little or no interaction with the seabed or shore.

Marine ecology

7.4.55. The key considerations for marine ecology are the potential effects of localised increased water temperatures on marine life, the potential effects of any discharged chemicals from the power station, especially those concerned with preventing biological fouling, and the potential entrainment and impingement of marine organisms in the cooling water flow.

7.4.56. EDF Energy has been working with the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) to understand the nature of the potential effects of cooling water use at Sizewell and the means of mitigating these effects, where appropriate. The selection of offshore cooling water outfall locations for Sizewell C would greatly reduce potential effects on the local marine ecology compared to alternative locations inshore of the Sizewell

Bank, where a Sizewell C plume would tend to add to and reinforce the presence of the existing Sizewell B plume. Mitigation measures would include a fish deterrence system around the cooling water intakes, which would serve to exclude fish species that are sensitive to sound. A fish recovery and return system would return to the sea the other fish and marine organisms that have been drawn into the cooling water flow and captured on the screens.

iii. Sea defences

7.4.57. New sea defences would be required to safeguard the power station against flooding during periods of storm surges and high waves over its 60-year operational life and during the decommissioning phase. It is proposed that a layer of rock armour would be embedded below the surface within these sea defences to withstand extreme storm conditions.

7.4.58. The proposed permanent sea defence would be in the form of a landscaped primary embankment built seaward of the outer security fence boundary. The baseline crest height of the embankment to protect against wave-overtopping would be 10m AOD. This would provide the required standard of protection prescribed by the ONR. It also accounts for reasonably foreseeable climate change up to 2110 (i.e. approximately the end of the decommissioning). **Figure 7.19** illustrates a plan of the sea defence alignment, together with a series of cross-sections along the foreshore.

7.4.59. Coastal protection elements would also be embedded within the Northern Mound itself, to give the required level of protection against extreme events. Likewise the positioning and design of a permanent Beach Landing Facility (BLF) and its approach road running along the northern flank of the Northern Mound would also reflect long-term coastal protection needs. It is expected that the northern boundary of the main development site would become more maritime over time, as the Minsmere frontage is allowed to retreat in response to natural coastal processes.

Figure 7.19 Proposed sea defence cross-sections

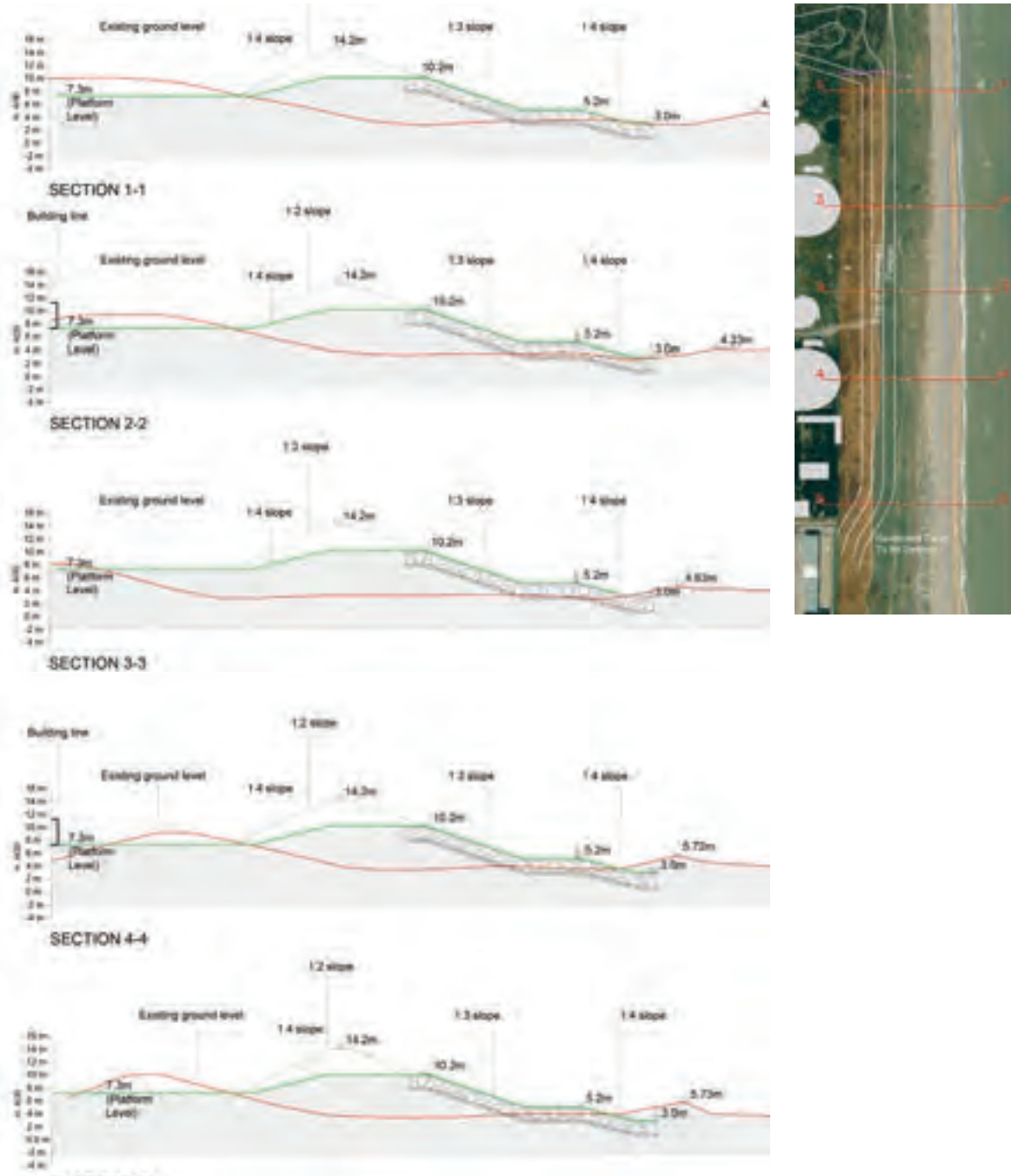
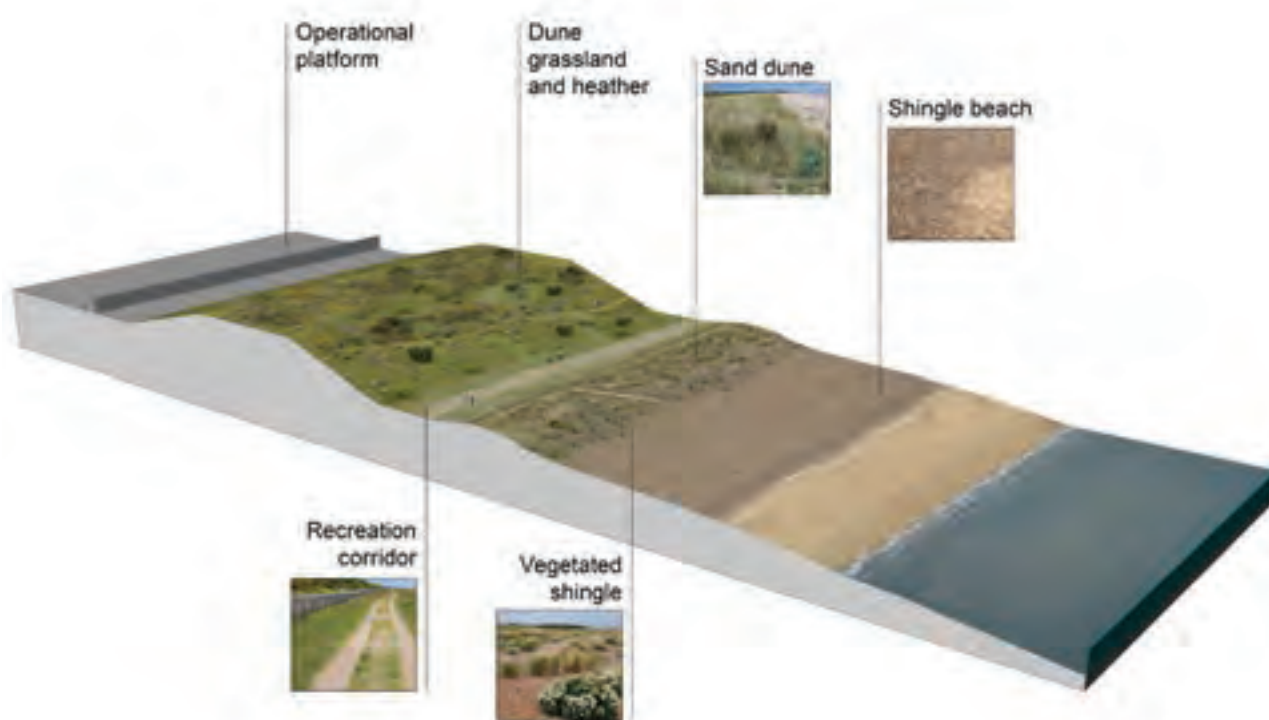


Figure 7.20 Computer generated image of the proposed permanent sea defences



7.4.60. A landscape scheme for the sea defences is being developed, taking into account landscape, biodiversity and recreational considerations. Ecological surveys have shown that the existing vegetation and invertebrate populations within the area are of high value. This will be taken into account in the landscape scheme as far as possible. In order to create a semi-natural and less engineered appearance, the height of the embankment would vary along its length between 10-12m above AOD. The new feature would be similar to the Sizewell B sea defence, which is 10m AOD, although its position would be further to the east. The baseline crest height of 10m AOD has been derived from assessments incorporating climate change extending out to 2110; adaptation has been factored into the design that would allow the crest height to be raised to 14m AOD later in the station's life should the monitoring of trends in sea level rise and nearshore waves suggest that this is necessary.

7.4.61. The existing secondary defence feature, comprising a sacrificial embankment with a crest 5m AOD built in front of Sizewell B and currently extending at a lower elevation along the Sizewell C frontage, would be modified as necessary to align with the new sea defence system.

7.4.62. The existing coastal path would be re-routed at a slightly higher elevation than exists at present. A permissive path would be incorporated into the primary embankment to provide an alternative route for walkers along the foreshore. A computer generated illustration of the proposed sea defences landform and indicative footpath arrangement is shown in **Figure 7.20**. A view looking south along the foreshore from the Northern Mound, showing the new sea defence, is provided in **Figure 7.13**. Interim sea defence arrangements would exist during construction, as described in **Section 7.5**.

iv. Beach Landing Facility

7.4.63. At Stage 1 consultation, it was suggested that some elements of the jetty structure might need to be retained on a permanent basis. It is now considered that a separate BLF would be required to facilitate occasional but essential transport of AILs across the shore during the operational phase. The BLF is proposed to be located to the north-east of the main power station platform. As a working assumption, usage of the BLF could be expected to occur for a few weeks every 5–10 years. EDF Energy is also considering the potential use of the BLF during the construction phase.

7.4.64. The BLF and associated roadway would be designed and positioned in such a way that it would perform a coastal protection function should the shores to the north of Sizewell C retreat significantly over the operational lifetime of the power station. This design intent reflects the difference in local management strategies set by the Shoreline Management Plan (SMP) (Ref. 7.1), with a strategy of ‘hold the line’ being encouraged for the Sizewell frontage and ‘managed retreat’ for the shores immediately to the north. Further design details of the BLF will be developed and consulted upon prior to the submission of an application for development consent.

v. Environmental considerations for the sea defences and Beach Landing Facility

Landscape and visual

7.4.65. Whilst the sea defence would be an engineered structure, it would have a semi-natural appearance to reflect the landform in front of the Sizewell A and B stations. This would include a covering of vegetation that is typical of established coastal dunes and grassland, as far as possible. The BLF is expected to be largely, if not entirely, buried under the beach for the majority of the time; it will be exposed temporarily when a delivery is being made.

Ecology

7.4.66. Construction of the sea defences would require the removal of an area of coastal grassland to seaward of the existing mound in front of the Sizewell C site. This area is a County Wildlife Site and ecological surveys have revealed that the vegetation and invertebrate populations are of high value. A mitigation strategy will be developed for this area, focussing on the re-creation of semi-natural dune and coastal grassland on the new sea defence structures, as far as possible. This will build on the experience from the restoration of the Sizewell B sea frontage.

Amenity and recreation

7.4.67. The Suffolk Coast Path and Sandlings Walk run through the area in which the sea defences would be constructed. These are well used long distance walks and Natural England is proposing to upgrade the status of the Suffolk Coast Path to a National Trail as part of the proposed England Coast Path. A pathway through the sea defences would be provided as part of the detailed landscape scheme. EDF Energy is considering options to minimise the period during the construction phase that would require closure of the path. Refer to **Section 11 Highway Improvements** for further details on the proposals relating to footpaths, bridleways and cycle ways.

Coastal processes

7.4.68. EDF Energy is working with CEFAS and marine engineers to ensure that the BLF would have minimal effects on sediment transport patterns in Sizewell Bay. There is long experience of cross-shore works in this area following the development of Sizewell B. Subsequent studies have served to explain the localised impacts that were observed at that time. That knowledge has led to the development of a number of monitoring tools (e.g. coastal processes radar and the use of remotely piloted aircraft) to enable effects to be identified and, where appropriate, managed in a timely manner.

7.4.69. Whilst the local shoreline maintains its current position the BLF and its associated AIL roadway is anticipated to have no effect on coastal processes. However, should the shoreline to the north retreat the BLF would be designed to begin to act as a foreland, holding the line of the shore at that point and protecting the site behind from erosion.

vi. SSSI crossing arrangements

7.4.70. In response to comments made in relation to the Stage 1 consultation, and a growing understanding of construction programming and sequencing, as well as likely environmental impacts, some important changes have been made to the proposed arrangements for crossing the Sizewell Marshes SSSI.

7.4.71. It is proposed to relocate the crossing points further towards the north-east corner of the main platform, closer to the narrowest point of the SSSI corridor. This will help optimise the layout of the development and reduce land-take from the SSSI. In addition to re-positioning the siting of the SSSI crossing, an appraisal has been undertaken to determine the most appropriate method

for crossing the SSSI land. In broad terms the crossing options fall into two categories a bridge arrangement or a culverted causeway. The following options respond to the requirements of both the construction and operational phases, whilst ensuring that access to the

north-west areas of the main development site is provided as early as possible in the construction phase to take pressure off the main platform area and the existing access via the Sizewell B station. The options being considered by EDF Energy are detailed in **Table 7.2**.

Table 7.2 Options for crossing SSSI land

Option	Characteristics	Description
Option 1: Causeway over culvert (Figure 7.21)	Construction land-take: 10,900m ² Crest width: 42.5m Overall width: to toe of causeway batter: 68.5m	An embankment wide enough for both permanent and temporary road crossings of the SSSI. The initial phase of its construction would involve the establishment of an early lower level causeway, followed by a higher level permanent arrangement.
Option 2: Single span bridge with vertical wing walls (Figure 7.22)	Construction land-take: 8,385m ² Width of temporary and permanent bridges: 35.5m	In this option the bridging arrangements would be as follows: a short-term bridge (STB) (to be used in the early phase of construction) would be erected in the location of the permanent bridge. At the same time a temporary bridge would be erected alongside the STB. Once the construction of the temporary bridge is complete the STB would be dismantled and the permanent bridge (which would also be used during construction) would be erected in its place. On completion of construction the temporary bridge would be removed.
Option 3: Three span bridges (Figure 7.23)	Construction land-take: 7,750m ² Width of temporary and permanent bridges: 35.5m	In this option the bridging arrangements would be as follows: a STB (to be used in the early phase of construction) would be erected in the location of the permanent bridge. At the same time a temporary bridge would be erected alongside the STB. Once the construction of the temporary bridge is complete the STB would be dismantled and the permanent bridge (which would also be used during construction) would be erected in its place. On completion of construction the temporary bridge would be removed.
Option 4 Causeway over culvert with adjacent STB (Figure 7.24)	Construction land-take: 12,900m ² Crest width: 28m Overall width: to toe of causeway batter: 54m	This option is a variant of option 1 but with a narrower causeway of 28m. During construction, the causeway would accommodate both the permanent and temporary crossings, which would be feasible if supplemented by an adjacent STB for preliminary works

Figure 7.21 Option 1: Causeway over culvert



Figure 7.22 Option 2: single span bridge permanent and temporary with vertical wing walls

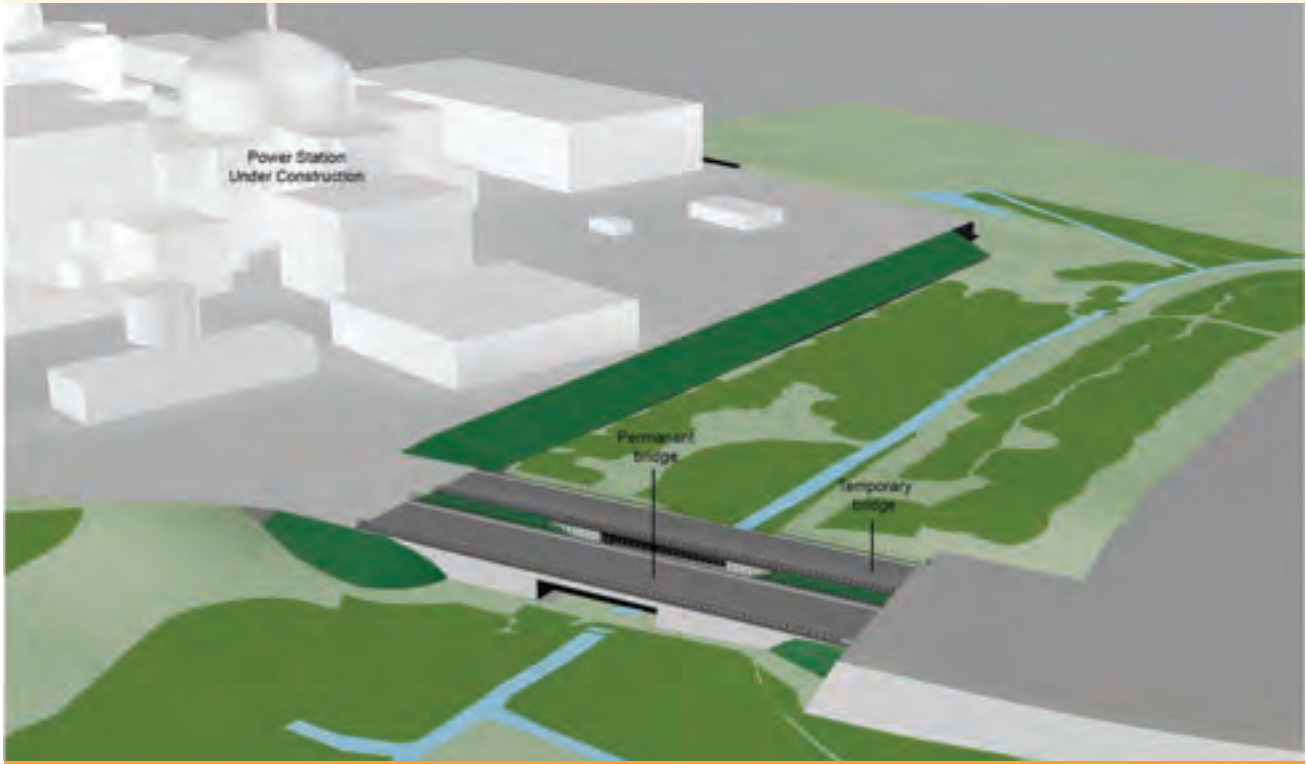


Figure 7.23 Option 3: three span permanent and temporary bridges

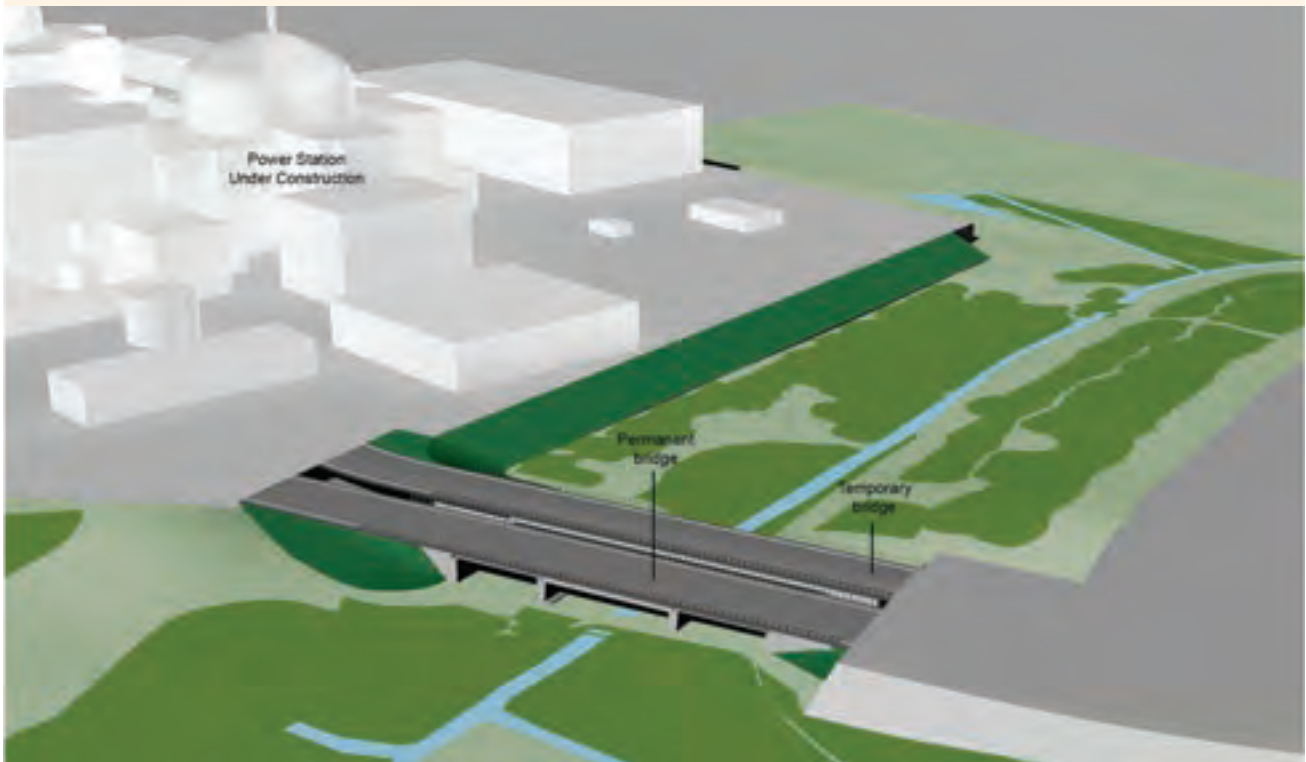
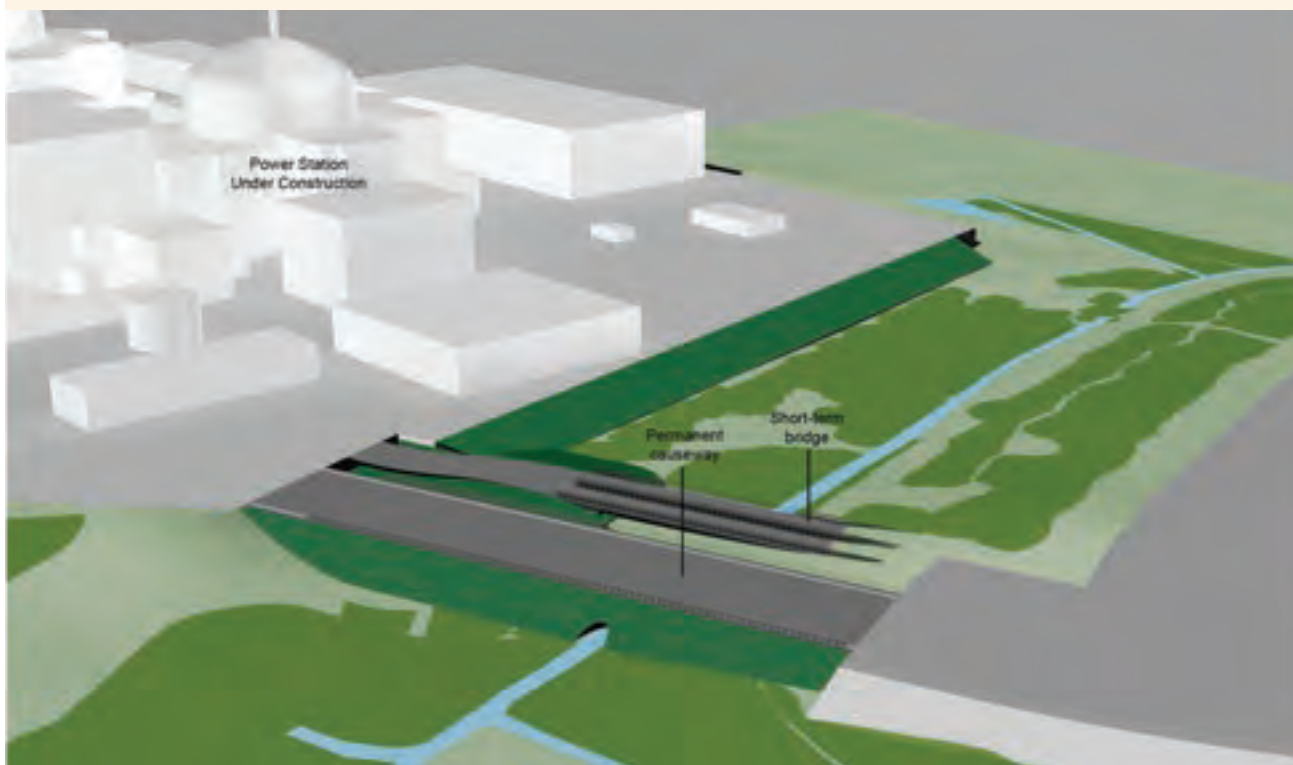


Figure 7.24 Option 4: causeway over culvert with adjacent short-term bridge



vii. Environmental considerations for the SSSI crossing arrangements

7.4.72. Table 7.3 outlines the environmental topics where there would be different environmental effects, and mitigation, between the options for structures crossing the SSSI land.

7.4.73. There are a number of considerations to weigh up in identifying a preferred option. As the crossing is situated mostly in the Sizewell Marshes SSSI, the amount of land-take is an important consideration. The difference in land-take between the options equates to around 0.51ha (in the context of the overall SSSI land-take, the range would be 5.04 (Option 3) to 5.55ha (Option 4)). Assuming Option 1 is taken forward the overall land-take would be 5.35ha.

7.4.74. Option 1 would be more straightforward, as it would involve a single, time-limited, operation in the SSSI. Once constructed the surroundings would be left undisturbed, as there would be no need to remove temporary structures and re-profile land, as would be required for Options 2, 3 and 4. A further consideration is the complexity of construction. Options 2 and 3, and to a lesser extent Option 4, would be more challenging. This accounts for the shorter and simpler

build of Option 1 in comparison with the other options, which is a significant advantage to the project.

7.4.75. In the event that Options 1 or 4 (i.e. designs comprising a culvert) were progressed, they would be designed to minimise adverse effects on geomorphology, flood risk and ecology; including fish, water voles and bats.

7.4.76. Looking towards the operational phase, Option 1 would allow vegetation planting on the slopes and either side of the access road platform. In time this would enable the feature to settle into its surrounds, with maintenance being confined to the culvert. These features would be densely vegetated, helping to create a boundary between the power station and its surroundings. Comparatively, the bridges for Options 2, 3 and 4 would be distinct built elements in the landscape.

7.4.77. The proposed arrangements for protecting the power station against flood risk are considered robust. However, if in the future further adaptation is required, Option 1, and to a lesser extent Option 4, would offer the best scope for adaptation, without further land-take from designated ecological sites. The bridge options would not offer such scope for adaptation.

Table 7.3 Preliminary environmental information for SSSI crossing options

Topic	Analysis
Terrestrial ecology and ornithology	<p>Option 1 This option would result in the second most land-take from the SSSI of the four options. There is the potential for this to be a partial barrier to movement of water voles, but there are large resilient populations either side. It is unlikely to be a barrier to fish or otter with appropriate mitigation. It is likely to provide a functional corridor for bats, subject to the design of the culvert.</p>
	<p>Option 2 This option would result in some land take from the SSSI. It is potentially more permeable to water voles than Option 1, but is still likely to be a partial barrier. It is unlikely to be a barrier to fish or otter. It may not provide a functional corridor for bats due to potential disturbance from lighting and noise.</p>
	<p>Option 3 This option would result in the least land take from the SSSI. It would have the same effects as Option 2.</p>
	<p>Option 4 This option would result in the greatest land take from the SSSI, to accommodate STB outwith the slopes of the causeway. It would have the same effects as Option 1.</p>
Landscape and visual:	<p>Option 1 There is an opportunity to plant the sides and crest of causeway either side of the road with grassland, scrub and potentially trees which would help integrate the crossing into the surrounding landscape.</p>
	<p>Option 2 Whilst the bridge structures would be expected to be shielded from long-distance views, the bridges would be visible in local views from the surrounding footpath network with little opportunity for direct landscaping and integration.</p>
	<p>Option 3 Same comments as those for Option 2.</p>
	<p>Option 4 Same comments as those for Option 1.</p>
Groundwater and surface water	<p>Option 1 There would be a localised, but very limited, increase in groundwater levels in the immediate vicinity of the crossing. Surface water run-off and associated contaminants could increase from hard surfaces. However, this would be mitigated via appropriate drainage. Culverts could impact upon surface water flows, flood risk and geomorphology. However, these impacts would be mitigated by appropriate design of the culverts.</p>
	<p>Option 2 Surface water run-off and associated contaminants could increase from hard surfaces. However, this would be mitigated via appropriate drainage..</p>
	<p>Option 3 Same comments as those for Option 2.</p>
	<p>Option 4 Same comments as those for Option 1.</p>

7.4.78. Having regard to the information available at this stage, EDF Energy's view is that Option 1 is preferred, given its speed and ease of construction, taking into account its potential environmental impacts, both negative and positive. This includes consideration of the slightly greater land-take from Sizewell Marshes SSSI compared to some other options, noting that in EDF Energy's view the affected habitats would be compensated for at the

Aldhurst farm Habitat Creation Scheme. In addition, Option 1 would have the most adaptive capability.

viii. Access road and operations car park

7.4.79. The Sizewell C masterplan (refer to **Figure 7.7**) illustrates the route of the proposed new access road from the B1122 to Sizewell C. The access road would be built early in the construction phase. Following construction, the road would be modified to serve as the main operational access road.

7.4.80. There is a regulatory requirement for two separate accesses to the power station. The existing Sizewell power station complex access road is not considered adequate as the primary operational access to Sizewell C, due to its routing past Sizewell B and the lack of space for car parking adjacent to the southern entrance to Sizewell C. The secondary access would be provided by the existing Sizewell power station complex access road.

7.4.81. The access would include:

- a new roundabout with the B1122, which would be implemented at the start of the construction phase. There are two options proposed for the roundabout, arising because of the two layout options for the accommodation campus (refer to **Figures 7.40** and **7.41**), with the key difference being the number of arms off the roundabout;
- an operational staff and outage car park located at the eastern end of the road; and
- a vehicle search area facility and other ancillary buildings located adjacent to the access road.

7.4.82. The proposed staff car park located to the north-west of the main power station platform (refer to **Figure 7.7**) would be designed to accommodate up to 1,200 spaces divided between permanent parking spaces for day-to-day operation (700) and spaces required during outage periods (500). The associated facilities would comprise ancillary buildings, including a Vehicle Search Area and Entry Relay Store. In addition, there is the potential for some training facilities to be located in the vicinity of the car park. This element is currently under consideration; any additional facility would be incorporated into the masterplan presented at the next stage of consultation.

7.4.83. A permanent two lane access road is proposed, with a segregated route for cyclists and pedestrians. The road width would be reduced following construction and designed to create a corridor similar in character to a country lane, while maintaining safe access to Sizewell C. The new access road is proposed to be a private thoroughfare for Sizewell C operations which should

assist with maintaining its rural character. Apart from the junction with the B1122, and the operational car park and associated facilities, the new access road would not be lit.

7.4.84. A lighting scheme will be developed to provide a safe working environment, targeting lighting to where it is required (i.e. avoiding upwards lighting and limiting light spill to neighbouring areas), avoiding over illumination, minimising energy consumption, and minimising disruption to bat corridors and other species. A scheme would include the following features:

- low-level lighting within the security fence area of the power station site, to allow for safe operation and maintenance;
- task lighting in the foreshore area when the BLF is being used;
- low-level safety lighting in the car park area and vehicle access facilities; and
- apart from the junction with the B1122 and the aforementioned car park area, the new access road would not be lit.

ix. Environmental considerations for the access road and operations car park

Amenity, recreation and landscape

7.4.85. The access road would be crossed by recreational links. The design of these crossings and integration within the landscape will be established in subsequent design stages. **Figure 7.25** illustrates some typical design concepts for the road.

Historic environment

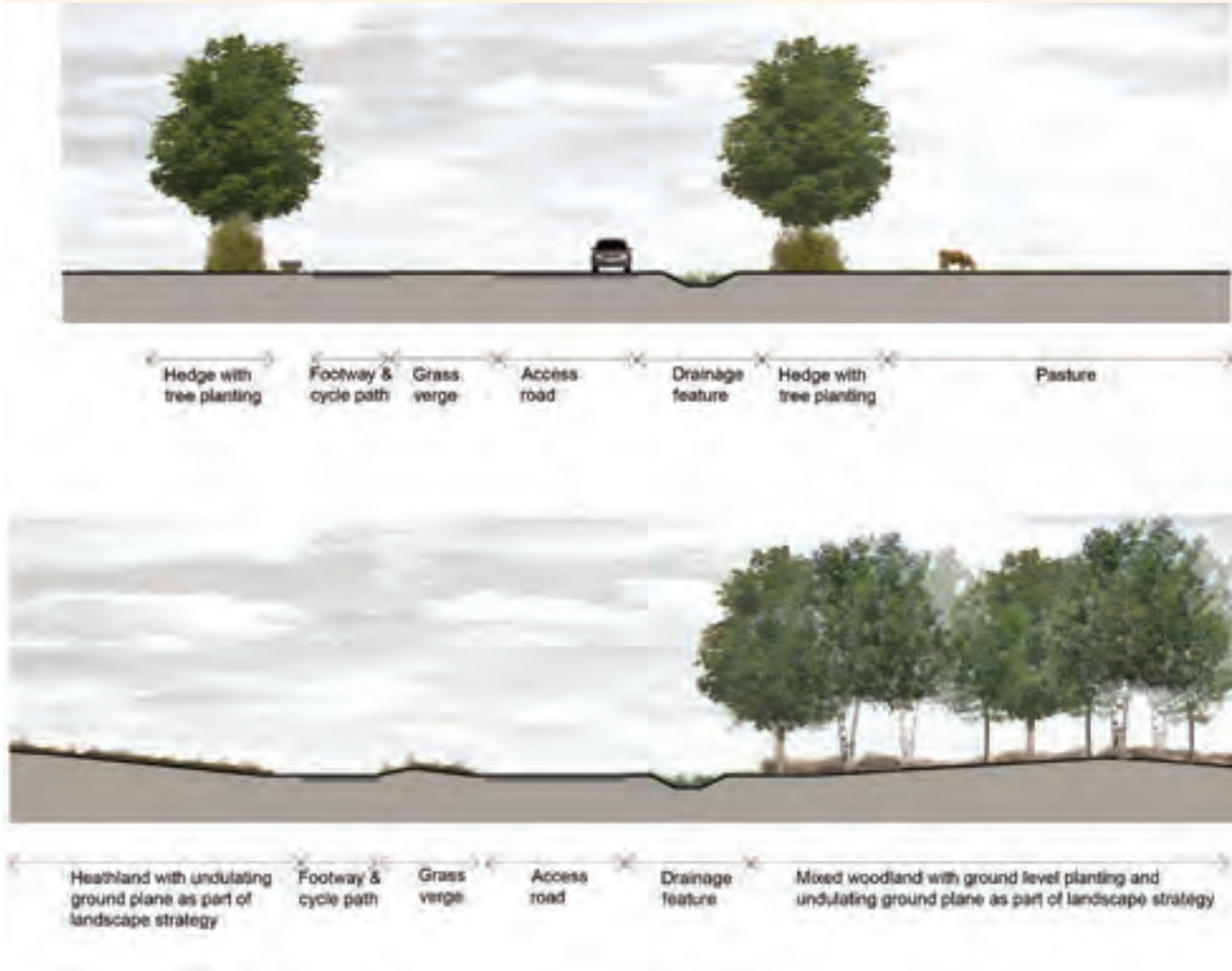
7.4.86. The setting of the second Leiston Abbey site, including the Abbey ruins, is potentially sensitive to the proposed access arrangements. EDF Energy will work with stakeholders, including Historic England, to seek to minimise any impact through careful landscaping and lighting of the junction, whilst ensuring that road safety standards are met.

7.4.87. The operational lighting scheme will be developed and consulted upon prior to submission of an application for development consent.

Landscape, recreation and amenity

7.4.88. The operational car park would be designed to reflect the character of its landscape setting, whilst

Figure 7.25 Indicative illustration of a section of road corridor showing tree hedgerows and pasture defining the road corridor



reducing, and where necessary mitigating, visual effects on local views. Early design considerations for the car park area include provision for:

- establishing a hierarchy of spaces, defined by a simple palette of hard and soft materials to reflect the intensity of use;
- using trees, swales and low mounds to provide the outer secure perimeter, avoiding elements such as high fencing and barriers. Low mounds, ditches and a ha-ha (i.e. a hidden ditch) could be incorporated with tree planting to act as vehicle barriers and for managing surface water run-off;
- using mixed woodland and retained plantation to provide effective screening and containment of the road corridor and parking areas;
- retaining broadleaved planting, to provide a buffer between the car park and the Sizewell Marshes SSSI; and
- using the existing woodland to provide a screening function and to inform the character of other elements, such as security features and planting within the car park.

x. Sizewell power station complex visitor centre

7.4.89. A visitor centre for Sizewell C was proposed as part of the Stage 1 consultation. This provision was generally supported by respondents to that consultation. It was acknowledged that the visitor centre could be used to showcase the contribution of Sizewell C to carbon reduction, its role as part of the Suffolk Energy Coast, and its location in an AONB.

7.4.90. EDF Energy consulted on three potential sites for a new Sizewell visitor centre in the Stage 1 consultation, namely Option 1: Lover's Lane; Option 2: Sizewell Beach; and Option 3: Goose Hill. Respondents to Stage 1 consultation expressed concern about the potential landscape and visual impacts of siting a new visitor centre off Lover's Lane (Option 1) in a relatively open and elevated area of the AONB. The potential impact of a new visitor centre on Sizewell village (Option 2) was also a concern; and local residents questioned the adequacy of the road to accommodate an increase in traffic associated with the operation of a visitor centre. The Goose Hill site (Option 3) was seen as a more appropriate location, with its main advantage being its proximity to the new power station and to the new access road/car park.

7.4.91. Further consideration is being given to the location and design of a visitor centre for the Sizewell power station complex. Refer to **Section 4 Project Overview** for details.

xi. Helipad

7.4.92. At Stage 1 consultation a helipad was proposed near to the Sizewell C operational car park in the north-west area. This facility is now proposed to be located in the southern part of EDF Energy's Estate in the Sizewell Gap area. Siting and design details will be consulted on prior to the submission of an application for development consent.

7.5. Construction phase

a) Introduction

7.5.1. EDF Energy has significant experience in constructing nuclear power stations, most recently at Flamanville 3 in Normandy (France) and Taishan (China), together with learning from similar projects at Olkiluoto 3 (Finland) and Hinkley Point C (UK, Somerset). This experience, together with the lessons learned from Sizewell B, is informing the evolution of the proposals for the construction phase of its Sizewell C Project.

7.5.2. The subsequent sub-sections detail: construction phasing; siting consideration; and construction land uses and environmental considerations.

b) Phasing

7.5.3. Construction of the power station would take between 7-9 years, with an expected difference of 12 months between the construction of Units 1 and 2. Construction is anticipated to be undertaken in five main phases, with some phases overlapping as work on different phases would be undertaken simultaneously in different areas across the main development site. Whilst the programme is subject to ongoing development, broadly the following activities are expected to occur in the following phases:

i. Phase 1 – Site establishment

- translocation of protected species from the main development site;
- archaeological mitigation (e.g. set-piece excavation);
- diversion of Public Rights of Way and permissive paths;
- establishment of the site access off the B1122;
- site clearance of the areas for: the main power station platform area, contractors' compound areas, spoil management zones, site entrance hub, the accommodation campus, the area to the east of the Eastlands Industrial Estate;
- installation of fencing and security facilities;
- erection of site offices and welfare facilities, the site entry plaza and associated car and lorry parking areas;
- installation of temporary site utilities (e.g. surface water and foul drainage, electricity distribution and communications infrastructure);

- creation of access roads, haul roads and the crossing of the Sizewell Marshes SSSI corridor;
- construction of marine delivery facilities;
- installation of temporary construction discharge route and associated marine outfall;
- diversion of the Sizewell drain in the Sizewell Marshes SSSI to enable development of the north-western corner of the existing SSSI area;
- construction of the concrete cut-off wall, followed by dewatering of the main power station platform;
- excavation of the existing Bent Hills along the foreshore and the creation of construction phase sea defences;
- excavation of the borrow pit areas and stockpiling of suitable materials for later re-use on-site;
- preparation of temporary site infrastructure (e.g. construction of concrete batching plants, prefabrication facilities and contractors' site facilities); and
- construction of the direct rail connection to the main development site from the Leiston Branch Line plus works to upgrade existing rail infrastructure, or use of land to the east of the Eastlands Industrial Estate for an alternative rail extension.

ii. Phase 2 – Main site earthworks

- removal of made ground and other suitable materials for stockpiling within the main power station platform area;
- excavation of peat and clay materials within the cut-off wall for deposition in the borrow pit area;
- excavation of weathered crag materials to create a formation suitable for construction;
- bulk backfill to underside of foundation levels of main buildings with suitable fill materials; and
- continuing archaeological mitigation, including excavation of the peat.

iii. Phase 3 – Main civils

- construction of the foundations for the main operational buildings;
- construction of cooling water intake and outfall tunnels, drilling of vertical shafts and installation of seabed intake and outfall structures;
- construction of the galleries which connect the various buildings below final ground level;
- construction of the cooling water structures and main pumphouse;
- construction of a fish recovery and return discharge route and associated seabed outfall structures;
- installation of secondary backfill around structures and galleries to progressively raise the level of the site to final platform level;
- construction of main building structures; and
- completion of the permanent sea defences.

iv. Phase 4 – Mechanical and engineering installation, instrumentation and commissioning

- completion of offshore cooling water works;
- completion of the Unit 1 and 2 buildings;
- installation of mechanical and electrical equipment in Units 1 and 2; and
- ongoing construction of the National Grid 400kV sub-station.

v. Phase 5 – Commissioning and land restoration

- construction completion checks;
- flushing and testing of fluid systems;
- combined systems testing;
- fuel receipt and loading;
- final functional testing;
- reactor criticality and power raising;
- full-power proving runs;

- removal of temporary marine facilities;
- removal of rail infrastructure;
- removal of the accommodation campus and site clearance;
- clearance of the contractors' areas and removal of temporary services;
- internal fit-out of the spent fuel store; and
- final landscaping of the temporary construction areas and wider Estate.

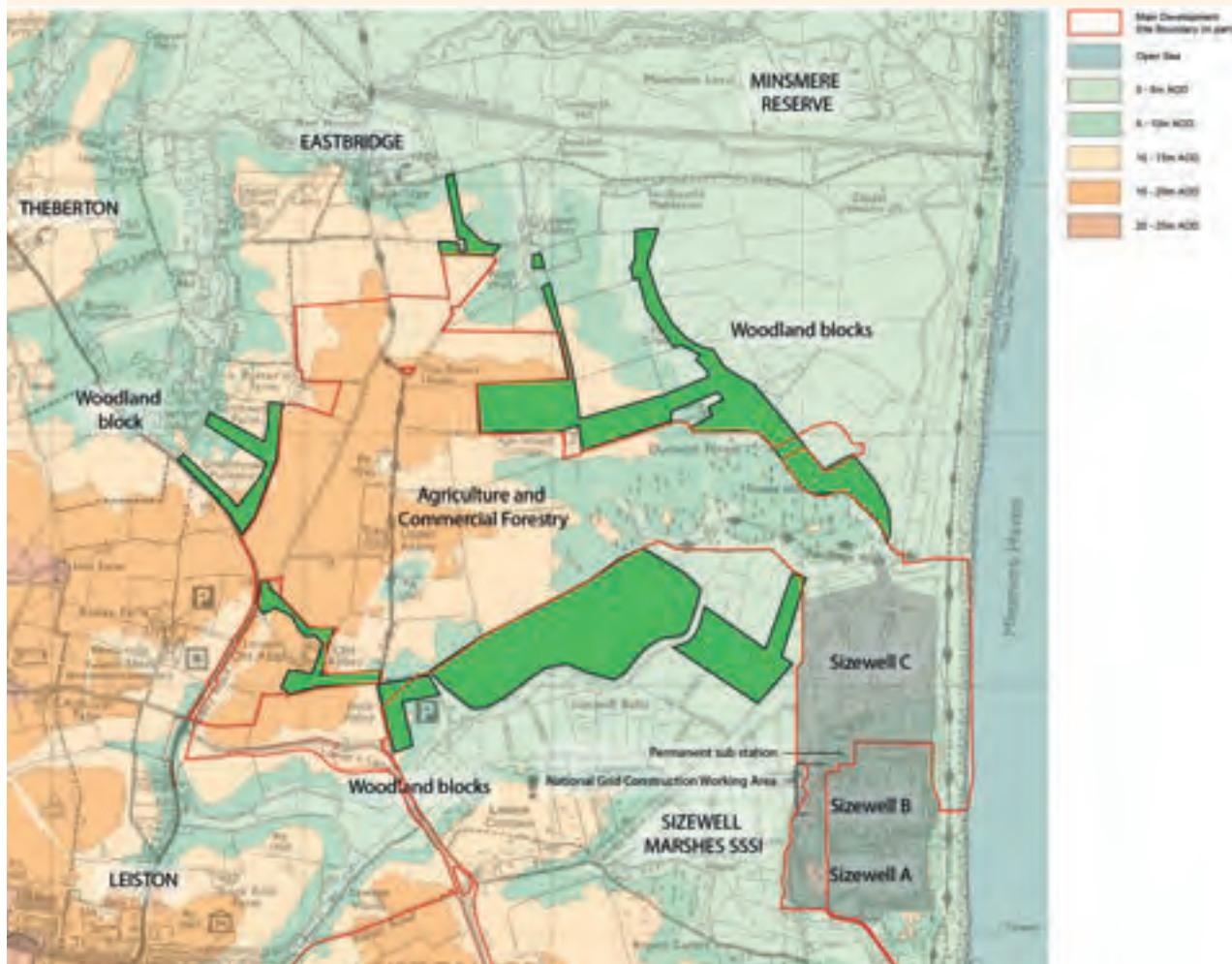
c) Siting considerations

7.5.4. The siting of the construction land uses and infrastructure has been driven by the need to strike a balance between project efficiency and programme with the recognition of the sensitive nature of the main development site and its surrounds, much of which lies within the AONB and close to important ecological receptors. This has led to the identification of the following siting considerations (in no particular order):

- to locate construction activities with the potential to cause disturbance away from where people live, as far as possible;
- to minimise land-take from within Sizewell Marshes SSSI;
- to avoid the most sensitive landscapes within the AONB;
- to limit disturbance to deciduous woodlands, significant hedgerows and tree belts;
- to avoid the non-essential use of land along the foreshore (i.e. in front of the Sizewell C) that forms part of the AONB and Suffolk Heritage Coast;
- to be as close as possible to the main platform, to reduce the logistical challenges of moving workers and construction materials, storing and backfilling spoil material and supporting construction activity;
- to locate construction areas near to the proposed new access road;
- to use flat and well-drained land to avoid substantial re-grading;
- to limit disturbance of retained and newly created habitats;
- to give consideration to the potential for disturbance to European designated habitats, especially the Minsmere to Walberswick SPA, SAC and Ramsar to the north of the site, and the Outer Thames Estuary SPA to the east, where cooling water infrastructure is proposed to be located;
- where practicable, to maintain access to recreation and amenity areas including public and permissive rights of way; and
- to have regard to the setting of key heritage assets.

7.5.5. Figure 7.26 identifies the main construction area, in the context of local topography and existing woodland blocks. The majority of the construction area is at a lower elevation than the adjacent land to the west and north. This assists in providing some natural screening from the more sensitive areas further north, including the Minsmere Nature Reserve. The exception to this general arrangement is the location of the borrow pit fields in the north-west area. The construction footprint is also located away from settlements in the vicinity including Eastbridge and Theberton.

Figure 7.26 Construction siting considerations



d) Description of construction land use and environmental considerations

7.5.6. Given the scale of the Project, a substantial volume of materials, machinery and other specialist equipment would need to be brought to, stored at, processed and removed from the site during the construction phase. This phase, therefore, requires careful planning, including the identification of dedicated construction areas and specific activities that would take place within those locations. This section provides a description of those areas and activities, and how these have been informed by environmental considerations.

7.5.7. As illustrated in the construction masterplan (refer to **Figure 7.27**), the construction site would comprise the following components, which are described in further detail in subsequent paragraphs:

- the main power station platform;
- foreshore works, including sea defences and marine delivery infrastructure;
- marine facilities;
- common user facilities, including concrete production and prefabrication facilities;
- contractors' compound;
- spoil management (including borrow pits);
- site access and entrance hub, with related facilities including parking, security, induction and temporary offices;
- rail access;
- an accommodation campus;

Figure 7.27 Construction Masterplan





LEGEND

- Main Development Site Boundary
- Main Land Uses**
 - Main Power Station Platform
 - Contractors' Compound and Common User Facilities
 - Permanent Sub station
 - Sub station Construction Working Area
 - Spoil Management - Stockpile Areas and Borrow Pit Field Options shown
 - Accommodation Campus - Option 1 shown
 - Site Entrance Hub
 - Water Management Zone
- Site Infrastructure**
 - Access Road
 - Haul Road
 - Green Rail Route
 - Potential Rail Extension
 - Diverted section of Eastbridge Road associated with Campus Option 1
- Other Land Uses**
 - Buffer Zones and landscaping
 - Supplementary planting
 - Early planting
 - Existing Principal Woodland Areas (to be retained)

- Sizewell Halt;
- land east of the Eastlands Industrial Estate; and
- site-wide infrastructure, including: drainage, lighting, internal roads and environmental boundary treatment.

7.5.8. The construction masterplan shows a land-take of approximately 300ha, as detailed in **Table 7.4**. In practice actual land-take would be less, as this includes land for all of the options presented (including four fields identified as having potential to be used for the borrow pits).

Table 7.4 Indicative land-take of individual construction activities / elements

Use	Approximate site area (ha) (rounded to the nearest ha)
Main power station platform	50
Substation works area (National Grid compound)	2
Foreshore works	5
Common user facilities	16
Contractors' compound	32
Spoil management area (including all four option fields)	59
Site access & entrance hub	19
Rail (green rail route, east of the B1122)	8
Accommodation campus	24
Sizewell Halt	3
Land east of the Eastlands Industrial Estate	30
Site-wide infrastructure (including drainage and water management zones, internal roads and boundary treatment)	62

e) Main power station platform

7.5.9. Figure 7.28 illustrates the main power station platform, which comprises land for the permanent development and an area along the eastern edge required for temporary sea defences. This area is bounded by Sizewell B to the south, the Northern Mound and Sizewell Marshes SSSI to the north and west and the foreshore to the east.

7.5.10. To establish the boundary of the power station platform it would be necessary to develop on a small part of Sizewell Marshes SSSI. This would entail:

- the installation of a barrier between the retained SSSI area and the site, which is likely to be constructed of steel sheet piling; and
 - ground treatment and land raising within those areas removed from the SSSI.
- the diversion of the Sizewell Drain within the Sizewell Marshes SSSI area to maintain the drainage of water to the north;

Figure 7.28 Main power station platform



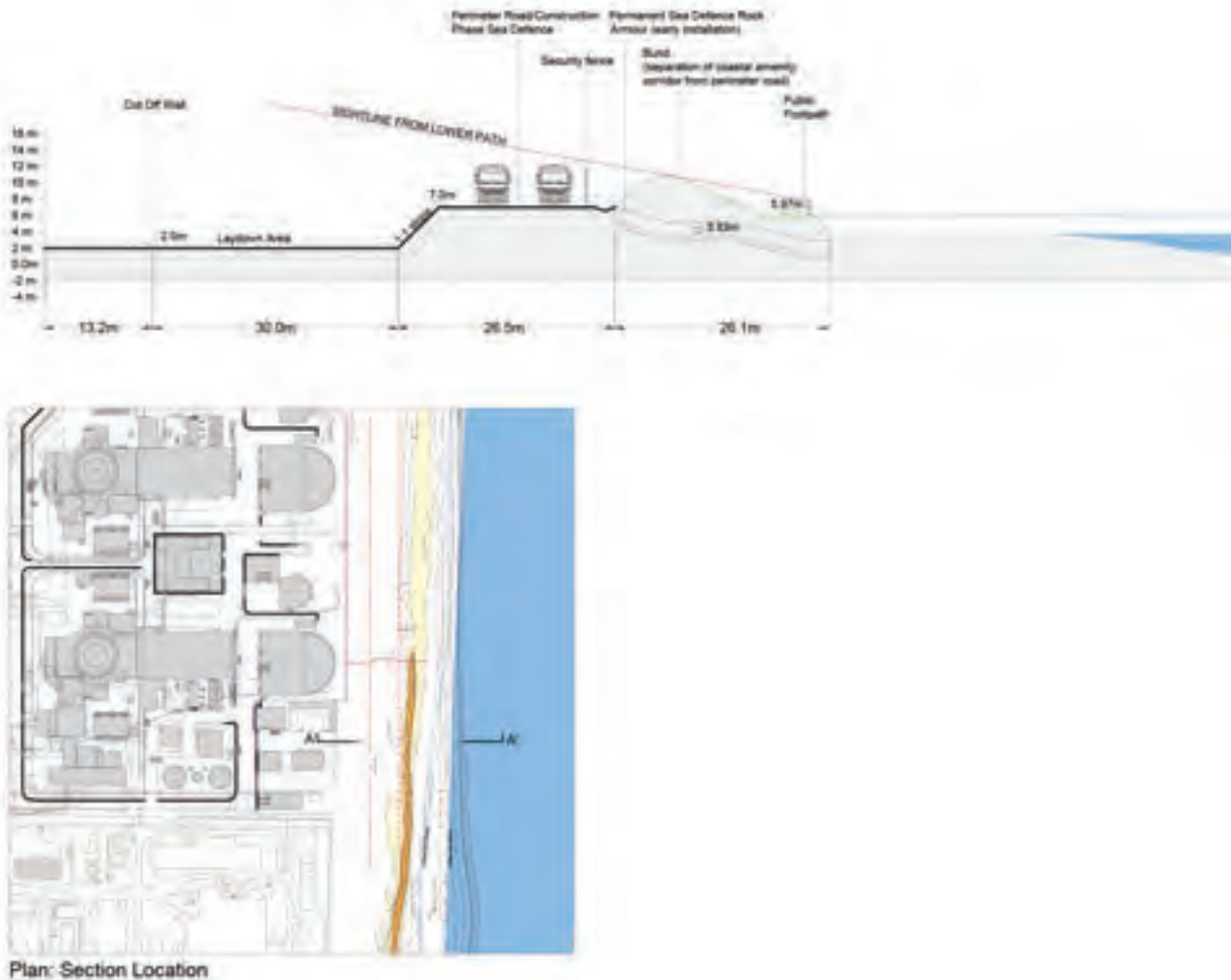
7.5.11. Once the boundary of the power station platform has been established and the site levelled it would be necessary to construct a cut-off wall to isolate the main excavation from the surrounding hydrological environment. In turn, this would require the provision of a perimeter access corridor to support this activity, including the movement of construction vehicles, pedestrians and the loading/unloading of construction materials via cranes and trucks. On the eastern side of the platform the access corridor would form part of the initial sea defences, to maximise usable space. **Figure 7.29** represents an indicative cross-section of the eastern boundary of the platform area.

7.5.12. On completion of the cut-off wall, the contained area would be dewatered and the ground excavated to

a level sufficient to remove all the unsuitable material and then built back up using suitable fill to form the foundations of the power station. As the buildings are constructed, the surrounding excavation would be backfilled until a level is reached just below the final ground level. The final surfacing would be undertaken at the end of construction as part of the landscaping scheme.

7.5.13. The power station buildings fall into two main categories: the nuclear safety structures and the conventional structures. The nuclear safety structures would be constructed from reinforced concrete comprising sand, aggregate and cement which would be mixed on-site using batching plants, sited within the common user facilities area (refer to **Figure 7.33**).

Figure 7.29 Cross-section arrangement on eastern boundary of power station platform



7.5.14. The conventional buildings would comprise a combination of reinforced concrete and steel-framed structures. The concrete buildings would be constructed using similar methods to the nuclear buildings. The steel-framed buildings would be erected using pre-fabricated steel sections lifted into place using mobile cranes. Most of the steel sections would be fabricated within the common user facilities area, before being bolted or welded together in-situ. However, some pre-fabrication may be carried out on the main power station platform.

7.5.15. During the construction of the power station buildings, the platform area would be characterised by cranes rising above the building structures. Typical heights for the cranes would be around 100-120m.

7.5.16. The construction of a new National Grid 400kV sub-station to the south-west of the main power station platform, along with the local diversion of existing overhead lines, would be required by National Grid to facilitate connections to the national transmission network. Temporary working areas would be provided for the duration of construction works by National Grid. These areas are identified on the construction masterplan (refer to **Figure 7.27**).

i. Environmental considerations of main power station platform construction

Groundwater and surface water

7.5.17. The Sizewell Marshes SSSI is a wetland habitat and potentially vulnerable to changes in groundwater levels or saline intrusion. Dewatering and the installation of a cut-off wall would be required so that excavations can be undertaken in dry conditions. The cut-off wall would minimise groundwater drawdown occurring within the SSSI. However, it could itself potentially lead to raising groundwater levels up gradient, immediately outside of the cut-off wall. There is an observed continuity between groundwater levels within the peat and the surface water drainage system. Therefore, any impact on groundwater could result in an impact on surface water.

7.5.18. The surface water system may also be impacted by increased surface water run-off as a result of an increase in impermeable and semi-permeable areas. To mitigate, a site-wide drainage strategy is being developed that would control the volume and quality of surface water run-off.

7.5.19. An assessment is being carried out to consider the potential effects of the development on both groundwater and surface water levels, flows and quality and consequential effects on the hydro-ecology of Sizewell Marshes SSSI and the designated sites to the north. Preliminary indications are that with appropriate mitigation, relating primarily to the design of the diverted Sizewell drain, there should be no adverse effects on hydro-ecology. Indeed, it may be possible to enhance hydro-ecological conditions in some areas.

Terrestrial historic environment

7.5.20. The deposits which underlie the main platform area have been identified as having archaeological potential. These comprise Holocene (the period from the end of the last Ice Age to the present day) wetland deposits, laid down by a number of former river channels. These include thick sequences of peat, which has high potential for the preservation of organic remains not normally remaining on drier archaeological sites.

7.5.21. Studies, including a review of existing datasets, a resistivity tomography study and deposit modelling have focused on identifying areas of highest potential for human activity within the peat. An archaeological excavation strategy to target these key locations has been devised and incorporated into the programme for on-site excavations, installation of the cut-off wall

and dewatering of the main development site.

f) Foreshore works

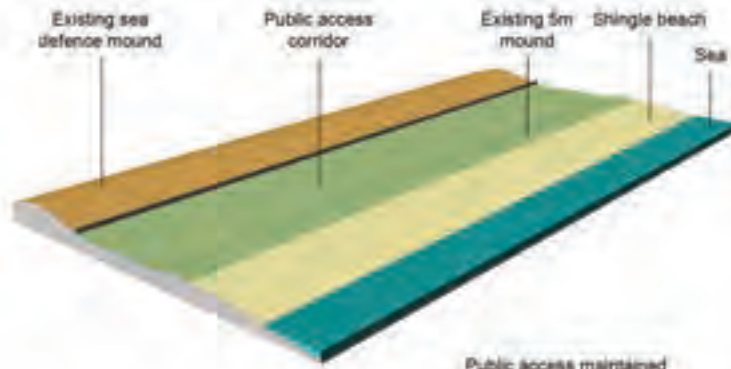
7.5.22. In the early stages of the construction phase, a corridor to the east of the power station platform area, bounded by the temporary sea defences/perimeter access corridor, is proposed for the construction of the eastern part of the permanent sea defences. Work would involve the installation of rock armour and, where necessary, modification to the existing 5m AOD bund which already extends along the site frontage. This would be followed by the implementation of a landscape scheme, involving the placement and shaping of suitable material over the rock armour for vegetation planting.

7.5.23. In the later stages of the construction phase the western part of permanent sea defences would be constructed. This would involve the removal of the temporary sea defences/radial access corridor and installation of rock armour, to the final level of 10m AOD. Similar to the early permanent sea defence works, this would be followed by the implementation of a landscape scheme in the same manner as described above.

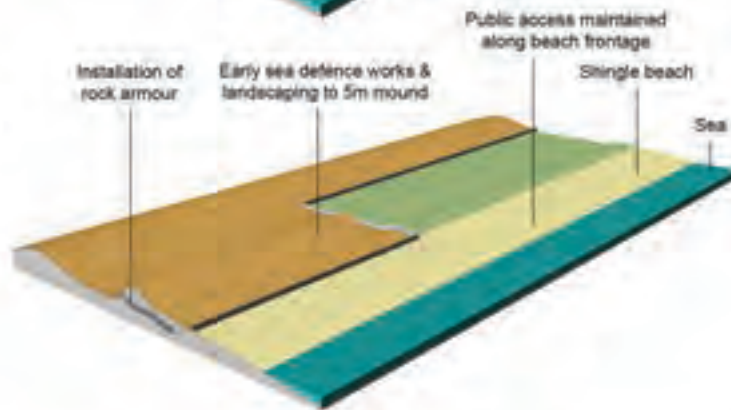
7.5.24. The sequencing of work in the foreshore area includes proposals for diverting the Suffolk Coast Path. In the early phase, while the eastern part of the permanent sea defence works are undertaken, the path would be re-routed further east. Following completion of the works the path would be moved back inland along the line of the reconstructed sea defences immediately to the east of the temporary construction mound. Refer to **Figure 7.30** which illustrates the conceptual sequence of foreshore works during construction.

Figure 7.30 Conceptual sequence of foreshore works during construction

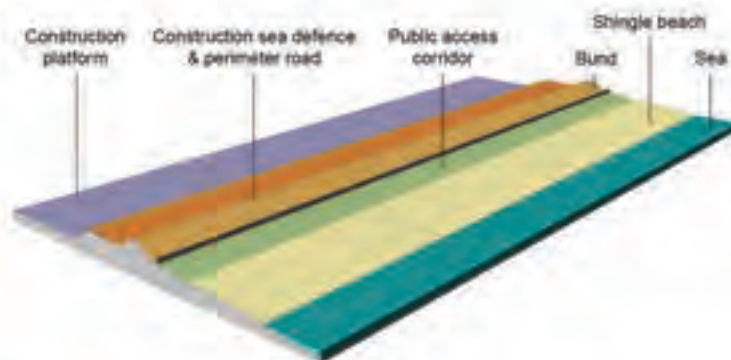
1. Existing beach frontage arrangement



2. Early construction: Eastward permanent sea defence works (completed in sections)



3. Main construction phase arrangement



g) Marine facilities

7.5.25. Work is ongoing to determine the optimum balance between the use of rail and marine infrastructure to deliver materials to the main development site, as described in **Section 6 Transport**. The following marine infrastructure options are being considered as detailed below.

i. Option 1 – wide jetty

7.5.26. In the marine maximum scenario, a jetty would be required to enable the delivery of bulk materials, containerised goods and AILs by sea during the construction phase. If necessary, the jetty would be designed to enable the off-site export of materials. The jetty would be removed at the end of the construction phase.

7.5.27. The jetty (refer to **Figure 7.31**) would need to be approximately 800m in length. It would incorporate two berths on the north side to accommodate vessels for the import of bulk materials (and potential export of excavated material) and one berth on the south side to accommodate AIL deliveries via lift-on, lift-off or roll-on, roll-off vessels.

Figure 7.31 Temporary wide jetty – indicative plan



7.5.28. The jetty would utilise an open piled support structure to help reduce the effects on coastal process and local hydrodynamics. The height of the jetty would be set to tie into the construction phase sea defences at 7m AOD. The jetty design would enable the Suffolk Coast Path to remain open whilst operational, although some temporary closures would be necessary to protect public safety during its construction.

7.5.29. The engineering design of the jetty would aim to limit effects in the coastal zone during the period that the jetty is in place, whilst providing the structural strength

required to deliver the heavy loads from vessel to shore. The following design features would be required to achieve this:

- an open pile structure to permit tidal flows and limit disruption to sediment transport;
- deep-water berthing at a sufficient distance from shore to facilitate navigation and minimise the need to dredge a navigation channel. By berthing offshore the need to dredge is minimised, the dredge volume (if dredging is required) is minimised and the potential to impact the shoreline and sediment supply is significantly reduced; and
- the draft of vessels would be constrained to further avoid the need to dredge.

ii. Option 2 – narrow jetty

7.5.30. Should the rail maximum scenario be adopted, the requirement for marine deliveries would be limited to AILs only. In this scenario, a narrower jetty could provide the required capability. As is the case with the wide jetty, the narrow jetty would be removed at the end of the construction phase.

7.5.31. The narrow jetty option (refer to **Figure 7.32**) would also utilise an open piled support structure to reduce effects on coastal process and hydrodynamics. The narrow jetty structure would have a reduced width as there would not be any conveyors and the jetty head structure would be simplified. This would further reduce the potential for effects on coastal processes and hydrodynamics in comparison to Option 1.

Figure 7.32 Temporary narrow jetty – indicative plan



iii. Option 3 – Beach landing facility (use during construction)

7.5.32. A BLF is required for the operational phase (refer to **Section 7.4**). EDF Energy is considering whether such a facility could also be used to support the construction phase to deliver AILs. An indicative location for the facility is shown in **Figure 7.32**.

iv. Environmental considerations of foreshore works

Amenity and recreation

7.5.33. EDF Energy intends to keep the Suffolk Coast Path open for the majority of the construction phase. However, there would be temporary periods when the path would need to be closed to enable essential works associated with the jetty (irrespective of which option is selected) and BLF. Provision would be made for an alternative, off-road route, inland of the power station, for use in such events. Refer to **Section 11 Highway Improvements** for details of the diversion.

7.5.34. Construction of the foreshore works would involve the removal of the existing dune habitat over the length of the Sizewell C frontage. This area is currently designated as a County Wildlife Site. Once the works to the foreshore are complete, the habitat would be restored on the surface of the foreshore works, in a similar manner to the dune frontage at Sizewell B.

Landscape and Visual

7.5.35. There would be short-term effects to the landscape and seascape during construction of the foreshore works. The sequencing of works envisaged on the foreshore presents an opportunity to carry out early restoration of the landform and dune habitat, which would then be able to be re-established early in the construction programme.

Coastal Geomorphology and Hydrodynamics

7.5.36. No effect on coastal processes is expected in carrying out the sea defence works. The only likely exception would be if heavy seas were to coincide locally with a storm surge event, which could result in significant erosion along this frontage. Appropriate contingency planning arrangements would be developed in advance of these works, including appropriate monitoring and mitigation measures.

7.5.37. A jetty structure would be relatively permeable, constructed with piles, to limit effects on both the local

hydrodynamic (tidal flow) regime and the processes of sediment transport. Tidal flows would be expected to result in down-cutting of the seabed sediment around the piles along the full length of the jetty. This scour in the immediate vicinity of such a structure is predictable and would be taken into account at the detailed engineering design stage. The environmental consequence of this scour would be a limited area of habitat alteration associated with the footprint of the jetty itself. Dredging for any berthing area, at the head of the jetty or on its flanks, would similarly result in limited areas of habitat alteration.

7.5.38. The primary means of sediment transport in the immediate nearshore area is waves. A structure such as a piled jetty can modify the local wave regime, particularly by creating lengths of shore sheltered from their influence. Where this occurs the rates of sediment movement along the shore are slowed and this can result in erosion developing due to failure of sediment supply. The likelihood of this effect becoming significant depends both on the length and width of the jetty and the wave regime over the period of its use. However, irrespective of the jetty design selected, the countermeasures would be the same - appropriate contingency plans based on monitoring of local shore profiles and the alignment of the nearshore bars.

7.5.39. If a BLF were used during the construction phase a navigational channel may need to be dredged from seaward. Any dredged material would, subject to the Marine Management Organisation (MMO) approval, be retained within the local sediment transport system. These dredging and disposal activities would also be subject to appropriate monitoring and contingency arrangements.

Marine Water and Sediment Quality

7.5.40. Dredging, dredge disposal and, to a lesser extent, piling tends to release fine sediments into the water column. This is then dispersed by the effects of wave and tide. Given the high levels of turbidity normally experienced in the Sizewell area, any sediment plumes associated with jetty or BLF construction and use would be unlikely to have any more than a very limited effect on water quality. The quality of the marine sediments local to the site, and thus the materials that might be disturbed, is subject to assessment. Any dredging, disposal and piling activities would be subject to the MMO approval.

Marine Ecology and Fisheries

7.5.41. Dredging associated with navigational access would disturb existing seabed habitat over both the immediate footprint of these works and in any areas

where the dredged materials would be put. Given the nature of the sediments involved and their associated fauna, the impacts associated with this disturbance are expected to be small and to recovery quickly.

7.5.42. Cetaceans and fish species sensitive to underwater noise are found in the area. To mitigate the potential effects on such species, construction of the marine works would use appropriate piling techniques to limit underwater noise.

7.5.43. The extent of commercial fishing local to the Sizewell site is known. This would be taken into account as these works develop, with appropriate mitigation measures being employed.

h) Cooling Water Infrastructure

7.5.44. The marine elements of the power station cooling water structures would comprise two intake tunnels, each with two intake heads, and a single discharge tunnel with two outfall heads. All of the intake and outfall heads would be situated seaward of the Sizewell Bank, around 3km from the station.

7.5.45. The cooling water tunnels would be bored from deep onshore excavations within the main development site area and extend at a depth of some 20-30m under the seabed towards offshore to the location of the seabed intake and outfall heads, at some 13-15m below AOD. The tunnels would be linked to these intake and outfall heads by vertical shafts drilled from above. The tunnels would be lined with pre-cast concrete sections as they are bored.

7.5.46. The intake and outfall structures would be pre-fabricated off-site and floated into position and lowered onto the connecting shafts.

7.5.47. In addition, one or more dedicated discharge routes associated with a fish recovery and return system would be installed. These would involve a directionally drilled pipe introduced from onshore under the seabed and small seabed outfall structures located approximately 300m from the shore.

i. Environmental considerations of the cooling water infrastructure

Coastal geomorphology and hydrodynamics

7.5.48. The key considerations for the construction and maintenance of the marine works are the potential to affect longshore and nearshore sediment transport and any consequential effects on local shorelines. The bulk of sediment transport along this coast is wave-driven

movement in the nearshore, particularly that associated with a series of nearshore, shore parallel, sand bars. Both engineering structures and dredging would potentially affect sediment movement in these areas. A policy would be maintained, with approval of the MMO, whereby sediment volumes would be conserved within the appropriate sediment transport systems. This scheme would be directed by monitoring findings and appropriate management arrangements for the movement of materials. Construction of the cooling water systems would involve boring tunnels beneath the seabed from landward, using tunnel boring machines, rather than the dredged cut and fill approach used for the construction of Sizewell B. This construction methodology is not considered to have any effect on coastal processes. Any effect on marine sediments and their transport would be localised to the area of vertical shaft drilling and intake and outfall headworks placement seaward of the Sizewell Bank. The outfall headworks, being deliberately positioned seaward of the outermost sand bar, would not be expected to have any more than a highly localised effect in terms of seabed scour.

7.5.49. The effluent lines for both the temporary construction discharge and the operational fish recovery and return discharges would be introduced by directional drill from landward, each terminating in a small outfall headworks structure on the seabed some 300m offshore. The directional drill would have no effect on coastal processes.

7.5.50. A range of effluents would be discharged to the sea via the temporary construction discharge. These would include surface water, secondary treated sewage effluent and early commissioning effluents. The outfall would be positioned some 300m offshore to avoid any significant effects on the shore itself. The placing of the outfall structure on the seabed would be subject to the MMO approval. The quality of the effluent would, at all times, be subject to conditions imposed by the Environment Agency.

Marine Ecology and Fisheries

7.5.51. Construction of the offshore marine works would involve localised alterations in seabed habitat. The effects would be small and minimised by the use of boring tunnels rather than the use of cut and fill (dredging) techniques.

Navigation

7.5.52. The construction of the cooling water infrastructure could affect the safe navigation of commercial shipping and recreational craft. A Preliminary Hazard Assessment and a Navigation Risk Assessment will be developed and

will inform the plan to manage the navigation hazards.

Marine historic environment

7.5.53. A desk-based assessment has concluded that there is a medium to high potential for submerged archaeological remains below the mean high water mark. There are also a number of known wreck sites in the vicinity, although none within the footprint of any of the proposed offshore developments. Subsequent vibrocore assessment has also indicated that there are deposits of geoarchaeological interest offshore.

Appropriate mitigation protocols would be developed for any impacts arising during the construction phase.

i) Common user facilities

7.5.54. Common user facilities (as illustrated in **Figure 7.33** and defined in **Table 7.5**) are those elements which need to be close to the power station platform. These include concrete production and the prefabrication of essential components too large to be delivered from remote locations, such as the reactor dome liners.

Figure 7.33 Common user facilities



Table 7.5 Land requirements for common user facilities

Common user facilities	Area required (ha) (rounded to nearest ha)
Concrete Production	
-3 Batching plants – structural concrete	4
-2 Batching plants – roller compacted concrete	
Railway Siding (Aggregates & other materials for concrete production)	1
Pre-cast concrete production facility	1
Reinforcement & formwork fabrication facility	4
Dome/liner fabrication area	3
Access & storage areas	4
TOTAL	17

j) Contractors' compound

7.5.55. Land is required to accommodate the range of contractors needed to build the new power station (as illustrated in **Figure 7.34**). To maximise

logistical efficiency, the compound areas are to be located as near to the main power station platform and the common user facilities area as possible.

Figure 7.34 Contractors' compound areas



7.5.56. The compound areas would first be levelled using engineered backfill and secured by appropriate boundary fencing, followed by the installation of roads and service infrastructure. The areas would provide space for a range of critical activities, and each would include office, welfare facilities, and service connections for water,

electricity, drainage and telecommunications. The location and height of the buildings and structures would vary across the site and throughout the construction phase.

7.5.57. Table 7.6 seeks to identify the type of uses and amount of land required.

Table 7.6 Seeks to identify the type of uses and amount of land required.

Land requirements for contractors' compound components	Area required (ha)
Fencing and Access	
Permanent Fence	0.4
Access Roads and Networks	0.5
Civil Works	
Cooling system	0.4
Main Civil Works	8.2
Electrical Infrastructure	
General Electrical Facilities	0.9
Power Transmission	3.2
Main Construction	
Turbine Hall	2.1
Heating, Ventilation and Air Conditioning	1.2
Steam supply system	3.4
Ancillary Buildings (around the 'nuclear island')	0.9
Security Doors	0.5
Safety Chilled Water System	0.5
Auxiliary Boilers	0.5
Balance of Nuclear Island (Mechanical)	2.3
Balance of Plant	0.9
EDF Energy Project-wide Compound (in excess of 50 potential contracts)	2.8
Project-wide Construction Support	
Scaffold Contractor	0.5
Fuel Farm	0.1

Table 7.6 Seeks to identify the type of uses and amount of land required.

Land requirements for contractors' compound components	Area required (ha)
Waste Water Treatment Works	0.8
Temporary Power Supply (CES Substation)	0.3
Materials Testing Laboratory	1.0
Waste Contractor	0.1
TOTAL	31.5

i. Environmental considerations for the contractors' compound and common user facilities

Terrestrial ecology

7.5.58. The contractors' compound and common user facilities area would occupy land which is currently mainly in agricultural or forestry use. These areas support some notable fauna of high conservation value, including reptiles and bats.

7.5.59. The approach to the contractors' compound has been informed by the application of the ecological mitigation hierarchy. Firstly, potential effects on habitats and species have been avoided, wherever possible, by locating compounds within areas of lower ecological value. Where this has not been possible, species translocations will be carried out, as appropriate, in advance of site clearance activities.

7.5.60. In addition, consideration has been given to potential disturbance effects on retained habitats and species through the inclusion of ecological buffers and measures to minimise the potential effects of construction noise, lighting and drainage.

Landscape and visual

7.5.61. The contractors' compound and common user facilities lie entirely within the AONB. Landscape considerations used to inform the balance to be struck between the construction and operational requirements and minimising effects on the landscape. In large part this has been achieved by utilising the natural landform in which the compounds are surrounded, for example the wooded ridges which limit long distance views of the compounds (refer to **Figure 7.26**). Retention of existing mature screening and the planting of new woodland features would help to mitigate the impact on long distance views within the AONB.

Terrestrial historic environment

7.5.62. Desk-based assessment, geophysical survey and LiDAR survey indicate there is potential for buried archaeology to be present across the main development site. Trial trenching will be undertaken to determine the presence or absence of archaeology and to characterise any remains found. If buried archaeology is present, a suitable mitigation strategy will be agreed with SCC, which is most likely to comprise preservation by record.

7.5.63. An alternative approach would be adopted for wooded areas where it is not possible to carry out pre-application trial trenching. This will be agreed with SCC and would likely comprise a site walkover following the cutting of trees to ground level, including a metal detector survey and a topographical survey to record any extant earthworks.

Noise

7.5.64. During the construction phase, noise would arise from earthworks and construction of contractors' areas and facilities. Therefore, principal noise sources would be due to earthmoving and surfacing and construction of buildings, arising from excavators, bulldozers, cranes, steel erection and asphaltting plant. Once the compounds are operating the principal noise sources would be from steel fabrication, vehicle movements and deliveries, and the operation of the concrete batching plant.

7.5.65. Further modelling analysis will be undertaken of the different activities across the main development site and over the different phases of work. This will inform a greater understanding of the potential impacts to nearby residential and ecological receptors and inform the need for any further mitigation measures.

Air quality

7.5.66. The activities to be undertaken within the contractors' compound, including soil stripping and site levelling works, and the construction activities themselves, have the potential to generate emissions to air through wind-blown dust and on-site plant exhaust emissions. The control of construction dust would be achieved with the adoption of good working practices and other measures, to mitigate any impacts to humans and ecological receptors.

Groundwater and surface water

7.5.67. The contractors' compound and common user facilities area would feature areas of hardstanding and ground of reduced permeability. This would have the potential to alter surface water run-off patterns and reduce groundwater recharge. A Drainage Strategy incorporating a series of Water Management Zones (WMZs) would be deployed to attenuate and, if required, treat surface water run-off prior to it being infiltrated back into the groundwater system or discharged to local watercourses at greenfield run-off rates.

k) Spoil management

i. Overview

7.5.68. The construction of Sizewell C requires deep excavations on the main platform as well as the raising of land levels, to achieve the permanent platform height. This would generate significant quantities of excavated spoil, as well as a need to import backfill material. This would all require stockpiling at various periods over the construction phase. A range of bulk materials would, therefore, require management on-site, including:

- those that can be used for construction and/or backfill, such as locally excavated crag material, suitable materials excavated from borrow pits and existing made ground;
- materials that are not suitable for construction or backfill but suitable for landscaping;
- excavated materials that are not suitable for construction, engineered backfill or landscaping, principally peat and 'peaty clay' material; and
- material that needs to be imported, including backfill material and other aggregates that cannot be sourced on-site.

7.5.69. Overall, a significant quantity of material requires management, with a potential peak quantity in the order of 4 million m³.

ii. Management of unsuitable material

7.5.70. EDF Energy is giving particular consideration to the appropriate strategy for dealing with the peat and 'peaty clay' material arising from excavations within the power station cut-off wall, which cannot be re-used for construction. The quantity of this material amounts to around 1 million m³. The objective is to reach a sustainable, efficient and cost-effective solution. At present, there are two potential options under consideration:

- placement of the material in an on-site borrow pit(s); or
- shipment of the material to the RSPB Wallasea Island Wild Coast Project in Essex, where material would be used to contribute to the ongoing habitat creation scheme.

7.5.71. The borrow pit option would involve excavation of an area of land comprising approximately 15ha. The arisings would provide a source of material for a number of uses including backfill for the main power station structures. In doing so, this would reduce the need for aggregate to be delivered from off-site locations. The borrow pit would then be reinstated by filling the void with peat and clay excavated from within the main site, avoiding the need to export this material off-site.

7.5.72. Use of material on-site utilising borrow pits is EDF Energy's preferred option because it would help balance the earthworks and would represent the most sustainable, efficient and cost-effective option. Preliminary environmental studies have been carried out to investigate potential impacts on groundwater and surface water resources and the potential for release of ground gas. These studies have indicated that the borrow pits can be developed safely, with no impact on water resources. These conclusions would apply equally to all borrow pit locations.

7.5.73. Material would be managed locally and kept on-site near to the point of excavation, allowing greater control over the rate and timing of excavation works. As the Wallasea option would require movement of material over greater distances by sea, the rate of excavation would be affected by adverse weather or plant disruption. Any delay requiring temporary stockpiling on-site would necessitate provision of an engineered storage area to contain the material. This would take time to prepare and use up valuable construction space. There is also a risk of acidic leachate pollution from oxidised peat if kept in open conditions. Prompt handling of this material through the borrow pit option would minimise the potential for such oxidisation.

iii. Spoil management: sequencing

7.5.74. Figures 7.35-7.37 illustrate the sequencing of spoil management activity across the site:

- Stage 1 (**Figure 7.35**) would comprise excavation material from the borrow pit(s) and stockpiling for backfill purposes on the main power station platform. If the material is deemed unsuitable, it would be used to form construction platforms and environmental boundary treatment, as appropriate.
- Stage 2 (**Figure 7.36**) would involve the material being excavated from the main power station platform; with peat or clay-based soils used to backfill the borrow pits, while material suitable for reuse would be stockpiled.
- Stage 3 (**Figure 7.37**) would involve material being moved to the platform area from the stockpile for back filling purposes.

7.5.75. Any surplus of material at the end of the construction phase would be utilised in the landform associated with the final landscape restoration scheme.

Figure 7.35 Stage 1 spoil management

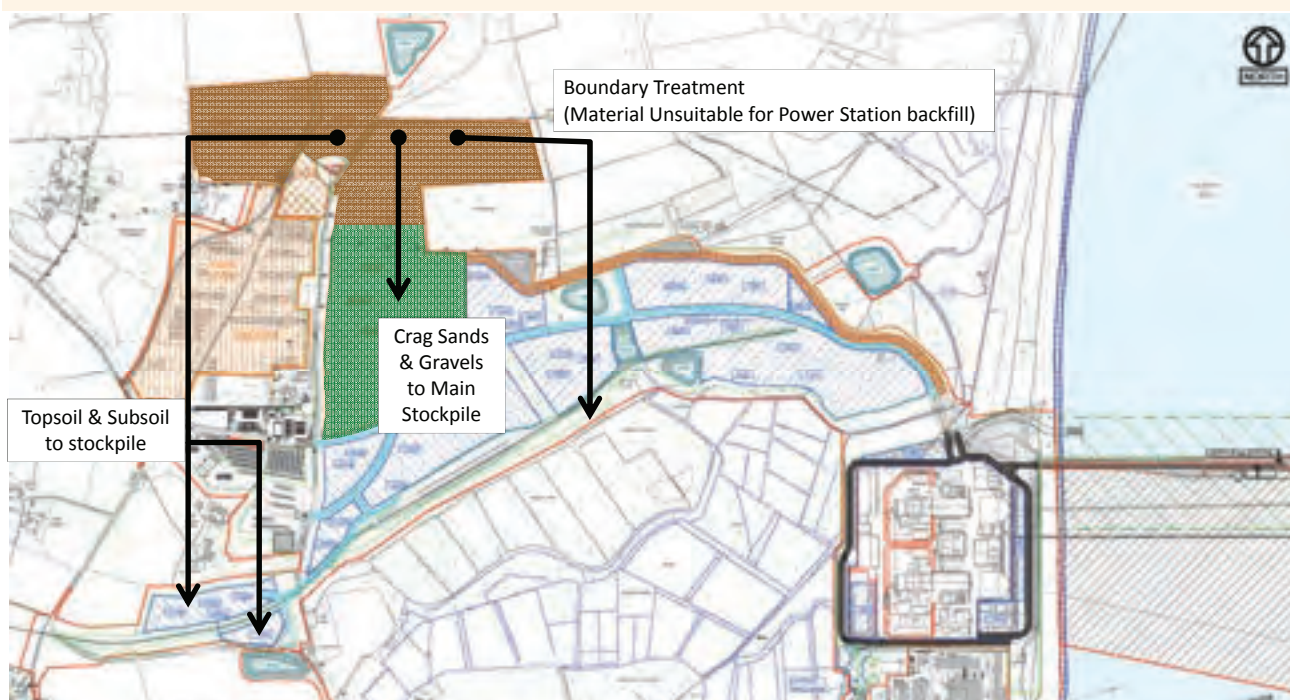


Figure 7.36 Stage 2 spoil management

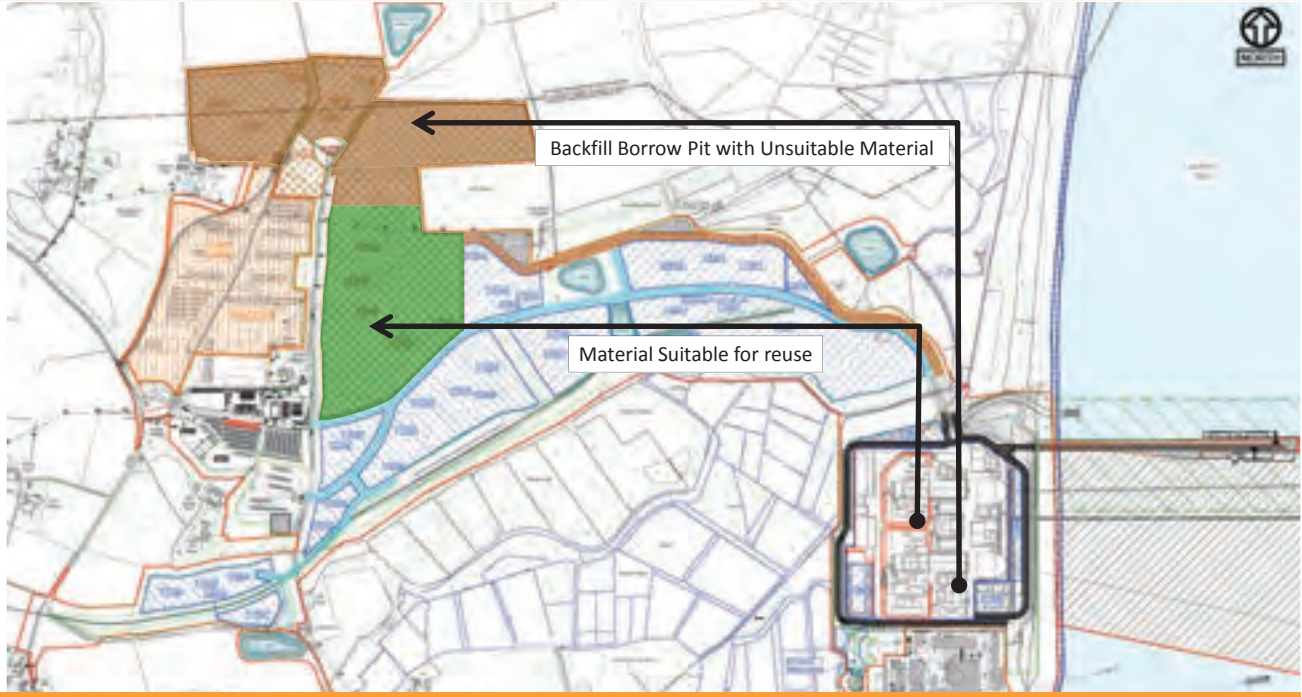
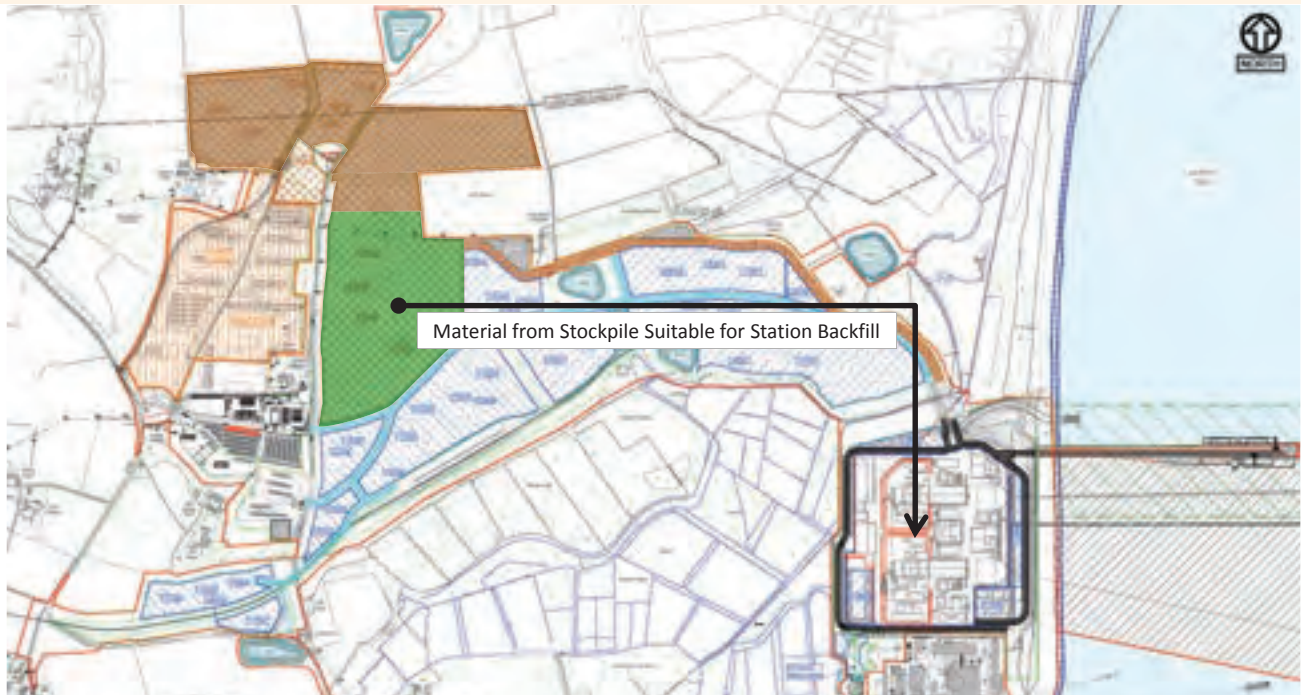


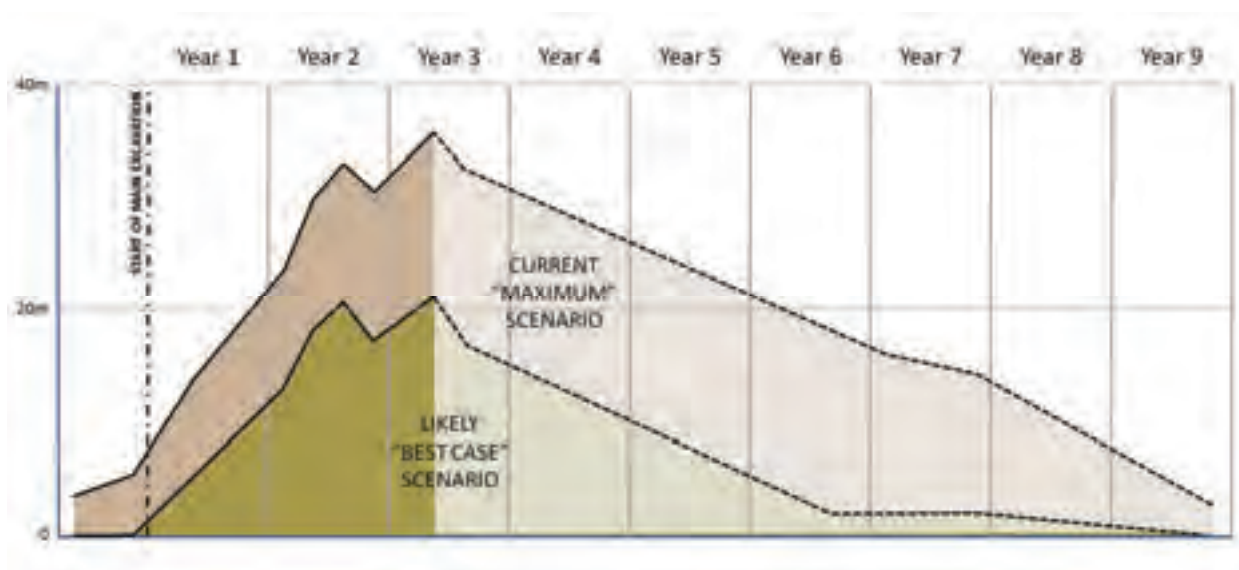
Figure 7.37 Stage 3 spoil management



7.5.76. The physical characteristics of the stockpile areas would vary over time, but in general terms the height of the stockpile would rise during the early years of construction as spoil is excavated and stored. It would reduce in height in the later years of construction, as material is utilised mainly for backfill purposes. The profile of the stockpile would be influenced by a range of factors, including assumed rates of excavation, the potential for re-use of suitable materials, the sourcing of aggregates,

the final balance of import and export of materials and whether any material is placed on top of the borrow pit areas for storage purposes. A preliminary assessment has been made of the potential scenarios for the height of the stockpile throughout the construction phase (refer to **Figure 7.38**). Whilst the current maximum height scenario indicates a peak of about 35m, in the likely best case this would be nearer to 20m above ground level. The peak height is unlikely to last for more than a year.

Figure 7.38 Indicative stockpile heights during construction



iv. Borrow pit location

7.5.77. **Figure 7.39** identifies those areas with the potential to be used, including the two fields east and west of the road to Eastbridge and the two fields north and west of Ash Wood. Some 15ha of land is estimated to be required, out of a total of 40ha comprising the four fields. The areas would be selected having regard to technical and environmental considerations, as well as feedback to this consultation. Due to the size of the fields, all of which are under 15ha, and the practicalities of the borrow pit operation, it is likely the combination of fields would be Fields 1 and 2; Fields 2 and 3; or Fields 3 and 4.

Figure 7.39 Spoil management areas



7.5.78. Considerations given to the selection of fields have included:

- access to Field 1 would involve crossing Eastbridge Road;
- Fields 1 and 2 are nearer to Eastbridge than Fields 3 and 4;
- Fields 3 and 4 are located within the AONB, whilst Fields 1 and 2 are outside the designation;
- use of Field 4 would result in less land being available for spoil storage; and
- Field 3 (identified for non-specific construction use) was objected to by the local authorities in their response to the Stage 1 consultation.

7.5.79. There are also different options regarding the duration of borrow pit land usage, including the timing of restoration relative to the construction process:

- Early restoration: excavation of material, deposition of unsuitable material, capping at grade (or slightly higher to allow for settlement) and final restoration. This approach would result in the borrow pit area being restored back to either heathland or farmland, depending on the location, on early timescales.
- Later restoration: excavation of material, deposition of unsuitable material and temporary storage of spoil to a height of around 3m for subsequent use. This approach would result in the borrow pit land being in operation at such times as the spoil can be used and would result in a marginal decrease in the height of the stockpile by the order of 2/3m.

7.5.80. As a principle the early restoration strategy is preferred, as this will reduce the amount of land required for the development during the majority of the construction phase. However, this approach would be likely to be more appropriate for Fields 1, 2 and 3 than Field 4, as the latter is alongside the stockpile area and could be readily used for storage purposes.

v Environmental considerations of spoil management areas

Groundwater and surface water

7.5.81. Preliminary groundwater modelling studies have indicated that none of the borrow pit locations would pollute groundwater or surface water resources.

Terrestrial Ecology

7.5.82. Field 3 is close to land which may be required to mitigate potential effects on marsh harriers from the nearby Minsmere-Walberswick Heaths and Marshes SPA. It may, therefore, be necessary to ensure that the design of any borrow pit utilising this field has regard to minimising noise and visual disturbance on this land.

Noise

7.5.83. Irrespective of which fields were selected, noise would arise from the use of excavators, bulldozers and vibratory compactors. Further modelling analysis will be undertaken of the different activities across the main development site and over the different phases of work, to understand the potential impacts to nearby residential and ecological receptors and inform the need for any mitigation measures.

Air Quality

7.5.84. Similarly, irrespective of which fields were selected, dust would arise from earth moving and stockpiling. Dust levels would be controlled and monitored at locations in close proximity to the site boundary. A dust monitoring and management plan would be developed and implemented. Stockpile management techniques would also be employed to minimise disturbance to the stockpile surface after emplacement, which would minimise the potential for windblown dust generation. Measures may include use of dust suppression spraying and use of wetting/binding agents as appropriate.

Landscape and visual and recreation and amenity

7.5.85. The environmental considerations that would influence the selection process include landscape and visual and recreation and amenity considerations, as described in **Table 7.7**.

Table 7.7 Preliminary environmental information for the borrow pit locations

Topic	Options	Analysis
Landscape and visual	Fields 1 and 2	<p>Field 1 lies outside but immediately adjacent to the AONB, within a Special Landscape Area. Field 2 lies within the AONB. Field 1 is the most visually exposed of the borrow pit options, visible in views from the north including from the public right of way (PRoW) south of Eastbridge (connecting Eastbridge Road to Potter's Street). There are occasional gaps in the hedgerow along Eastbridge Road which would allow for intermittent views of the borrow pit field from the road. There are also residential properties (Potter's Farm and Eastbridge Farm) in close proximity to Field 1 which have the potential for direct views of the borrow pit.</p> <p>Field 2 is visible through gaps in the hedgerow along Eastbridge Road, but wider visibility is limited by intervening vegetation. The PRoW north of Field 2 and east of Eastbridge (leading to Minsmere sluice) is located on lower ground and separated by three intervening field boundaries. The PRoW is enclosed by dense vegetation as it approaches the outskirts of Eastbridge, with limited/no views of Field 2. Longer distance views of Field 2 from the north are intercepted by blocks of trees at the Minsmere Cut and Black Walks.</p>
	Fields 3 and 4	<p>Fields 3 and 4 lie within the AONB.</p> <p>Views to Fields 3 and 4 from Eastbridge and the PRoW to the north of the site (connecting Eastbridge to Minsmere Sluice) are intercepted by rising ground and intervening vegetation (including tree belts) at Black Walks. They are separated from Eastbridge Road by several field boundaries which prevent any immediate views from the road. Both Fields 3 and 4 are visible in longer distance views from elevated locations to the north (for example Whin Hill).</p>
	Fields 2 and 3	<p>Fields 2 and 3 lie within the AONB.</p> <p>Field 2 is visible through gaps in the hedgerow along Eastbridge Road, but wider visibility is limited by intervening vegetation. The PRoW north of Field 2 and east of Eastbridge (leading to Minsmere sluice) is located on lower ground and separated by three intervening field boundaries. The PRoW is enclosed by dense vegetation as it approaches the outskirts of Eastbridge and there are limited/no views of Field 2. Longer distance views of Field 2 from the north are intercepted by blocks of trees at the Minsmere Cut and Black Walks.</p> <p>Views to Field 3 from Eastbridge and the PRoW to the north of the site (connecting Eastbridge to Minsmere Sluice) are intercepted by rising ground and intervening vegetation (including tree belts) at Black Walks. Field 3 is separated from Eastbridge Road by several field boundaries which prevent any immediate views from the road. Field 3 is visible in longer distance views from elevated locations to the north (for example Whin Hill).</p>
Recreation and amenity	Fields 1 and 2	<p>Several existing and diverted recreational routes are located in close proximity to Field 1. This option would potentially have the greatest effects on amenity and recreation receptors due to the close proximity of recreational routes to Field 1.</p>
	Fields 3 and 4	<p>Fields 3 and 4 are distanced from recreational routes to the north and west with intervening hedgerows. Therefore, this option would have the least effect on amenity and recreation receptors.</p>
	Fields 2 and 3	<p>Field 3 is distanced from recreational routes to the north and west with intervening hedgerows.</p> <p>Field 2 is adjacent to the diverted and existing recreational routes along Eastbridge Road. There are potential effects on views, noise and air quality from these routes.</p>

I) Site access and entrance hub

i. Main site entrance

7.5.86. A roundabout is proposed at the junction with the B1122 to facilitate the main access to Sizewell C on a temporary and permanent basis. The roundabout is proposed to be located in the southern part of the field between the existing Eastbridge Road and Greenhouse Plantation. The roundabout would, therefore, be located slightly eastwards of the existing alignment of the B1122.

7.5.87. There are two options proposed for the roundabout arrangement, which are driven by the options proposed for the accommodation campus (refer to **Section 7.6**).

7.5.88. Option 1 (refer to **Figure 7.40**) would involve a permanent diversion of the Eastbridge Road to form a new independent access off the B1122 near to Greenhouse Plantation. Under this arrangement the roundabout would have four arms: the B1122 north towards Theberton; Sizewell C construction workers' entrance; Sizewell C freight entrance; and the B1122 south towards Leiston (running clockwise from north-west).

existing Eastbridge Road being closed to the east of Abbey Cottages, allowing access from the B1122. Under this arrangement the proposed roundabout would have five arms: the B1122 north towards Theberton; a realigned Eastbridge Road; Sizewell C construction workers' entrance; Sizewell C freight entrance; and the B1122 south towards Leiston (running clockwise from north-west).

Figure 7.41 Site access – Option 2



Figure 7.40 Site access – Option 1



7.5.89. Option 2 (refer to **Figure 7.41**) would involve a short section of Eastbridge Road being diverted in order to tie into the new roundabout. Provision of a dedicated arm at this junction would allow vehicles to access the village directly. This arrangement would result in the

7.5.90. The bridleway would incorporate a toucan crossing, located to the north of the roundabout on the B1122. This signalised crossing would allow equestrians to travel between the western side of the B1122 and the realigned Eastbridge Road. Refer to **Section 11 Highway Improvements** for further details of EDF Energy's proposals for the bridleway, cycleway and pedestrian network.

ii. Secondary haul road

7.5.91. A secondary access road would be required to connect the main development site from Lover's Lane to the land east of Eastlands Industrial Estate. This is required to facilitate the early delivery of materials from the existing and (if selected) proposed rail infrastructure to the east of Leiston, avoiding the need for additional construction traffic crossing the B1122. This access would also serve as an emergency access point in the event of an obstruction at the main development site entrance. Some permanent realignment to the existing highway would be required to ensure safe operation of the junction.

7.5.92. The secondary entrance junction is proposed to be situated a short distance west of the Survey Laboratory, off Lover’s Lane. The location of the secondary HGV access is shown in the construction masterplan (**Figure 7.27**).

iii. Site entrance hub area

7.5.93. The site entrance hub is located east of the new access junction off the B1122, west of Upper Abbey Farm and south of the accommodation campus. The function of this area is to facilitate safe and secure access to the site and provide office, induction and amenity facilities for the construction workforce. The site entrance would serve as an access point for goods vehicles transporting construction materials and for construction workers and visitors accessing the site on foot, by bicycle, bus and car.

7.5.94. The location of the site entrance hub provides a degree of separation between the people facilities and the construction working areas to the east of the Bridleway 19. It is proposed to retain important tree lines within the hub area.

iv. Offices, staff induction and canteen

7.5.95. It is proposed to erect a site office, induction centre and canteen within the entrance hub area. The site office workforce would require regular interface with site construction activities. The induction facility would enable all site workers to be taken through their induction process near to their place of work. It is envisaged that the combined office/induction centre

building, at the site entrance, would be required to accommodate between 700 and 800 desk spaces, whilst additional temporary ‘workface’ office space would be required at the main power station platform.

7.5.96. Siting these facilities near to the site entrance, as part of the site offices, provides a number of benefits:

- workers are likely to be at the accommodation campus or in local accommodation on the day of induction, so the site entrance would provide the most convenient location for workers;
- workers can be taken directly through the site entrance once inducted; and
- the induction centre would be used for ‘refresher’ and ad-hoc training of existing workers.

v. Bus and car parking areas

7.5.97. Access to these areas would be via an arm off the roundabout junction with the B1122, separating vehicle movements and pedestrian traffic from the freight traffic. Personnel would arrive at the site entrance by a range of transport modes including car, motorbike, bicycle, bus (via park and ride or other direct pick-up services) or by foot. Personnel permitted to drive to Sizewell C by car would be required to park at the main construction site car park and walk to the offices or the access gates. Here they would be subject to a security control check before entering the site and picking-up internal buses to their destination within the main construction site.

vi. Freight areas

7.5.98. The main development site would be a secure construction site with controls on freight entering and leaving. The main road freight access during the construction phase would be via the proposed main entrance roundabout, off the B1122. The proposed entrance area for freight would include a checkpoint where vehicles would be marshalled subject to security checking and verification against booking arrangements made under a delivery management system (refer to **Section 6 Transport**).

7.5.99. Several entrance lanes would be required for freight arrivals and departures. The number would be dependent upon the estimated peak freight traffic and the estimated timing to perform checking/security procedures. The lanes need to allow space for security searches to take place and to have appropriate flexibility to accommodate extra-wide loads. Therefore, it is proposed to provide a separate junction exit off the roundabout for all freight vehicles, which would ease marshalling at the entrance and provide segregation from other entrance activities. The areas identified benefit from existing boundary vegetation on the western site boundary, which has been augmented by additional planting carried out in winter 2015 to help screen Abbey Cottage, Leiston Old Abbey and Old Abbey Farm.

7.5.100. There are two layout options for the site entrance hub, as illustrated in **Figure 7.42** and **Figure 7.43**. The option taken forward would depend on which accommodation campus option is adopted (refer to **Section 7.6**). Entrance hub Option 1 would align with accommodation campus Option 1 and entrance hub Option 2 would align with accommodation campus Option 2. To align with this, Option 2 has the following key differences from Option 1:

- the freight security search area has been moved southwards, whilst maintaining a minimum 25m between operational areas and the main development site boundary;
- the construction electricity supply sub-station would be located within the freight area rather than in a discrete compound abutting it;
- the main car park has had a raised deck added to the 'at grade' parking level, which allows the majority of the area to the east of the tree line to be given over to a drop-off/pick-up interchange for the external buses; and
- the personnel access/security check building and the bonded bus route have been moved to the east and the internal bus interchange has been moved to the east of the existing Bridleway 19 alignment.

Figure 7.42 Site entrance hub - Option 1



Figure 7.43 Site entrance hub - Option 2



vii. Environmental considerations for the site entrance hub

Amenity and recreation

7.5.101. Bridleway 19, Sandlings Walk and Sustrans Regional Route 42 would be re-routed adjacent to an Eastbridge Road diversion for Option 1 or Option 2 as appropriate, for the duration of the construction phase. The Suffolk Coast Path would also be diverted along the same route for temporary periods during construction of the marine infrastructure.

7.5.102. The existing permissive path to Kenton Hills from Bridleway 19 would be closed during construction due to the secondary haul road. Access to the

permissive paths in Kenton Hills would remain open to the public via a proposed route from Kenton Hills car park. Refer to **Section 11 Highway Improvements** for further details of EDF Energy’s proposals for the bridleway, cycleway and pedestrian network.

7.5.103. In addition to the effects due to the physical changes to these routes, further assessment will be undertaken to understand the effects on users of the diverted routes from changes to views, noise, air quality and traffic movements. The visual impact from the diverted routes of the roundabout junction with the B1122 would be mitigated by the retention of treelines and landscape planting, where practicable and consistent with road safety requirements.

Historic environment

7.5.104. A formal settings assessment is being undertaken. Any design work will be undertaken in the context of minimising, or where necessary mitigating, potential impacts on the second Leiston Abbey site. To date, the site entrance has been moved slightly further east, with an overall reduction in the land-take closest to Leiston Abbey. This has also provided greater opportunities for screening.

m) Rail access

7.5.105. The Stage 1 consultation presented three rail route options (green, red and blue) for temporarily extending the Saxmundham-Leiston branch line to the Sizewell site along with use of land east of the Eastlands Industrial Estate as an alternative proposal involving the extension of the existing rail line east of Leiston into this area. Refer to **Section 8 Rail** for further details; including details of the Green rail route outwith the main development site boundary.

7.5.106. Since the Stage 1 consultation EDF Energy has continued to discuss with Network Rail issues relating to the scheduling of freight trains and the infrastructure on the wider local rail network needed to support effective use of rail. EDF Energy has also assessed each of the options against the following criteria:

- consultation responses;
- environmental considerations;
- construction and operational requirements; and
- planning policy.

7.5.107. EDF Energy has reached a view that the blue and red rail route options should not be considered further. The green rail route option and rail terminal on the land to the east of Eastlands Industrial Estate have been retained for further consultation and evaluation at this stage. Refer to **Section 8 Rail** for further details.

7.5.108. Within the main development site, the green rail route would run north of Lover's Lane before entering the contractors' compound areas above Kenton Hills (refer to **Figure 7.27**). This routing has been developed to minimise the crossing of other construction elements (e.g. the stockpile zone), whilst optimising the alignment for a potential smaller rail extension to service the batching plant (refer to **Figure 7.33**). The rail terminal itself would

comprise an unloading area, together with associated cranes to transfer materials to construction vehicles for onward distribution within the main development site. The terminal would expect to receive around 20 container trains in a typical month, equating to around 900 containerised HGV deliveries. Space would be set aside for the temporary storage of containers awaiting transfer to elsewhere within the main development site. Aggregates would be transferred directly from railway wagons into tipper trucks using grab buckets, installed as part of the rail terminal machinery.

i. Environmental considerations for rail access

7.5.109. Refer to **Section 8 Rail** for details of the environmental impacts associated within the green rail route out with the main development site. Within the main development site, the green rail route would not give rise to any different or greater effects than those described in relation to other elements of the main development site.

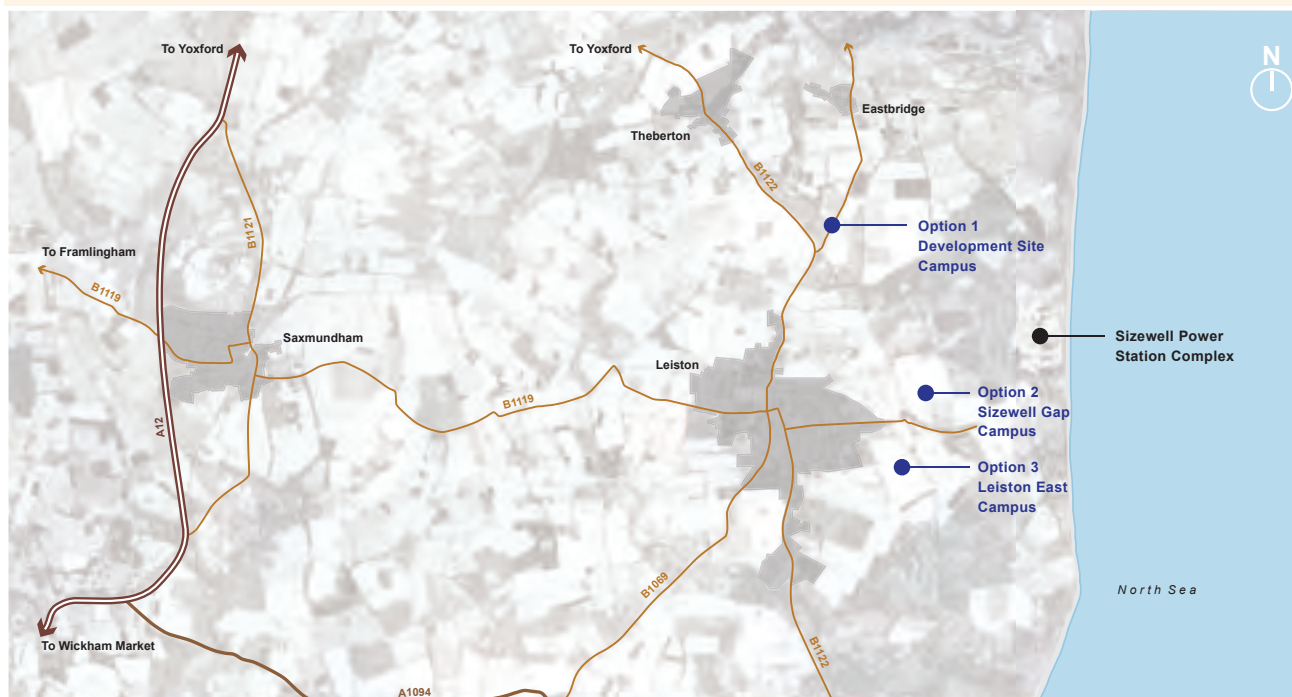
7.6. Accommodation campus

7.6.1. EDF Energy's strategy for accommodating its construction workforce is detailed in **Section 5 Socio-economics**. It explains the approach taken in seeking a balance between provision of temporary workforce accommodation with the use of existing local accommodation. This section describes the requirements for the accommodation campus and the layout options under consideration.

7.6.2. In its Stage 1 consultation EDF Energy proposed three potential siting options for an accommodation campus (**Figure 7.44**):

- Option 1: Development Site (EDF Energy's preferred option);
- Option 2: Sizewell Gap; and
- Option 3: Leiston East.

Figure 7.44 Stage 1 accommodation campus site options



7.6.3. Following the Stage 1 consultation, and in consultation with key stakeholders, EDF Energy has assessed the three accommodation campus site options against the following considerations:

- feedback to consultation;
- environmental considerations;
- construction and operational requirements;
- transport;
- socio-economics; and
- planning policy.

7.6.4. EDF Energy has selected Option 1 (Development Site) as its preferred site and is developing potential masterplan layout options. Further information on each of these considerations is provided below.

a) Consultation feedback

7.6.5. Table 7.8 summarises the feedback received regarding the accommodation campus options presented in the Stage 1 consultation. A number of respondents stated that the building of a dedicated on-site accommodation campus (Option 1 Development Site) would help to

mitigate the effects of a large workforce in a small, rural community. It was also acknowledged by some that it would be better to locate the construction workforce in a single campus close to the main development site. However, other respondents suggested that the accommodation campus should be divided up into smaller campuses, more widely dispersed geographically.

7.6.6. Generally those living close to the proposed accommodation campus sites that were consulted upon raised concerns over the potential for effects on residential amenity.

Table 7.8 Accommodation campus – Stage 1 consultation feedback

Site	Main themes raised by respondents to the Stage 1 consultation
Option 1 (Development Site) – Preferred site option	<ul style="list-style-type: none"> • Perceived reduced environmental impact compared to other site options. • Mixed views on traffic impacts, with some commenting that traffic impacts on local roads would be reduced by keeping staff on-site, whilst others raised concerns that movements by workers accessing local shops, services and leisure activities would increase. • Considered that the siting away from larger residential areas would help to minimise anti-social behaviour. • Considered that it would have lower impacts on visual amenity and designated sites (outside of the AONB). • The use of greenfield site/undeveloped land. • Concern that the size of the campus would dominate the communities in Eastbridge and Theberton, with potential for increased crime and reduced quality of life for residents. • Impact upon the Minsmere Nature Reserve and surrounding area with regard to bird habitat, landscape views and tourism. • Impact upon the setting of heritage assets particularly the second Leiston Abbey, Theberton House and nearby listed buildings. • Impacts on PRoW. • Concerns over light, noise and air pollution effects.
Option 2 (Sizewell Gap)	<ul style="list-style-type: none"> • Proximity to Leiston would be good for local businesses, although not as good as Option 3 (Leiston East). • Enables walking or cycling to the construction site, and enables the avoidance of travel through Leiston. • Inappropriate development in an open area of the AONB. • Potential for legacy housing and/or recreational facilities. • Use of greenfield site/undeveloped land. • Proximity to designated habitat sites. • Proximity to Leiston and Sizewell villages could cause anti-social behaviours in these communities. • General issues of light and noise pollution.
Option 3 (Leiston East)	<ul style="list-style-type: none"> • Good balance between distance from the construction site and proximity to communities for access to local shops and services, benefiting local businesses. • Suitable for housing, employment or recreational legacy due to proximity to Leiston. • Edge of town development, so minimises impact on countryside, wildlife and designated sites. • Workers can travel to site by bus/walk and avoid travel through Leiston. • Potential for use of rail for workers using existing rail line. • Too close to Leiston and local schools having negative impact upon use of local facilities and anti-social behaviours. • Increased reliance upon car traffic to and from the main development site. • Proximity to designated habitat sites and partial development within the AONB.

b) Environmental considerations for Accommodation Campus

7.6.7. Option 1 (Development Site) lies wholly outside of the AONB and is furthest away from European designated sites. Effects on the setting of the AONB would need to be considered, but effects would be temporary and in the context of the adjoining construction area. Other potential effects on ecology and heritage require careful consideration, with particular regard to potential effects to nearby ecological receptors and the second Leiston Abbey site.

7.6.8. Option 2 (Sizewell Gap) would be located entirely within the AONB and closer to European sites. Option 3 (Leiston East) is also partially located within the AONB (the site access road) and similarly close to European designated sites. These two sites could give rise to potential direct and indirect disturbance to the habitat of protected bird species (Woodlark and Nightjar) in the nearby Sandlings SPA.

7.6.9. Each of the Stage 1 consultation site options would involve development on existing greenfield agricultural land, with the Agricultural Land Classification (ALC) being rated as moderate to poor.

7.6.10. On balance, the options are considered to be equal from an environmental perspective.

c) Construction and operational requirements

7.6.11. Significant benefits for the Project would be secured through the prompt access by workers into the construction site, more efficient night-time working and reduced emergency response times, all helping to reduce the scope for delay to the Project schedule. Furthermore, it is considered that the availability of good quality campus accommodation with direct access to the site would be a material consideration in attracting and retaining the high-quality workforce required for the Project.

7.6.12. There are no significant differences in constructability between the three site options. Each of the sites could provide a reasonable layout to serve the purpose required.

d) Transport

7.6.13. Option 1 (Development Site) would be more efficient in terms of reduced travel time between the accommodation campus and the construction site. This would facilitate a significant increase in construction efficiencies, with lower overall costs. An accommodation campus located away from the main development site would generate a need for shuttle bus movements along Lover's Lane and Abbey Road (B1122) to move workers to and from the site. It would also generate additional management and security costs both on- and off-site.

e) Socio-economics

7.6.14. Option 1 (Development Site) would be located furthest from Leiston town centre and its associated shops and services. There would be reduced scope for workers to utilise these local facilities on a daily basis, with greater reliance upon on-site facilities. However, this option has the benefit of being within walking distance of the construction site, improving the attractiveness of the campus to a skilled workforce, improving project efficiency and ensuring that workers can have a quick response time to attendance on-site.

7.6.15. Option 2 (Sizewell Gap) and Option 3 (Leiston East) sites offer greater potential for expenditure by construction workers within Leiston town centre. This needs to be weighed against the issues of workforce management and potential community impacts associated with increased traffic movements.

7.6.16. The proximity of Option 1 (Development Site) to the second Leiston Abbey site and the ProCorda Music School has also been carefully considered. A combination of sensitive site layout, existing and proposed landscape screening and workforce management

measures will be utilised to mitigate potential impacts to Leiston Abbey, both as a heritage asset and tourist destination, and the day-to-day operation of the school.

f) Planning policy

7.6.17. EDF Energy is required to have regard to the purpose of conserving and enhancing the natural beauty of the AONB. NPS EN-1 states that applicants must seek to minimise harm to the designated landscape in formulating their proposals. EN-1 advises that energy developments proposed within the AONB should have regard to key considerations of national need, environmental effects and scope for alternatives.

7.6.18. NPS EN-1 and other material policies, including the National Planning Policy Framework, encourage sustainable development that takes into account options for non-car modes of travel and siting developments in locations that can facilitate this.

7.6.19. On balance, it is considered that the Option 1 (Development Site) site is preferable in planning policy terms. This is because of its siting outside the AONB, its scope for visual containment and overall reduction in car movements on the local road network, as well as its role in retaining a significant proportion of the workforce on-site during the working week.

g) Site selection conclusions

7.6.20. EDF Energy stated at its Stage 1 consultation that the Development Site accommodation campus option was its preferred option. This was on the basis that it would reduce the amount of travel by construction workers to and from the construction site, be more attractive to workers, provide greater construction efficiencies and facilitate implementation of worker codes of behaviour. However, EDF Energy noted the concerns raised by the nearby communities of Eastbridge and Theberton. It has carefully considered the benefits of the Development Site campus with the other two site options presented.

7.6.21. The Option 2 site at Sizewell Gap received only limited support; a common concern being its location entirely within a relatively open area of the AONB. This area is now being used to create new reptile habitat (refer to **Section 7.4**). The Option 3 site at Leiston East is also partially located within the AONB, by reason of the required access road into the accommodation campus. Both of these site options would generate additional bus and car movements on the local highway network.

7.6.22. EDF Energy has concluded that, on balance, Option 1 (Development Site) should remain as the preferred site.

This conclusion has been drawn on the basis that in terms of environmental considerations, perhaps with the exception of the exposed setting of Option 2 in the AONB, the sites are on a par with each other. As a consequence, it is the project efficiency benefits, transport benefits and workforce management benefits of the accommodation campus being part of the main development site which weighs in its favour against the other options. Sizewell Gap (Option 2) and Leiston East (Option 3) have therefore been discounted.

7.6.23. The 2,400-bed accommodation campus would comprise:

- modular buildings with self-contained rooms and en-suite facilities;
- car parking for residents (ratio of one parking space per 1.6 bedspaces, equating to 1,500 parking spaces);
- a canteen/restaurant and kitchen facilities;
- bars and recreational areas;
- central administration offices;
- indoor and outdoor sports facilities;
- waste recycling and facilities to supply energy to the site;
- site security area including fencing;
- perimeter road and appropriate lighting to ensure the safe and secure operation of the site;
- a shop;
- laundrette/laundry service;
- refuse stores for each block; and
- other utilities and services, including water treatment plant.

The range of facilities within the accommodation campus, and lack of direct access to local villages, would limit the need for residents of the accommodation campus to leave the campus, in the event that both the indoor and outdoor sports facilities are provided within the accommodation campus site.

7.6.24. The buildings would be designed to comply with Part L of Building Regulations and would be assessed against the Building Research Establishment Environmental Assessment Method (BREEAM). A number of potential energy supply technologies are under consideration, including a centralised Combined Heat and Power (CHP) plant.

h) Siting considerations and layout options

7.6.25. EDF Energy is considering alternative layout options for the preferred accommodation campus site, which have been influenced by the following siting considerations:

- to accommodate the maximum anticipated bedspace numbers and associated car parking and other infrastructure required;
- to be sympathetic to the relationship and compatibility with adjoining land uses (existing and proposed);
- to ensure the need for an attractive living environment for the workforce;
- to ensure existing site features along the perimeter of the site are maintained, as far as practicable;
- to take account of existing built and natural environment character;
- to ensure safe pedestrian and vehicular movement;
- to protect key ecology corridors, notably the existing Bridleway 19 to the east;
- to meet building regulations and BREEAM sustainability targets; and
- to meet the requirements of sustainable drainage systems.

7.6.26. The following layout options draw on the above considerations, with some weighing in favour of layout Option 1 and others in favour of Option 2 (i and ii). At this stage, EDF Energy does not have a preference over the layout options presented. Feedback from consultation and ongoing environmental assessments will inform its identification of a preferred layout, which would be consulted upon in final form ahead of submitting its application for development consent. The options are:

- Option 1: built development east and west of the Eastbridge Road, as illustrated in **Figure 7.45**;
- Option 2: built development on the east side of Eastbridge Road, with sub-options for the siting of the sports pitches:
 - (i) the sports facilities on the west side of Eastbridge Road (refer to Figure 7.46); or
 - (ii) the sports facilities located remote from the accommodation campus, on a site to be identified (refer to Figure 7.47).

i. Option 1

7.6.27. Option 1 comprises two areas of accommodation either side of the existing Eastbridge Road as illustrated in **Figure 7.45**. The indicative masterplan distributes the accommodation across four storey (circa. 14m high above ground level) modular buildings in the

east field and three storey (circa 11m) buildings in the west field. There would be a separation distance of 25 - 30m between each building. **Figure 7.48** details an indicative cross section of Option 1, showing the height of the accommodation buildings in relation to the existing boundary trees and hedgerows.

Figure 7.45 Accommodation campus layout - Option 1



7.6.28. Single deck car parking areas would be provided in two core locations, to the south-west and north of the accommodation zones, as well as some provision adjacent to the buildings blocks.

7.6.29. Sports pitches and associated infrastructure (e.g. lighting) are proposed in the south-western part of the site, outside the campus perimeter fence.

7.6.30. The accommodation campus would be accessed directly off the proposed B1122 site entrance roundabout, with vehicles able to access the campus directly.

7.6.31. Option 1 would involve re-routing Eastbridge Road further to the west, incorporating a new junction with the B1122. The existing Eastbridge Road would not be closed until the new road was ready for public use. Retaining the current route of Eastbridge Road is considered to pose potential safety risks to users of the public highway and accommodation campus residents. The new road would be a permanent diversion (even after the removal of the accommodation campus), linking up with the existing Eastbridge Road to the north of the accommodation campus in the vicinity of the access lane to Potter's Farm. The area between the buildings and road would be screened by landscape mounding and planting. Under

this option, the proposed Bridleway 19 diversion would be accommodated in the area between the new road and the boundary fence of the accommodation campus.

7.6.32. Figure 7.45 illustrates the general arrangement for landscaping. The existing site landscape features (including trees and hedges along Bridleway 19), Greenhouse Plantation and the Eastbridge Road would be retained. They would be supplemented by new planting and earthworks around the junction of the B1122, the new Eastbridge Road diversion and the north-west corner near to Potter’s Farm. These features would help maintain a sense of enclosure and partially screen the development from sensitive locations in the vicinity.

ii. Option 2 (i) and (ii)

7.6.33. Figure 7.46 illustrates the layout of Option 2(i), with the built form of the accommodation campus sited on the east side of the Eastbridge Road only. This would be achieved through the reconfiguration of the campus amenity and entrance hub facilities, double deck car parking and distributing the accommodation buildings over three to five (circa 17m above ground level) storeys. Under this arrangement the three storey buildings would be located nearest to the Eastbridge Road, the five storey buildings near to the bridleway, with some intervening four storey buildings in the middle. Option 2(i) would involve the sports pitches being sited in the western field, in a similar location and configuration to those proposed in Option 1.

Figure 7.46 Accommodation campus layout - Option 2 (i)



7.6.34. Figure 7.47 sets out option 2(ii). The layout would be the same as option 2(i), apart from the

sports pitches which would be sited remotely from the accommodation campus, at a site still to be identified.

Figure 7.47 Accommodation campus layout - Option 2 (ii)



7.6.35. Under both options 2(i) and 2(ii) car parking would be provided at the northern end of the site on two levels. Similar to Option 1, parking would also be provided directly adjacent to and between the accommodation buildings. The majority of Eastbridge Road would remain in public use for both options, and Abbey Cottage would continue to be accessed via the existing Eastbridge Road off the B1122. The proposed Bridleway 19 diversion would be accommodated in the area between the existing Eastbridge Road and boundary fence of the accommodation campus

7.6.36. The amount of space between the accommodation buildings for options 2(i) and 2(ii) would be the same as Option 1, with the separation distance between habitable rooms typically 25 – 30m. **Figure 7.49** details a cross section of Option 2, showing the height of the accommodation buildings in relation to the existing boundary trees and hedgerows.

Figure 7.48 Accommodation campus - Option 1 cross section

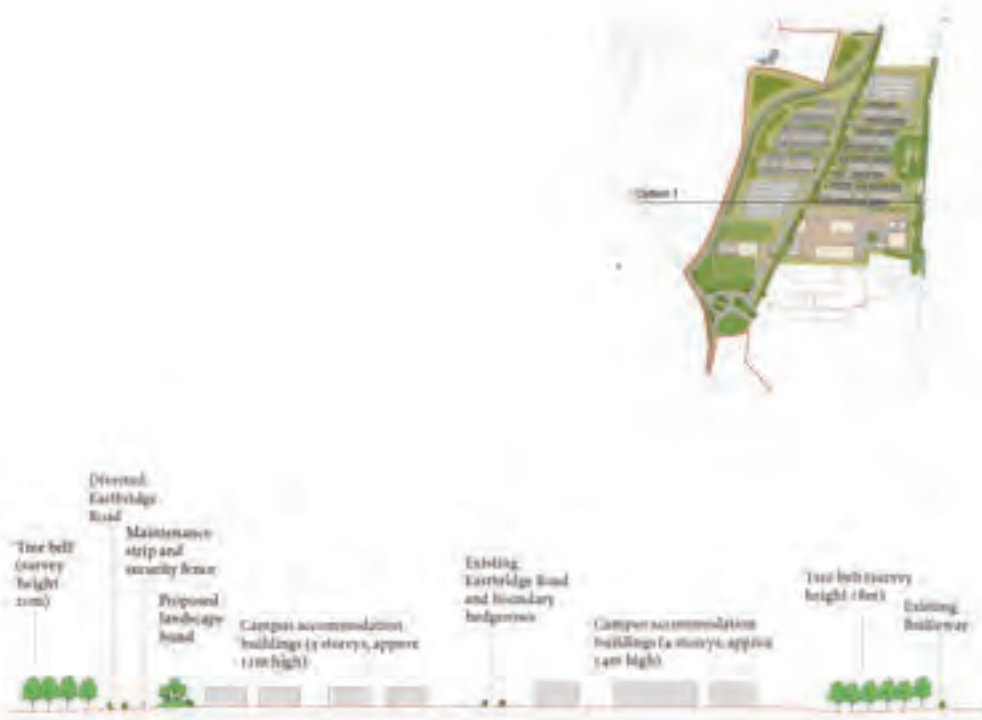


Figure 7.49 Accommodation campus - Option 2 cross section



Figure 7.50 Indicative layout and landscape treatment



7.6.37. In terms of landscaping, for options 1 and 2, the existing boundary trees and hedgerows along Bridleway 19 and Eastbridge Road would be maintained along with some additional planting to the east of Eastbridge Road.

7.6.38. **Figure 7.50** illustrates the type of layout and landscape treatment envisaged within the accommodation campus.

i) Environmental considerations for the accommodation campus

7.6.39. Many of the environmental considerations are common to both layout options; but where there are differences these are identified below.

i. Socio-economics

7.6.40. The operational considerations for the accommodation campus are broadly similar, irrespective of which option is progressed. However, siting the sports facilities within the accommodation campus (i.e. Option 1 and 2(i)) would encourage workers to use them and reduce traffic effects on local communities, but may potentially reduce the economic benefits of off-site expenditure by campus-based workers. Conversely, siting facilities within existing communities (e.g. Leiston) as proposed in Option 2(ii) would provide community benefits through the potential for increased public access.

ii. Landscape and visual

7.6.41. The campus layout options are located outside of, but immediately adjacent to, the AONB and within an area designated as a Special Landscape Area. The built development for all options and sports facilities (for Options 1 and 2(i)) would be located within a well-established vegetation framework comprising mature trees and hedgerows.

7.6.42. Option 1 would have a larger development footprint and would require new infrastructure (i.e. a road) to be constructed. As such, landscape and visual effects can be regarded as more significant compared to Option 2(i), and particularly Option 2(ii) as there would be no sports pitches requiring external lighting.

7.6.43. From lower lying areas, mature hedgerows and tree belts would typically screen/filter views of built development and sports facilities, including from locations in Eastbridge and from Eastbridge Road. There is the potential for views of built development from local roads and rights of way networks, residences (notably Theberton House and Potter's Farm) and the second Leiston Abbey site. Built development in all options is likely to be visible from elevated locations to the north (including Whin Hill). **Figure 7.51** shows an indicative photomontage of Option 1 and Option 2 from the Leiston Abbey car park.

7.6.44. Further work will be undertaken to develop an internal planting strategy for the layout to maximise the integration of built form within the existing landscape framework.

Figure 7.51 Accommodation campus development (Option 1 and Option 2) viewed from Leiston Abbey site car park



Existing view



Option 1 – photomontage



Existing view



Option 2 – photomontage

iii. Amenity and recreation

7.6.45. Option 1 would require the diversion of Suffolk Coast Path, Sandlings Walk, Bridleway 19 and Sustrans route, due to the need to close Eastbridge Road. It is proposed that the diversion would run parallel to the proposed new Eastbridge Road, west of the accommodation campus boundary.

7.6.46. Option 2(i) and (ii) would require the diversion of the Suffolk Coast Path, Sandlings Walk and Bridleway 19, to run parallel with the line of the existing Eastbridge Road along a new route between the road and the accommodation campus boundary. The Sustrans cycle route would remain on its existing line along this road.

7.6.47. In terms of Option 2(ii), residents of the accommodation campus wishing to use the remote sports facilities may give rise to a more intensive use of proposed rights of way diversions parallel to B1122 by pedestrians and cyclists.

iv. Terrestrial historic environment

7.6.48. Buried archaeology may be present within the accommodation campus site. Setting impacts on nearby designated heritage assets, including Upper Abbey Farm and the second Leiston Abbey site, will need to be assessed.

7.6.49. Under Option 2(i) and (ii) there would be greater distance separation between Leiston Abbey and the accommodation campus, particularly with Option 2(ii). This would be likely to offset the potential setting impacts of the higher buildings proposed in this option.

v. Noise and vibration

7.6.50. The accommodation campus is not expected to give rise to significant noise levels. However, since there would be some noise from heating and ventilation equipment, vehicle movements and some recreational activities, the proximity of the boundary of the site to nearby residential uses has the potential to result in minor differences in noise exposure. These are unlikely to be significant. On this basis, Option 1 has a slightly greater potential for noise impact as it would have noise sources closer to nearby residential uses. Option 2(i) would be likely to result in slightly lower off-site noise levels than Option 1 at nearby noise sensitive places as the majority of sources would be further away. Option 2(ii) would result in the lowest noise impact because of the absence of the sports pitches.

vi. Air quality

7.6.51. Diversion of the road to Eastbridge would bring traffic emissions to within 200m of a residential receptor (Potter's Farm) at the northern end of campus. Air quality impacts may be partially mitigated by topsoil storage mounds, depending on the spoil storage option chosen. However, given the typical traffic volumes on the Eastbridge Road, the air quality effects of this change are expected to be minor.

vii. Groundwater and surface water

7.6.52. There is potential for surface water run-off to increase the mobilisation of contaminants. This would be mitigated by appropriate drainage arrangements. Groundwater levels would be monitored during construction to assess the level of change. Foul water will be routed to a sewage treatment works where it will be treated prior to discharge to sea.

7.7. Sizewell Halt and land east of Eastlands Industrial Estate

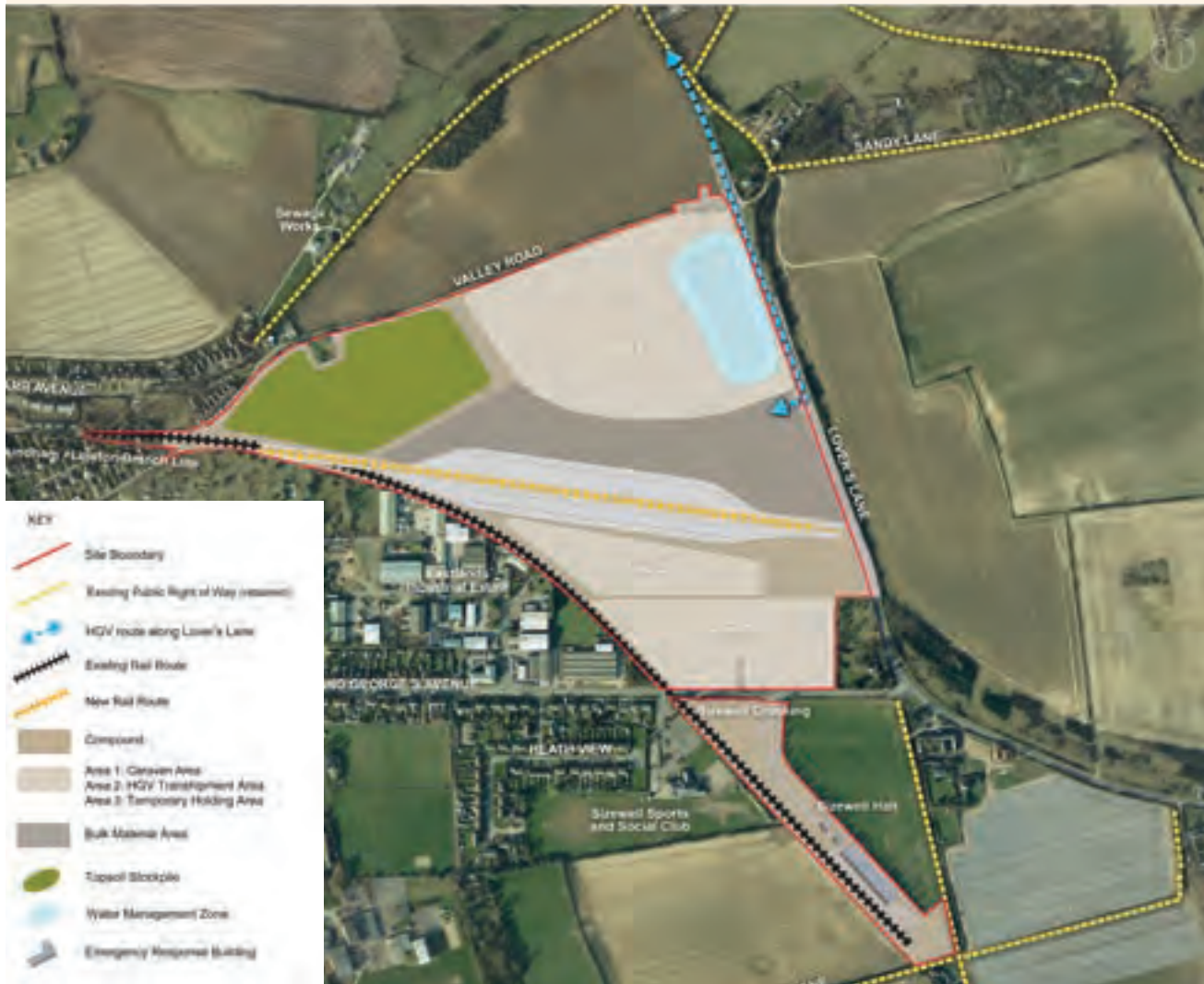
7.7.1. During the early part of the construction phase, prior to the marine and rail infrastructure being in place, Sizewell Halt would play an important role in enabling the delivery by rail of bulk materials. Refurbishment of the existing track and railhead would be required, as described in **Section 8 Rail**.

7.7.2. The construction phase masterplan (**Figure 7.27**) identifies an area of land to the east of the Eastlands Industrial Estate for construction purposes. Use of this land involves two options:

- Option 1: for construction and caravan accommodation purposes, as well as provision for a new rail terminal as an alternative to the green rail route (refer to **Figure 7.52**).
- Option 2: if the green rail route is selected, use for construction and caravan accommodation purposes only (refer to **Figure 7.53**).

7.7.3. The option that will be progressed to the next stage of consultation will be selected having regard to the transport strategy to be adopted, ongoing technical studies and the feedback from consultation.

Figure 7.52 Option 1 with Rail Terminal



7.7.4. The use of the land east of Eastlands Industrial Estate has an important role in the construction of Sizewell C, particularly in the early phase of the Project when space is limited in the main power station platform area. The following uses are envisaged:

- the storage of bulk materials delivered from Sizewell Halt prior to its dispatch to the main power station platform;
- storage of non-bulk and containerised material delivered by HGV, that are not required for use immediately in the construction works;
- a short-term park and ride area to allow workers to be shuttled by mini-bus to the power station platform, avoiding the need for on-site car parking. This function would be required until a SSSI crossing has been established and the workforce can use the main construction car park;
- an HGV holding area, principally to regulate the flow of HGVs using the existing Sizewell B access road; and
- space in the north part of the site for workers' caravan accommodation, recognising there would be no campus accommodation available in the early stages of construction. This facility would continue to be offered throughout the construction phase, providing an option to workers not wishing to use the site accommodation campus or other existing local accommodation.

Figure 7.53 Option 2 without rail terminal



7.7.5. Vehicular access to this area would be from the south via King George's Avenue and from the north east via Lover's Lane. There would also be access to the proposed caravan park via Valley Road.

a) Environmental considerations for land east of Eastlands Industrial Estate

i. Terrestrial historic environment

7.7.6. A desk-based assessment and geophysical survey indicates that there is the potential for buried archaeology to be present in this area. Trial trenching will be undertaken to determine the presence or absence of archaeology and to characterise any remains found. If buried archaeology is present, a mitigation strategy would be agreed with SCC, which would most likely comprise 'Preservation by Record'.

ii. Noise

7.7.7. Some of the proposed activities would have the potential to have noise effects, including noise arising from vehicle movements and use of the rail head (if selected). Mitigation would be possible by the use of quieter plant, working methods and the provision of screening and enclosure, as appropriate.

iii. Air quality

7.7.8. Bulk material storage and handling within this area would be managed through application of best practice techniques for mitigation of dust and particulates generation.

7.8. Site-wide infrastructure

7.8.1. This section describes the infrastructure and common services required across the main development site that are needed to facilitate the construction of the power station.

a) Foul water drainage

7.8.2. The collection and disposal of foul water sewage would involve a piped network of drains discharging into a sewage treatment works, sited within the contractors' compound area. Secondary treatment of sewage would occur prior to this being discharged to sea.

b) Surface water drainage

7.8.3. Work activities undertaken during the construction phase would increase surface water run-off, predominantly due to land use changes and the creation of semi-permeable and impermeable surfaces. Sustainable Urban Drainage Systems (SUDS) would be used, where possible, to manage surface water. The term SUDS covers a variety of potential drainage systems that seek to mimic natural drainage. The key benefits of SUDS over traditional drainage methods include:

- the attenuation of surface water-run off, thereby limiting the potential for flooding and impacts on natural flow regimes;
- the potential infiltration of water back into the ground to recharge groundwater; and
- the control of pollution caused by surface water run-off.

7.8.4. Water management zones (WMZs) are commonly used as part of SUDS. A number of WMZs would be created within the main development site, in which surface water run-off would be attenuated, treated (if required) and monitored before being infiltrated back into the groundwater system or discharged to local watercourses under the relevant environmental permit.

7.8.5. In order to prevent pollution within the construction areas, features such as oil separators and filters would be used to remove hydrocarbons. The re-use of surface water, instead of potable water, for construction activities (e.g. dust suppression) will be considered. The features of a scheme will be consulted on prior to an application for development consent being submitted.

c) Lighting

7.8.6. The construction areas across the main development site would need to be suitably lit to allow for a safe working environment when natural light levels are insufficient. Lighting levels would vary across the site to respond to specific working requirements. EDF Energy is developing its lighting strategy, recognising that any lighting scheme would endeavour to minimise the effect on potential light sensitive areas and/or features. The features of the scheme would comprise the following, with a detailed scheme to be consulted on prior to an application for development consent being submitted:

- the power station platform, the common user facilities and contractors' compound areas would be lit at all times (up to 200 lux);
- the ecological buffer areas around the majority of the site would not be lit;
- the stockpile and borrow pit areas would have low level lighting appropriate to essential tasks needed to be carried out in hours of darkness (between 10 and 50 lux); and
- the accommodation campus (up to 75 lux) and entrance hub (up to 50 lux) area would have levels of lighting necessary for safety.

d) Main access road from B1122 to the main platform

7.8.7. A new access road would be required during the whole of the construction phase for general construction traffic including HGVs, light goods vehicles, site vehicles (4x4, cars, etc.) and buses to transport workers around the site. This would be a hard surfaced road. The routing of the access road is shown on **Figure 7.27**, with a general section arrangement shown in **Figure 7.54**.

e) Haul roads

7.8.8. Haul roads, made of stone or other surface materials, would be required primarily for the movement of excavation vehicles transporting earth to/from the main platform to the stockpile areas. In some instances the haul roads may not be required for the full duration of the construction phase; they would be adapted as necessary to allow use as an access road for general construction traffic.

7.8.9. The haul roads need to safely accommodate the movement of the largest excavation haulage vehicles known as CAT 777s, typically 6.5m wide. The haul roads

Figure 7.54 Illustration of a section through an access road

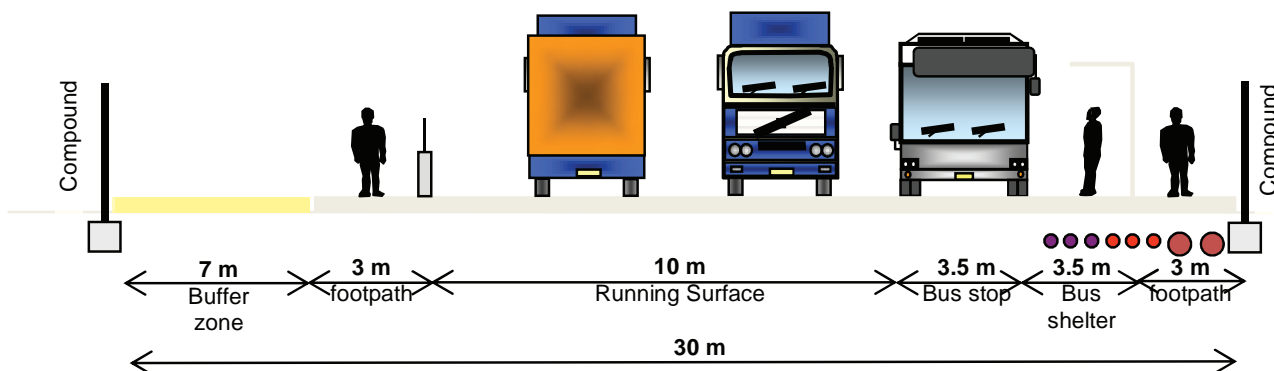
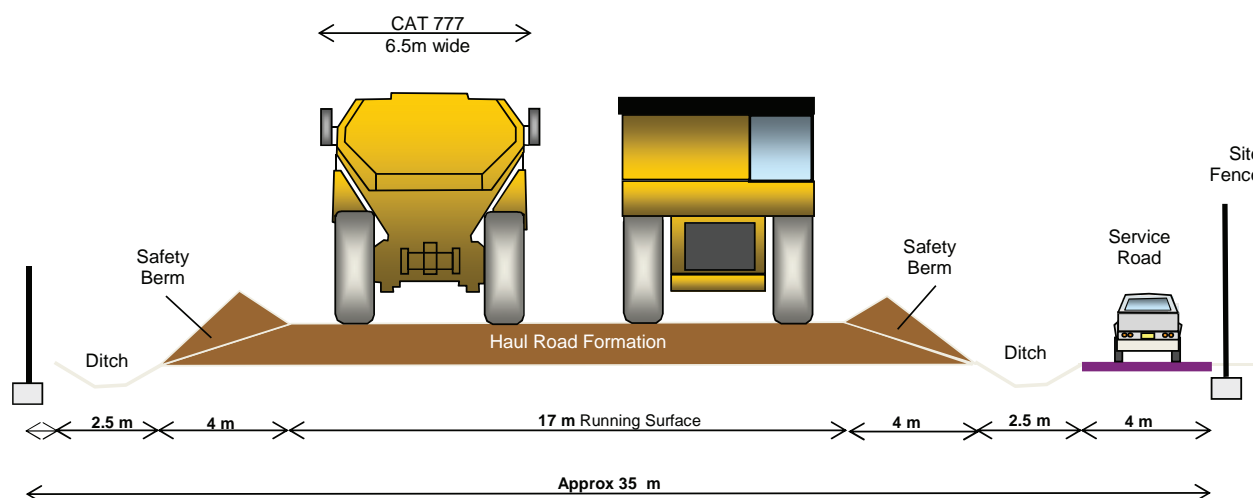


Figure 7.55 Illustration of a section through a haul road



need to be approximately 30m wide, excluding any associated services (i.e. 2m allowance between passing vehicles, 1m to the edge of the running surface and a further 6.5m either side of the road to allow for safety berms and drainage ditches), as illustrated in **Figure 7.55**.

f) Service roads

7.8.10. Service roads would comprise unsurfaced tracks running along/near the construction fence, to allow for security control and inspection/maintenance of the fence line. A corridor of 4m would allow two small security/ service vehicles to pass each other. Larger vehicles would need to utilise designated passing points.

g) Environmental Boundary Treatment

7.8.11. It will be necessary to provide separation between the construction site activities and neighbouring properties and habitats to limit noise and other disturbance. Depending on the location of the buffer zones this could take the form of earth mounding, acoustic fencing, hedge strengthening, tree planting or a combination of these. The features of a scheme will be consulted on prior to an application for development consent being submitted.

7.9. Preliminary environmental information

a) Terrestrial ecology and ornithology

7.9.1. The main development site includes a range of different habitat types, including coniferous and broadleaved woodland, agricultural land, hedgerows and a small area of Sizewell Marshes which is designated as a SSSI. In addition to Sizewell Marshes, there are also nationally and/or internationally important wildlife sites to the north (Minsmere to Walberswick Heaths and Marshes SSSI, SAC, SPA and Ramsar site) and to the east (Outer Thames Estuary SPA), as well as a number of other international, national and locally important wildlife sites (refer to **Figure 7.56**).

7.9.2. Following on from the Stage 1 consultation, EDF Energy's priorities have been to progress the conceptual engineering design, technical studies and further environmental studies in order to inform the ongoing environmental mitigation design work and Environmental Impact Assessment (EIA). Most importantly, in order to carry out a robust ecological impact assessment (EclIA), a detailed description is required of the existing conditions of the habitats and species that could be affected by the proposals; this has been the focus of much of the work carried out since Stage 1. In addition to informing the impact assessment, this survey work has also been used to inform and prioritise early development of key aspects of mitigation design.

7.9.3. There are a number of potential ecological issues that may arise from the construction of the proposed development, most notably land-take from the north-eastern corner of Sizewell Marshes SSSI. Early consideration of these matters is essential in designing effective mitigation. Following detailed pre-application consultation with stakeholders, including Natural England and the Environment Agency, EDF Energy, has developed proposals to compensate for the land-take from the SSSI. Planning permission was granted in March 2015 to create approximately 6 ha of wetland habitat, including wet reedbed, open water and 2km of lowland ditches together with drier marginal reed habitat, set within a 67ha site. Lowland heath/acid grassland is to be created across the rest of the site, using peat excavated from the new wetlands to help reduce soil fertility and facilitate heathland creation. Work on the habitat creation scheme, which is located at Aldhurst Farm near Leiston, started in June 2015. The initial phase of habitat creation, which

has involved the excavation of 150,000 tonnes of soil and planting of over 100,000 reeds, is now complete. Proposals are also being developed to compensate for any loss of fen meadow habitat from the SSSI.

7.9.4. Potential effects upon the bird species associated with the nearby Minsmere to Walberswick Heaths and Marshes SPA have also been the focus of mitigation design. Proposals are currently underway to create alternative foraging habitat for marsh harriers should they be displaced from Sizewell Marshes SSSI as a result of construction noise and visual disturbance. A number of other mitigation measures are being explored, including the maintenance of habitat corridors, the management of public access to sensitive sites (including other SPAs beyond the boundaries of the site), and the inclusion of environmental buffers and acoustic fencing into the construction masterplan to help protect neighbouring habitats and species from light, noise and visual disturbance.

7.9.5. The main development site supports an important population of reptile species comprising adder, grass snake, common lizard and slow worm. In order to minimise effects on reptiles, a detailed reptile mitigation plan is currently being prepared, which will include a comprehensive translocation exercise to move the animals to alternative habitat to be created in advance of site clearance. In order to optimise the likelihood of success, work has already commenced on the creation of approximately 142ha of 'receptor' habitat comprising acid grassland/heathland habitats, mainly on former arable land (refer to **Figure 7.8**). The locations of the proposed receptor sites have been selected to maximise connectivity with the wider landscape, and to optimise the establishment and spread of other biodiversity, including reptile prey species (in particular, invertebrates). Whilst these areas are being created to mitigate for construction phase effects, implementation of the landscape masterplan would help to increase their value over the course of the operational phase.

7.9.6. Ecological considerations are playing an important role in the formulation of the proposed landscape restoration and masterplan for the operational phase (refer to **Figure 7.7**). This includes habitat creation works at Aldhurst Farm and the reptile sites and is therefore already being progressed on land outside of the main development site. Once the construction phase is complete, the main development site would also be restored to optimise its ecological value. Some limited areas of agricultural land would be reinstated, predominantly at

the western end of the main development site where the soils are of higher quality. However, the vast majority of the site is underlain by relatively poor quality, sandy soils which are well suited for restoration to acid grassland and heathland interspersed with scattered scrub. The biodiversity value and ecological connectivity of the main development site would therefore be significantly greater in the operational phase than exists at present.

b) Landscape and visual

7.9.7. The main development site is located almost entirely within the Suffolk Coast and Heaths AONB and partially within the Suffolk Heritage Coast and a Special Landscape Area SLA (refer to **Figure 7.56**). The natural beauty and special qualities of the AONB have been taken into account alongside the potential landscape, seascape and visual effects arising from the construction and operation of the power station, as key considerations in its design.

7.9.8. During construction, landscape and visual effects are likely to result from the loss of landscape features and elements, such as the felling of trees as part of site preparation, as well as effects arising from the construction activities. In order to limit these effects as far as practicable, EDF Energy is looking to minimise the amount of land used during construction. In addition, existing landscape features, such as the Northern Mound, a landscape feature created as part of development of Sizewell B, would be retained where possible to provide important visual screening. New planting would be established at the earliest opportunity.

7.9.9. Once construction of the power station is complete, landscape restoration works would focus on opportunities to enhance the landscape character value of the EDF Energy Estate. This is likely to involve creating new wildlife habitat, such as heathland, acid grassland, hedgerows and woodland as well as increasing the overall ecological connectivity of the landscape. Importantly, this new habitat would provide an improved link between the valuable wildlife habitats to the north and south.

7.9.10. Lighting the site, during the construction and operational phases, is also an important consideration. There is a need for a sensitive balance between safety requirements and the potential impacts of light spill on the wider landscape. As part of the design, the height of lighting columns is being carefully considered in addition to the level of illumination and the use of directional lighting.

c) Amenity and recreation

7.9.11. The area around Sizewell is used for a range of land and water based recreational activities including walking, cycling, fishing, shooting, bird watching, sailing and kayaking, among others. An established network of public and permissive footpaths exists in the area, including the long-distance Sandlings Walk and the Suffolk Coast Path which both pass through the main development site. The RSPB owns the nearby Minsmere Reserve.

7.9.12. During construction, EDF Energy would maintain public access to the Suffolk Coast Path, which runs along the beach frontage, except for the short periods when the construction of marine infrastructure means that it would not be safe or practicable to do so. However, certain other footpaths may need to be closed for the duration of the construction works. Discussions are being held with stakeholders regarding what measures would best mitigate these impacts including the provision of alternative routes and the retention, where possible, of existing footpaths, such as the permissive pathways in Kenton Hills. Consideration has also been given to the siting, and appropriate screening, of elements required for construction. The amenity value of footpaths, bridleways, cycleways and other outdoor recreational resources, and the experiences of those using them, would be maintained as far as possible.

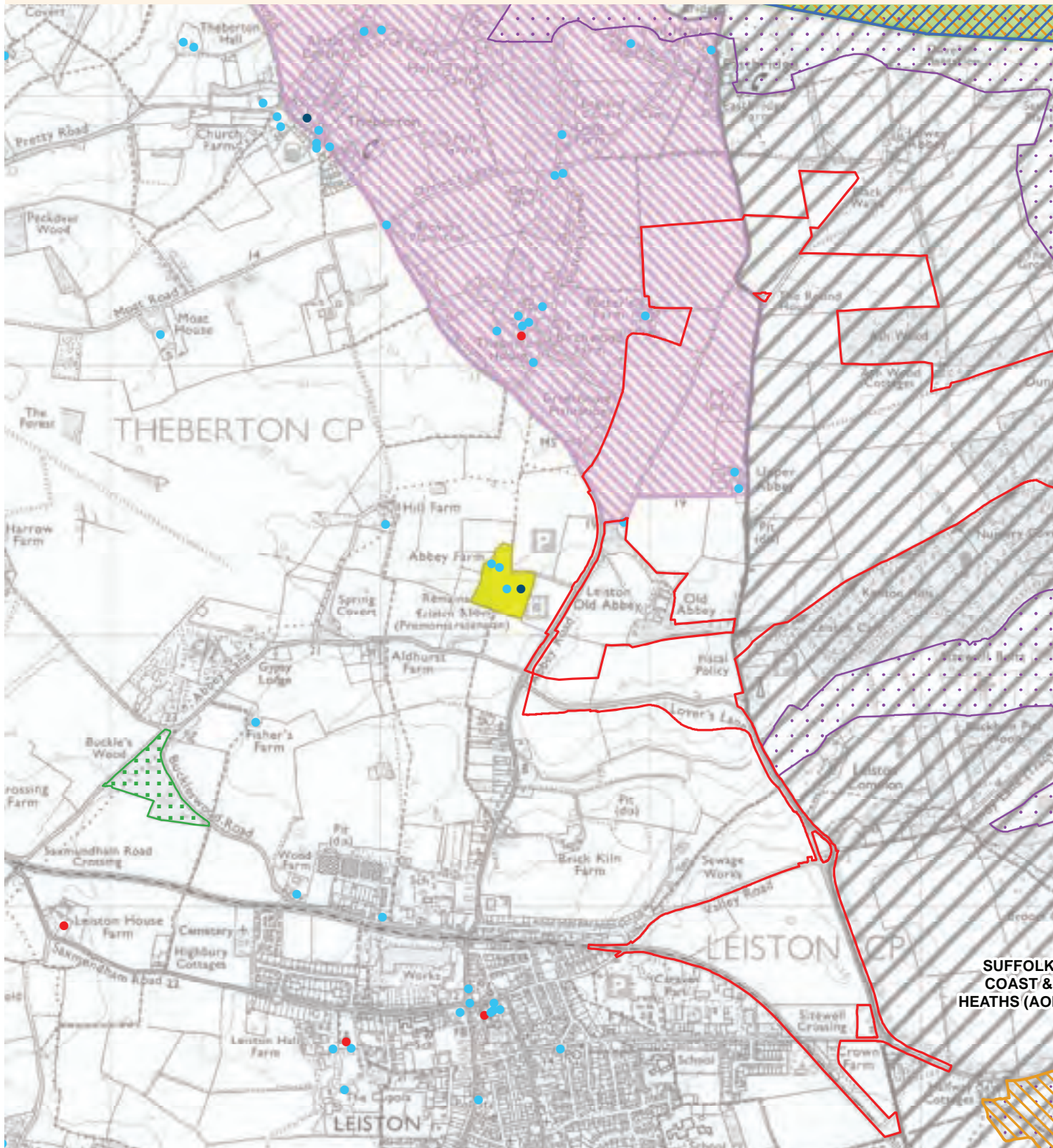
7.9.13. Some recreational resources are likely to see an increase in the numbers of people using them during the construction of Sizewell C, arising from two sources:

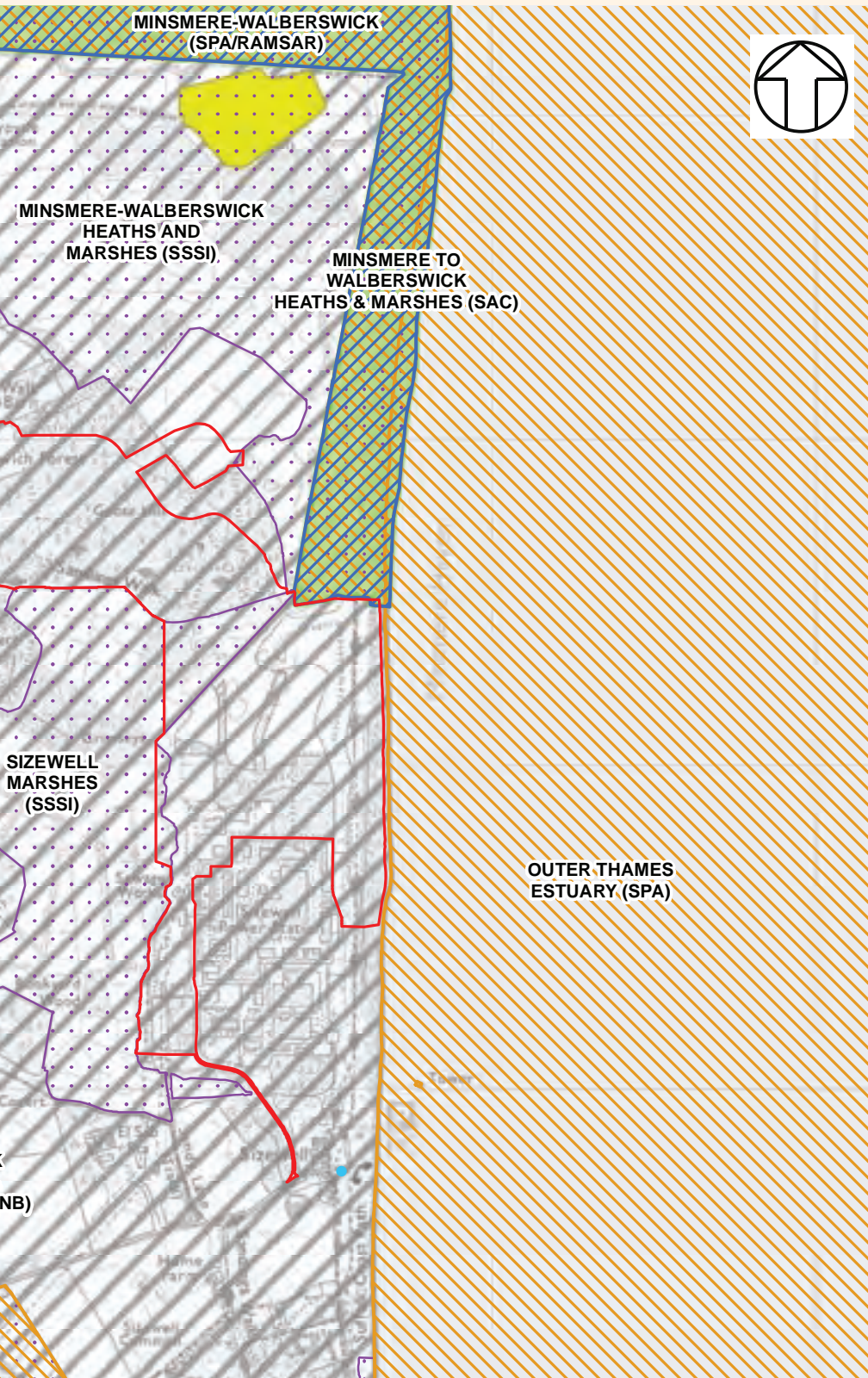
- surveys of users of existing outdoor informal recreational resources have been undertaken and it has been identified that some people are likely to be displaced to alternative recreational resources to avoid areas disturbed during the construction of Sizewell C; and
- people working on the construction of Sizewell C may use outdoor informal recreational resources.

7.9.14. The potential effects of increased numbers of recreational resource users at locations will be reviewed, to determine whether management measures need to be employed to control numbers and/or behaviour of people at those locations.













7.9.15. A draft rights of way diversion strategy has been prepared for the construction phase (refer to **Section 11 Highway Improvements**) and would be progressed in consultation with stakeholders.

Figure 7.56 Environmental designations and features





KEY

-  INDICATIVE MAIN DEVELOPMENT SITE BOUNDARY
- LISTED BUILDING
-  GRADE I
-  GRADE II*
-  GRADE II
-  ANCIENT WOODLAND
-  AREA OF OUTSTANDING NATURAL BEAUTY (AONB)
-  RAMSAR
-  SCHEDULED MONUMENT
-  SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
-  SPECIAL AREA OF CONSERVATION (SAC)
-  SPECIAL LANDSCAPE AREA
-  SPECIAL PROTECTION AREA (SPA)

7.9.16. Amenity and recreation considerations also play an important role in the development of the long-term operational phase masterplan. Once the construction phase is complete, the footpaths that would have been affected would be largely reinstated. Where it is not possible to reinstate the routes along the exact alignment of the former route, alternative alignments will be sought.

d) Historic environment

7.9.17. There is evidence of human activity in the area around Sizewell from the Prehistoric through to the Modern period, including the Second World War. The heritage resource includes potential buried archaeology and environmental deposits of archaeological interest both on and offshore, as well as designated Heritage Assets in the vicinity of the proposed development. These include the first and second Leiston Abbey sites, Grade II Listed Abbey Cottage, and Upper Abbey Farm and Barn. Designated heritage assets along the Suffolk Coast, where long distance views are evident, will also be considered, as will historic landscapes and seascapes.

7.9.18. Desk-based assessment, LiDAR and geophysical survey undertaken to date indicate that there is the potential for buried archaeology across the main development site. The nature, extent and importance of any surviving archaeological remains will be determined by a programme of trial trenching, and a suitable mitigation strategy will be agreed with SCC. This could involve mitigation by design, also known as preservation in-situ, or set-piece excavation and recording of archaeological remains, also known as preservation by record, or a combination of the two.

7.9.19. Construction of the main platform would require the removal of peat deposits which may contain evidence for human exploitation of the landscape dating back to the Mesolithic period. Palaeo-environmental investigations, including radiocarbon dating, have shown that these peats date from the early Mesolithic period with a later change to clays associated with estuarine expansion from the Bronze Age onwards. The thick peat deposits and high water tables have the potential to preserve organic remains, including archaeological structures such as wooden trackways and boats, which would otherwise decay in normal soil conditions. Geoarchaeological review of the extensive on-site geotechnical investigations, coupled with geophysical (resistivity tomography) studies and integrated deposit modelling, has revealed the structure and extent of the peat and clay deposits. From this it has been possible to model areas which may have the highest potential for human activity and archaeological remains. This is permitting the development of an archaeological excavation strategy to

target key locations and this is being incorporated into the design programme for on-site excavations, installation of the cut-off wall and dewatering of the main development site.

7.9.20. Historic landscape features such as field patterns, field boundaries, tracks and historic hedgerows would be altered by construction on the main development site. Accordingly, a series of mitigation measures would be agreed with the local authorities and Historic England. These are likely to include a strategy for excavating and recording any features of archaeological interest as well as sensitive design, landscape planting or screening.

7.9.21. Construction could potentially impact the settings of designated heritage assets, in particular the Leiston Abbey complex which is a Scheduled Monument and also comprises a number of Listed Buildings. The need to minimise impacts on the settings of designated assets is informing EDF Energy's plans for the construction phase. For example, since the Stage 1 consultation, the site entrance has been redesigned to move it slightly further east and limit land-take in order to reduce the scale of development near Leiston Abbey. Potential impacts on settings assets during the operation of the power station, particularly on assets along the coast, would be mitigated by design and landscaping wherever possible.

7.9.22. A marine desk-based assessment (DBA) has concluded that there is a medium to high potential for submerged offshore archaeological remains. There are also a number of known wreck sites, though none within the footprint of any of the proposed offshore developments. Multiple phases of offshore geophysical surveys have revealed two unknown shipwrecks off the Sizewell coast, as well as re-identifying known wreck sites, including the designated Dunwich Wreck site, and remains of the medieval Dunwich settlement to the north of the proposed development. Coring and geophysical surveys are revealing new information about the submerged landscape including offshore submerged river valleys and a continuation of the peat deposits found beneath the main site into the offshore zone. Ongoing offshore investigations will provide a greater understanding of the prehistoric landscapes along this area of the Suffolk coastline that were submerged by rising sea level since the last ice age. Appropriate mitigation protocols will be developed and agreed with Historic England for any impacts arising from the development.

e) Transport

7.9.23. The overall transport strategy for Sizewell C is set out in **Section 6 Transport**. Construction of Sizewell C would require the transport of large numbers of

construction workers and quantities of building materials and equipment. A proportion of this would come by road. As set out at the Stage 1 consultation it is anticipated that HGV deliveries to and from the site would be controlled to fixed routes and that these routes are along the A12 and B1122. Buses would also use this route to reach the site.

7.9.24. The main corridor for Sizewell C traffic would be the A12 between Ipswich and Lowestoft, much of which is dual carriageway. It is anticipated that Sizewell C traffic would not create capacity or congestion concerns on most of the road length, including both dual carriageway and single carriageway sections. It is anticipated that the greatest traffic impact during the construction phase would arise on the B1122, which is proposed as the access road to the construction site from the A12 for all HGVs and park and ride and direct buses.

7.9.25. Modelling work undertaken to date suggests that, even after taking into account the additional movements associated with Sizewell C construction, traffic on the B1122 would continue to flow freely throughout the day, including at peak hours and times of shift changeover. However, it is recognised that the scale of additional traffic on the B1122 is considerable and a concern to those who live close to the B1122 and who would be likely to be the most affected by Sizewell C traffic.

7.9.26. Transport modelling is continuing to evaluate the proposals for transporting materials and people to site and this model is helping to identify where, and what, mitigation measures might be required.

f) Noise and vibration

7.9.27. An extensive programme of baseline noise and vibration monitoring has been undertaken in order to further EDF Energy's understanding of the existing noise environment in areas that have the potential to be affected by the proposals. Since the Stage 1 consultations, and with the evolution of the construction and operational phase masterplans (**Figures 7.27** and **7.7**, respectively), EDF Energy has a better understanding of potential for noise and vibration effects on sensitive receptors including residential properties, ecological receptors, PRoW/permissive paths and amenity areas.

7.9.28. Noise modelling is being undertaken to understand the potential effects associated with construction activities throughout the duration of the construction phase. This includes consideration of rail movements importing and exporting construction materials, and use of the land to the east of the Eastlands Trading Estate during construction.

These models are informing the assessment of noise and vibration effects on both human and ecological receptors in the vicinity of the main development site. Marine noise is considered under marine ecology and fisheries.

7.9.29. Preliminary modelling of the construction activities suggests that during the initial stages of construction the principal sources would be from plant associated with earthmoving, surfacing and construction of buildings (e.g. excavators, bulldozers, cranes, steel erection and asphalt plant). Following the initial earthworks the principal noise sources would be from steel fabrication, vehicle movements and deliveries and from the concrete batching plant.

7.9.30. Mitigation is likely to include a selection of quieter plant and equipment, where practicable the creation of buffer zones, acoustic screening and bunds around the site. The preliminary noise models would be developed and refined as the proposals develop.

7.9.31. The preliminary modelling and analyses of traffic and rail movements associated with the construction of Sizewell are described in **Section 6** and **Section 8** respectively.

7.9.32. It is expected that operational noise levels would be low and are unlikely to be significantly different to that already experienced from the operation of Sizewell B. Operational noise levels would be controlled within agreed noise limits.

g) Air quality

7.9.33. The receptors that are being considered in the air quality assessment include locations around the main development site such as residential properties (for example at those in Theberton and Eastbridge), designated ecological receptors (such as the Minsmere to Walberswick SPA/SAC/Ramsar), designated PRoW/permissive paths and amenity areas (for example Sizewell Beach), and locations along the road network such as residential properties along the A12 and B1122.

7.9.34. The construction phase would have the potential to generate dust emissions from site clearance (soil stripping and excavation) and haulage of materials and spoil, and combustion emissions from on-site plant. Specific activities with high potential for dust generation (including spoil crushing and screening, and concrete batching) are likely to require an Environmental Permit, in order to undertake the works. Combustion emissions associated with on-site construction plant would be minimised through application of good working practices,

such as regular plant maintenance, minimisation of double handling and transport distances, and location of on-site plant away from sensitive receptors and boundaries.

7.9.35. As described in **Section 6 Transport**, the preliminary analysis of traffic emissions associated with the construction phase has been undertaken and indicates that there would be no locations anticipated to exceed any UK health-based air quality objective for nitrogen dioxide or particulates. However more refined assessment will be undertaken, particularly in relation to predictions of NO_x at the Stratford St Andrew Air Quality Management Area (AQMA), and consideration will be given to options for minimising impacts in areas of elevated background NO_x concentrations.

7.9.36. During routine operation of the power station air quality effects could arise from:

- combustion emissions of NO_x, SO₂, CO and particulates (including PM₁₀ and PM_{2.5}), from routine testing of emergency diesel generators; and
- traffic emissions (e.g. workers travelling to site) of NO_x, SO₂, CO and particulates (including PM₁₀ and PM_{2.5}).

7.9.37. Emissions to the air from the operational plant, such as the diesel generators, would be regulated by the Environment Agency and controlled in accordance with an Environmental Permit to be issued for their operation. The permit would specify emission limit values for pollutant releases to air, as well as ongoing monitoring requirements.

7.9.38. As the number of traffic movements during the operation of the power station would be significantly less than the numbers during construction, it is not anticipated that there would be significant adverse effects on air quality. However, this will be confirmed through modelling and assessment. A Travel Plan for the operational phase would seek to encourage the use of sustainable modes of transport, helping to reduce any impacts on air quality associated with operational traffic movements.

7.9.39. The assessment of air quality impacts from the construction and operational phases will inform the identification of mitigation measures, where necessary.

h) Soils and agriculture

7.9.40. Land within the main development site comprises arable land that is farmed by contractors who lease the land from EDF Energy, non-agricultural land that is managed by Suffolk Wildlife Trust on behalf of EDF Energy and woodland. Survey work undertaken to date has identified that the agricultural land within the main development site comprises Subgrade 3b (moderate quality) soils or lower.

7.9.41. EDF Energy's approach has been to prioritise the use of agricultural land for construction, especially the fields between Ash Wood and Kenton Hills which are largely visually screened. For areas of land that would be restored to agricultural use following the construction phase, appropriate measures would be taken to reduce effects on soil quality (e.g. appropriate soil handling during soil stripping, stockpiling and management). Detailed arrangements will be developed in consultation with relevant stakeholders, in line with established soil management principles. A soil management plan will be developed to detail these principles as well as to address the management of soils to be used for non-agricultural purposes, for example, habitat creation.

7.9.42. At the end of the construction phase, the agricultural land would be restored in accordance with the landscape strategy. Whilst some of the land needed temporarily for construction may be restored for agricultural use, the principal strategy for the main development site is to move away from intensive forms of agriculture to heathland and acid grassland which are likely to be maintained through grazing. Whilst this would represent a loss to agriculture, it represents an overall gain in terms of landscape and biodiversity.

i) Geology and land quality

7.9.43. Published geological records show that the solid geology beneath the main development site comprises Red Crag, part of a sequence of Crag deposits present along the Norfolk and Suffolk coastline. This is separated from the underlying Chalk by Palaeogene deposits, including London Clay (part of the Harwich formation) and the Lambeth Group. To the north of Sizewell B, in an area that was used as a compound for the construction of Sizewell B, the ground comprises re-worked Crag sand and beach deposits, and inert construction materials such as bricks, stone and concrete (known as 'made ground'). Surveys to date indicate that there is no evidence of significant contamination of the land in that area.

7.9.44. During construction, potential risks to construction workers and the environment from ground contamination is considered to be low, assuming that appropriate personal protective equipment is worn, ground gas protection measures are incorporated into the design, and established soil management principles are adopted.

7.9.45. The proposals would incorporate features to prevent ground contamination during the operational phase and would be audited regularly in order to ensure that all pollution control measures are working effectively.

j) Groundwater

7.9.46. The geology beneath the main development site comprises Red Crag and Chalk, which are designated as Principal Aquifers, separated by clay-rich Palaeogene deposits, including the London Clay. Principal Aquifers provide a high-level of water storage and support water supply and river flows on a strategic scale. The clay-rich Palaeogene deposits that separate the Chalk and the Red Crag at the main development site, and surrounding region, are considered to act as a confining layer for groundwater in the Chalk. Further to the west, where the Palaeogene deposits are absent, groundwater in the Chalk and the Red Crag Formation aquifers are likely to interact directly.

7.9.47. Monitoring to date has identified that groundwater flow in the Crag is to the east and towards the coast, with a component of groundwater discharge to the Sizewell Marshes SSSI and the Minsmere-Walberswick Heaths and Marshes SSSI. Monitoring has also identified good hydraulic continuity between groundwater within the peat and the surface water drainage system.

7.9.48. The main development site is located on the Waveney and East Suffolk Chalk and Crag groundwater body, which has been classified by the Environment Agency as being of Good Quantitative status but Poor Chemical status.

7.9.49. Construction of the power station would require dewatering of the main platform site. This has the potential to lower groundwater levels which could affect the Sizewell Marshes SSSI. In order to limit the effect of the dewatering activities, a cut-off wall would be constructed around the main platform site. The cut-off wall would reduce the volume of water that needs to be pumped and limit the geographic impact of dewatering. However, it would also act as barrier to groundwater flow potentially resulting in a rise in groundwater levels outside the wall, and a local change in flow direction. Initial numerical modelling has indicated that the rise in groundwater levels is likely to be

localised and would not extend far from the cut-off wall. Further 3D numerical groundwater modelling will assess where changes from baseline groundwater conditions are expected and, if considered unacceptable, further mitigation will be developed. The 3D numerical model will also be used to assess this mitigation. Construction activities that have the potential to affect groundwater include changes in infiltration resulting from land use changes, excavation of soils with the potential to mobilise contaminants, stockpiling of soils with the potential to release contaminants, and backfilling of the borrow pit used to win fill material with peat and alluvium from the main development site. Assessment work, using the 3D numerical model, will continue to quantify these potential effects and identify mitigation measures as required. These will include ensuring that the surface water drainage system employed would infiltrate water, either where it falls or via Water Management Zones where water would attenuate after being received by the engineered drainage.

7.9.50. The 3D numerical groundwater model will be linked to a 1D surface model so that changes in surface water as a result of changes in groundwater can be assessed. The model outputs will also be used to assess potential changes in hydrochemistry that may arise from any changes in the groundwater and surface water regimes.

7.9.51. Co-ordinated studies have demonstrated a close link between groundwater, surface water and hydro-ecology. For example, there are a number of receptors (flora and fauna) that are considered to be sensitive to changes in groundwater and surface water levels, flows and chemistry. The numerical models have been set-up such that the model outputs can be used to assess any effects on these receptors.

7.9.52. Monitoring of groundwater and surface water level, flow and quality would continue throughout the construction and operational phases. Monitoring points would be included at locations both within and on the margins of the proposed development to allow a comprehensive monitoring network to be maintained.

k) Surface water and flood risk

7.9.53. A number of watercourses are present within the Sizewell area, but relatively few are located within the main development site. Of particular importance is the Sizewell Marshes SSSI. This area contains a series of interconnected drainage ditches, which can be grouped into two systems situated to the north-west and south-east of Sandy Lane.

The Leiston Drain, which is classified as a main river, runs along the northern edge of the SSSI and discharges ultimately to the sea at the Minsmere Sluice to the north of the main development site. The Sizewell Drain, which runs along the eastern boundary of the SSSI, would be re-aligned to allow the SSSI crossing to be constructed.

7.9.54. There is potential for an effect on surface water flows and quality which will need to be mitigated through detailed design. Pollution resulting from the mobilisation of sediment, construction materials, fuels and lubricants during flood events, or the collection and discharge of foul water from construction compounds, could impact on the quality of water, whilst increases in impermeable areas, changes to topography on the site and the realignment or redirection of existing drains and ditches could all lead to an increase in surface water run-off and flows. A linked groundwater – surface water model is being developed to assess potential changes to the surface water drainage system. Expert judgement will be used to assess any change to the surface water drainage system.

7.9.55. In order to control surface water run-off during construction, and reduce the volume of surface water that would require collection, good practice measures following the principles of SUDS would be adopted. For the remaining flows, a temporary drainage system would be constructed to drain surface water run-off so that it would not impact on the wider hydrology of the area. Any discharges from construction activities would be managed via Water Management Zones which will be designed to provide water quality control and provide for infiltration to groundwater at greenfield run-off rates. These measures would be agreed with the Environment Agency. During the operational phase, the engineered drainage system would provide for surface water to be discharged to the sea via the cooling water infrastructure.

7.9.56. Best practice techniques would be adopted in order to reduce the risk of impacts on water quality. For example oil interceptors would be installed at sites where the risk of hydrocarbon contamination is high and, in order to control and reduce the impact of accidental pollution spills as far as possible, incident control plans would be developed in consultation with the regulators.

7.9.57. The development would result in a small area of the Sizewell Marshes flood plain becoming part of the main power station platform. The flooding implications will be assessed in a parallel Flood Risk Assessment (refer to **Section 12 Related Assessments and Approaches**).

I) Coastal geomorphology and hydrodynamics

7.9.58. EDF Energy has been studying and monitoring the marine environment in the area of Sizewell for many years, most recently over the last 8 years through working closely with the CEFAS based locally at Lowestoft. These studies are helping us to understand the existing environment in very great detail and are directly influencing considerations of the design of important elements of the power station (e.g. the cooling water system, coastal protection and flood defence arrangements), and how best to consider proposed cross-shore structures such as a BLF or a jetty. As well as looking back over all the available data in the relevant sciences for the area, these studies have also established a set of new monitoring methods deliberately tailored to the needs of Sizewell C.

7.9.59. Construction of the marine elements of the power station and their subsequent use could potentially have effects on the coastal processes that determine the form of the local coast. The elements of the main development site that could have effects on coastal geomorphology and hydrodynamics are:

- the construction and operation of a temporary construction discharge route to sea;
- the construction and operation of cooling water infrastructure (including cooling water intake and outfall headworks on the seabed, and the outfall associated with a fish recovery and return system);
- the construction and operation of a BLF to receive deliveries of AILs by sea throughout the power station's operational life;
- the construction and operation of flood defence and coastal protection measures; and
- the construction and operation of a temporary jetty for the import/export of construction materials and AILs.

7.9.60. The receptors and resources that are of potential concern may be defined as:

- the Sizewell Bay shoreline (position, shape, beach profile and whether erosion or accretion is occurring);
- longshore sediment transport, primarily along the nearshore bars – the jetty and BLF may affect sediment transport in the vicinity of Sizewell C and potentially further south on the Thorpeness frontage and ultimately to Orford Ness (although based upon the historic

evidence, impacts at such spatial ranges are considered highly unlikely); and

- the geomorphology of the greater Sizewell Bay.

7.9.61. In order to guide the design for these marine elements, EDF Energy would apply a coastal management strategy that seeks to minimise the impacts on the coastal environment of the main development site. In doing so it would apply engineering designs that work with the physical processes acting on the Sizewell frontage, backed up by robust monitoring and management arrangements. This strategy has evolved on the basis of EDF Energy's own knowledge of the site frontage in response to feedback from the Stage 1 consultation and ongoing engagement. Its application would accord with the policies of the local Shoreline Management Plan and the coastal processes that are at work locally, and the range of possible future scenarios that might develop as a result of these processes.

7.9.62. In preserving the form and function of the local coastline as much as possible, the wider impacts to coastal protection, amenity and aesthetic functions would be limited. Application of that strategy would also establish an appropriate governance mechanism for monitoring, managing and, where necessary, mitigating any observed or predicted impacts.

7.9.63. At this stage in the development, neither the relevant scientific studies nor the associated engineering design considerations have been drawn to a conclusion. As the Project progresses, further detailed design work will be undertaken to determine the optimum design for the marine elements of the power station.

m) Marine water and sediment quality

7.9.64. Extensive investigations have been carried out in the Sizewell area over the last several years in order to define current marine water and marine sediment quality. A series of numerical hydrodynamic models have been developed and validated, using field data, to permit a detailed understanding of tidal flows and local dispersion patterns. In addition, studies are continuing into the potential effects of the various chemicals that might be discharged, with Environment Agency permission, to the marine environment during construction and operation. These studies are considering both detailed aspects of the chemistry of local seawater and potential toxicological effects on local marine species.

7.9.65. The construction, commissioning, operation and maintenance of the power station could potentially have

effects on local marine water and sediment quality. The elements of the main development site that could have impacts on these aspects of the local environment are:

- construction and operation of a temporary construction discharge route to sea;
- construction and operation of cooling water infrastructure (including cooling water intake and outfall headworks on the seabed, and the outfall associated with a fish recovery and return system);
- construction and operation of a BLF to receive deliveries of AILs by sea throughout the power station's operational life, including any associated dredging activities;
- construction and operation of a temporary jetty for the import/export of construction materials and AILs, including any associated dredging activities; and
- discharges to sea both during construction and operation which may include surface water drainage containing suspended sediment, contaminants and treated sewage effluent, with station operation involving the recirculation of seawater and its discharge to sea, together with process chemicals, at an elevated temperature.

7.9.66. The receptors and resources that are of potential concern may be defined as:

- the receiving water quality within the water bodies both within and bordering Sizewell Bay; and
- the quality of sediments on the seabed local to Sizewell.

7.9.67. The potential and degree to which any of these concerns might be realised is being assessed, with CEFAS support, against both the existing water quality baseline and objectives for the relevant water bodies using the Environment Agency's approved methodology. Any discharges of concern will be assessed in detail against relevant environmental quality standards, using the modelling and other assessment tools that have been developed. In addition, the impact of the proposed Sizewell C thermal discharges on existing dissolved oxygen and un-ionised ammonia concentrations in the receiving water will also be assessed.

n) Marine ecology and fisheries

7.9.68. The marine ecology baseline at Sizewell is being characterised based on the results of various studies carried out at EDF Energy's behest by CEFAS since 2008. These have included extensive studies of seabed habitats, plankton

and local fish populations. Advantage has been taken of the existing operation of Sizewell B to record routine cooling water screen catches of fish and crustacea over that period, allowing for a very detailed understanding to develop of local species composition, abundance, and the age groups and life stages of the various fish involved.

7.9.69. The potential operations described in both of the preceding sections (on coastal geomorphology and hydrodynamics, and marine water and sediment quality) all have the potential for some degree of impact on the local marine ecology. The potential for any resultant impact is being assessed as understandings of detailed engineering design and construction methodology develop. One example is the potential for underwater noise propagation during construction. This is being considered in the context of extensive acoustic surveys for marine cetaceans, knowledge of the local fish populations and species specific sensitivities, and the use of a locally validated noise dispersion model that permits the range and degree of possible effects to be measured.

7.9.70. During the operation of the power station, abstraction of the large volumes of water required for cooling would result in mortality to fish and invertebrates captured ('impinged') on cooling water screens and passing through the cooling water system ('entrainment') before being returned to sea. This could potentially result in effects to wider marine populations, the food chain of protected species and commercial fisheries. In addition, the discharge would result in a thermally buoyant, tidally oscillating plume and this has a potential impact on both organisms present in the area and others, such as migratory fish, that might be seeking to pass the site. Assessment of these potential effects is continuing. Impingement and entrainment predictions for Sizewell C and Sizewell B, together with assessments of the potential effects, are being completed for scrutiny by the relevant authorities. These assessments will develop an understanding of the various means of mitigation that would be provided in the design of the Sizewell C cooling water system, including the placement of the cooling water outfall structures some distance offshore, the strategy to be employed to maintain control of biological fouling within the cooling water circuits, the installation of acoustic fish deterrence measures and the use of a fish recovery and return system.

o) Navigation

7.9.71. The waters off the Sizewell coast are used by both commercial and recreational vessels. Commercial navigation activity comprises various vessel movements and activities at varying distances offshore, including

cargo vessels, passenger vessels and tankers using the principal east coast ports and passing southwards to the Dover Strait and ports beyond. Recreational navigation tends to be highly seasonal and generally restricted to daylight hours and includes various recreational forms of watercraft, including sea kayaking, canoeing, sailboarding, dinghy and other small boat sailing, cruising under motor and sail, and personal watercraft use.

7.9.72. The marine infrastructure proposed for Sizewell C, including the cooling water infrastructure, the temporary jetty and the BLF, could affect the safe navigation of commercial shipping and recreational craft in a number of ways during its construction and operation. Key considerations include vessel-to-vessel collision risks, ship to structure collision risks and the re-routing of vessels for the construction works. Changes to navigation risks could influence socio-economic activities (e.g. commercial fishing) and amenity and recreation (e.g. sailing).

7.9.73. A Navigational Risk Assessment is being conducted with the required stakeholders in order to determine these risks and will inform the design of the marine infrastructure (e.g. the inclusion of aids to navigation such as marks, lights and other aids). It is envisaged that a number of risk control measures will be adopted as standard control measures for navigation hazards, including communications measures (e.g. Notices to Mariners), information measures (e.g. Admiralty Charts) and management measures (e.g. exclusion zones).

p) Radiological

7.9.74. Studies carried out to date indicate that levels of radioactivity and the concentration of radionuclides measured in soil, freshwater (groundwater and surface water resources) and marine waters around the main development site are comparable to background levels and below the levels that would present a hazard to human health.

7.9.75. A radiological impact assessment will assess the potential impacts from the proposed development against recognised radiological protection standards for a specified range of human and non-human receptors. Mitigation measures will be identified as appropriate and will likely include design and management controls in line with Best Available Techniques. The operations of the nuclear power station would be regulated by the Environment Agency and an environmental permit would be required, which would include a requirement to undertake monitoring of discharges.

7.9.76. It should be noted that no new radioactive materials would be generated during the construction phase for Sizewell C. The technology and techniques for minimising the discharge of radionuclides into the environment are embedded in the design and specification of the UK EPR™ nuclear reactor that would be used for Sizewell C. The Environment Agency and the ONR carried out a rigorous and in-depth assessment of the reactor design and expressed satisfaction that that it meets high standards and regulatory expectations on safety, security and environmental effects.

q) Socio-economics

7.9.77. Sizewell C would be one of the largest energy infrastructure projects in Europe, requiring a construction workforce of around 5,600 people at the peak of the construction phase. EDF Energy has made this estimate based on the skills packages required to deliver the different elements of the Project and output per worker in these skill groups, and feedback from contractors on the Hinkley Point C Project and other major Projects in Europe. More detail is included in **Section 5 Socio-economics**.

7.9.78. In order to understand the effect of a peak construction workforce of 5,600 people in the area, EDF Energy has started to develop a 'workforce profile'. This estimates the total number of people required, by skill level, at each stage of the project, and helps to develop further assumptions about the number of people who would be sourced from the existing population ('home-based') and how many people would move to live temporarily in the area ('non-home-based'), the type of accommodation they would look for, and where they would be likely to live (refer to **Section 5 Socio-economics**).

7.9.79. Sizewell C would support jobs and economic activity in the area for many years to come. However, EDF Energy recognises that a construction project of this size could have a considerable effect on local communities, public services and accommodation. EDF Energy will continue to engage with local authorities and other relevant stakeholders to identify the extent to which any likely significant effects can be identified, managed and avoided or mitigated as part of the application for development consent.

8. Rail

8.1. Introduction

8.1.1. This section sets out information on EDF Energy's proposals for the use of rail in the delivery of freight during the construction of the Sizewell C Project (the Project). Freight deliveries would include a range of materials such as aggregates, cement and reinforcing steel, as well as containerised goods.

8.1.2. As set out in **Section 6 Transport** and **Section 2 Vision and Objectives**, EDF Energy's overall transport strategy for the Project seeks to take account of the sensitivity of the local highway network, with opportunities sought to limit the traffic and amenity effects of transporting goods and people, through the use of non-road based transport, where feasible.

8.1.3. Work is on going to evaluate the capability of the options for sea and rail deliveries, and to determine the optimum delivery scenario and the infrastructure which would be required to support it. As described in **Section 6 Transport**, both 'marine maximised' and 'rail maximised' scenarios are being evaluated. Both scenarios would involve the use of the existing railhead located south of King George's Avenue (Sizewell Halt) to cater for the delivery of freight prior to the availability of other infrastructure, whether that be marine or rail infrastructure. In addition, EDF Energy is also discussing with Network Rail the requirement for upgrades to the Saxmundham – Leiston branch line and the East Suffolk Line to support the rail freight requirements of the Project.

8.1.4. The use of marine or rail infrastructure to deliver freight would remove significant numbers of heavy goods vehicles (HGVs) from the road network. A single freight train could remove around 50 HGV deliveries from the road network. During the main construction phase, assuming five rail deliveries a day, this would equate to around 250 HGV deliveries (500 movements each way) to the main development site being removed from the road network.

8.1.5. In summary, this section provides the following information on the potential rail infrastructure:

- **Section 8.2** outlines the requirements for rail infrastructure to support the construction of Sizewell C;
- **Section 8.3** summarises the options presented at the Stage 1 consultation;

- **Section 8.4** describes the preferred options in this Stage 2 consultation and the rationale for selection;
- **Section 8.5** details the green rail route option, including the construction and operational considerations and preliminary environmental information. This section details the green rail route option for a rail line extension into the main development site. The section of the green rail route option within the main development site (i.e. works east of the B1122) is described in **Section 7 Main Development Site**;
- **Section 8.6** details the option for a rail terminal on land east of the Eastlands Industrial Estate, including the construction and operational considerations and preliminary environmental information;
- **Section 8.7** details the proposals for early years use of the existing railhead located south of King George's Avenue (Sizewell Halt);
- **Section 8.8** outlines potential upgrades to the Saxmundham – Leiston branch and East Suffolk Line; and
- **Section 8.9** sets out the next steps.

8.2. Construction rail requirements

a) Early years use of Sizewell Halt

8.2.1. In order to maximise the use of rail as part of the freight management strategy, EDF Energy would make use of the existing Sizewell Halt railhead located south of King George's Avenue (Sizewell Halt) during the early years of the construction phase. Some potential amendments to the layout would be required to facilitate deliveries by rail during the early years of the construction phase.

8.2.2. Sizewell Halt is located on the branch line that formerly ran from Saxmundham as far as Aldeburgh. More recently it has been used only for infrequent freight trains associated with the transport of spent fuel from the decommissioning of the Sizewell A power station.

8.2.3. The current rail terminal has insufficient capacity to fully meet the requirements for rail-delivered freight during the construction of the Project – it could only be served by a maximum of two trains per day. The limited size of the existing railhead means that only one train at a time can be unloaded. Freight delivered to Sizewell Halt then needs to be transferred by HGV along Lover's Lane to the site.

8.2.4. Use of Sizewell Halt during the early years is anticipated to be required for 12-18 months, prior to the availability of other rail infrastructure. However, if it were determined to progress a marine maximum scenario, Sizewell Halt could provide back-up capacity for the delivery of freight, for example in times when the weather disrupts the use of the marine infrastructure.

b) Main construction phase

8.2.5. Freight trains would be able to carry a range of materials during the various stages of the construction phase. The freight management strategy for the Project envisages that up to five freight trains (10 movements) per day would be required during the peak construction phase. EDF Energy is considering the following rail options to support the main construction phase:

- The construction of a temporary rail extension directly into the main development site alongside the contractors' compound area with a supporting on-site rail head, allowing rail freight to be brought directly, and efficiently, to its point of use. This temporary rail extension would branch off the existing Saxmundham - Leiston line to the west of Leiston.

A rail extension and rail head directly serving the main development site would require an unloading area and associated handling machinery to transfer materials to vehicles for onward distribution within the site. **Section 7 Main Development Site** provides more details regarding the layout of the main development site.

- The use of an existing line between Saxmundham and Leiston, and construction of a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate, with onward delivery to the main development site by HGV.

The new rail terminal on land east of the Eastlands Industrial Estate would also include the necessary space and facilities required to off-load freight from incoming trains. The freight would then be transported to the main development site by HGV. The rail terminal would provide sufficient space for the rail operations themselves, as well as for the storage of materials prior to being loaded onto vehicles. Welfare and administrative facilities associated with the rail operations would also be required.

8.3. Options presented at Stage 1 consultation

8.3.1. In its Stage 1 consultation EDF Energy presented the following options for using rail to transport freight to and from the main development site during the main construction phase:

- three options for extending the Saxmundham - Leiston branch line direct into the main development site to a new rail head (refer to **Figure 8.1**):
 - a blue rail route;
 - a green rail route; or
 - a red rail route; and
- a new rail terminal on land east of the Eastlands Industrial Estate, with onwards transfer of materials by HGV to the main development site (refer to **Figure 8.2**).

8.3.2. The Stage 1 consultation identified that, at that time, the green or red rail routes were preferred over the blue rail route. At that stage the blue rail route was not preferred as it was considered to have a visual impact on surrounding countryside and would need to enter the main development site at the preferred location for the accommodation campus. It still remains the case that the blue rail route is not preferred for the reasons set out in **Section 8.4**.

8.4. Rationale for rail selection

8.4.1. Since the Stage 1 consultation EDF Energy has continued to discuss with Network Rail issues relating to the scheduling of freight trains and the infrastructure on the wider local rail network needed to support effective use of rail. EDF Energy has also assessed each of the options against the following criteria:

- consultation responses;
- environmental considerations;
- construction and operational requirements; and
- planning policy.

a) Consultation responses

8.4.2. A wide range of views were expressed in relation to the three rail extension route options, with no clear preference emerging. Those favouring the red rail route tended to consider that because it was the shortest of the routes it would have the least effect on surrounding

Figure 8.1 Potential route options for rail line extension presented at Stage 1 consultation

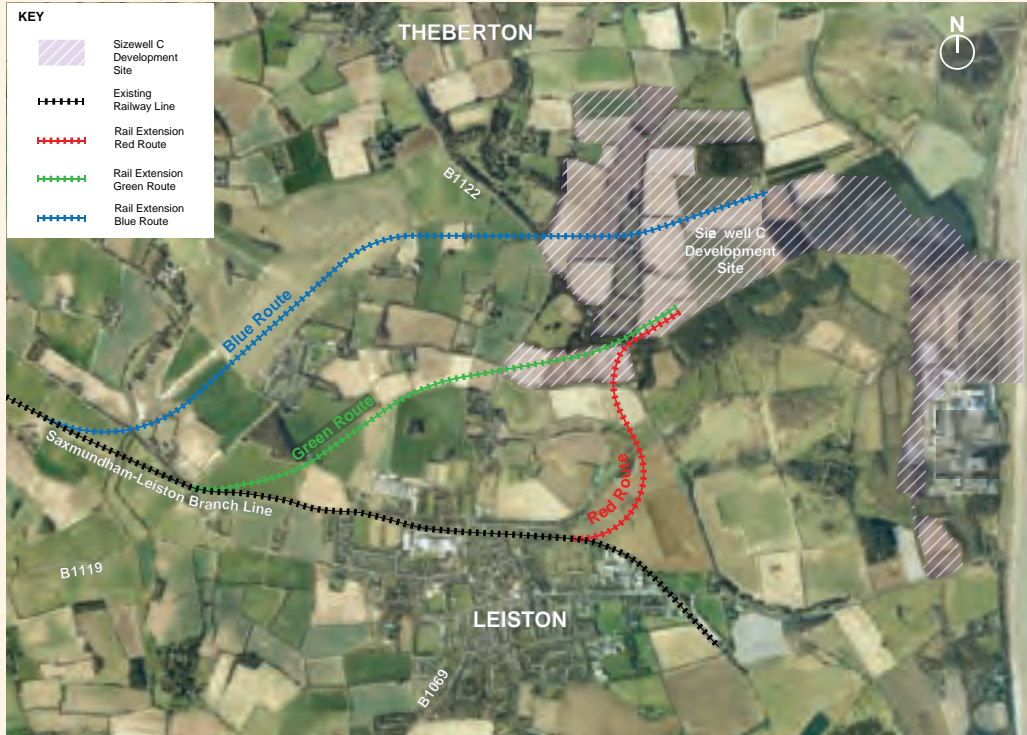


Figure 8.2 New rail terminal and freight laydown area on land east of the Eastlands Industrial Estate presented at Stage 1 consultation



countryside. However, some raised concerns over the potential for noise and vibration impacts arising from freight trains passing through Leiston. This was also cited as a concern for the proposed new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate. Conversely, those in favour of the blue or green rail route options generally stated that these options avoided any concentration of residential properties in Leiston. However, some concerns were raised regarding the potential for visual effects as they would run through open countryside.

8.4.3. While consultation responses from members of the local community were generally supportive of the green and blue rail route options, responses from statutory consultees and environmental organisations were more mixed. Many of those respondents sought more information about the options and raised concerns about the potential for heritage and other environmental effects. Those consultees indicated a preference for the more limited development associated with a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate. Heritage impact concerns were raised in relation to all three of the rail route options, where the proximity of the route options to Leiston Abbey was seen as an important consideration.

b) Environmental considerations

8.4.4. A range of different environmental considerations are relevant to the rail options presented at the Stage 1 consultation. The principal considerations relate to: terrestrial ecology; noise and vibration; landscape and visual; and historic environment.

i. Terrestrial ecology

8.4.5. The ecological effects associated with the green and blue rail route options, outside of the main development site, are considered likely to be relatively minor. While detailed ecological surveys have not yet been completed, the rail route options cross arable farmland that is not subject to any ecological designations and is anticipated to be of relatively low ecological value.

8.4.6. The red rail route option, however, is incompatible with the EDF Energy Aldhurst Farm Habitat Creation Scheme (the Habitat Creation Scheme), to the south and west of Lover's Lane. The Habitat Creation Scheme is being created to mitigate the loss of Site of Specific Scientific Interest (SSSI) habitat, which would occur as a result of the permanent Sizewell C development. The initial works to create the wetland and heathland habitats were completed in 2016, to allow for the habitats to establish prior to the potential future loss of the SSSI.

8.4.7. Within the main development site the main issue of potential ecological concern relates to potential disturbance from noise and lighting to bats within the retained woodland (Kenton Hills) to the south, in particular from the red and green rail alignments. Any such effects are considered within the context of EDF Energy's wider proposals for construction activities and related development within the main development site. Refer to **Section 7 Main Development Site**.

8.4.8. The option of a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate is not considered to give rise to any significant ecological concerns. Development at this location would be within farmland of low ecological value.

ii. Noise and vibration

8.4.9. EDF Energy has undertaken a preliminary assessment of the potential noise and vibration impacts of freight train movements. This indicates that adverse noise impacts would be likely from passing freight trains on residential properties situated close (approximately 40-50m) to the railway line for all options. However the frequency of those impacts would be limited to a maximum of five deliveries per day (10 movements), lasting a small number of minutes at most, as the train passes.

8.4.10. Rail noise and vibration impacts would be a greater issue with respect to the red route rail option, and the option of a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate. This is because train movements along the existing rail line would route through Leiston, where there are a number of properties close to the rail line. There is the potential that unloading operations and HGV movements at the rail terminal on land east of the Eastlands Industrial Estate could give rise to noise impacts at some residential properties. However, unloading activities are expected to be located some 250-500m from the nearest residential property, and impacts could potentially be mitigated by some form of screening (e.g. landscape bunds). HGV movements between the rail terminal and the main development site, along Lover's Lane, could also have the potential to result in impacts to sensitive receptors.

8.4.11. By contrast, the blue and green rail route options do not run close to any comparable concentrations of residential properties. As such, fewer properties are likely to be impacted. These route option alignments are, however, closer to the Cakes and Ale Caravan Park (in particular the blue rail route option) and the Pro Corda music school at the second Leiston Abbey site. The greater distance

between these receptors and the railway line means that noise impacts associated with these options would be lower and not likely to be significant. Furthermore there is greater opportunity to provide some form of screening between these receptors and the rail route options.

8.4.12. All rail route options require use of the Saxmundham - Leiston line, either in part or to the full extent. There are a small number of residential properties located close to the section of the line after it branches at Saxmundham towards Leiston (west of Leiston). These properties could potentially be impacted by noise from the Sizewell C freight trains, irrespective of which of the rail route or rail terminal options are pursued.

iii. Landscape and visual

8.4.13. The landscape and visual impacts associated with a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate would be relatively limited, as development would be restricted to one area of currently arable farmland adjacent to an existing industrial estate. The site also benefits from hedgerow screening along its boundaries.

8.4.14. Each of the rail extension options could potentially give rise to significant landscape and visual impacts. These routes would cross areas of open countryside and generate some associated earthworks and highway works.

8.4.15. Due to the undulating terrain it would cross, the red rail route option would require major earthworks and generate relatively large volumes of spoil, despite its shorter length relative to the other route options. EDF Energy would seek to incorporate all spoil into landscaping scheme, thereby retaining the spoil on-site.

8.4.16. The blue and green rail route options both cross areas of open countryside. Consequently, this would require some earthworks and associated spoil storage, which would be incorporated into landscaping along the route, albeit earthwork volumes could be reduced through design.

8.4.17. The blue rail route is approximately 1.3km longer than the green rail route and therefore bisects a greater area of open countryside. The fields crossed by the blue rail route are generally larger, with fewer intervening landscape features such as boundary hedgerows and trees. In comparison, the green rail route crosses an area of countryside characterised by smaller fields and more undulating topography, which is potentially more sensitive to change.

iv. Historic environment

8.4.18. The main issue of significance relates to the potential for impacts on the setting of the Scheduled Monument and associated Grade I and II listed buildings of the second Leiston Abbey site.

8.4.19. A new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate would be sufficiently distant from the second Leiston Abbey site to avoid impacts on this asset. Similarly, EDF Energy considers that the alignment of the red rail route option would be sufficiently distant from the Abbey to avoid harm to its setting.

8.4.20. Both the blue and the green rail route options would run much closer to the Abbey giving the potential for change to its setting. This could be exacerbated when taken in-combination with the works on the main development site, in particular the site entrance and accommodation campus. It is considered, in this context, that the impact on the second Leiston Abbey site would be greater as a result of the green rail route compared to the blue route. This is because of its proximity to, and relative visibility from, the Abbey ruins. These ruins have the highest designation (i.e. Scheduled Monument/Grade I listed building) relative to the Grade II listed buildings which lie closer to the blue route.

8.4.21. As the rail use is only required to support the construction of the Project, any harm to the setting of the Abbey would only be temporary.

c) Construction and operational requirements

8.4.22. From a construction and operational perspective, the rail infrastructure needs to be of sufficient capacity and flexibility to allow efficient delivery of freight by train. It also needs to avoid, or minimise, wider negative impacts on the layout or operation of the main development site. A new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate would be the most cost-effective and quickest to construct. This, however, would require double handling of materials, which would be off-loaded from the trains onto HGVs for transfer to the main development site along Lover's Lane.

8.4.23. Extending the rail line direct into the main development site would be more efficient as it would avoid the double handling of materials and limit traffic on Lover's Lane. As illustrated in **Figure 8.1**, the green and red rail routes would cross the B1122 south of the main site entrance and follow the alignment of the southern boundary of the construction area to the

batching plant area at the eastern end of the site (i.e. within the area identified for 'common user facilities'). This alignment within the main development site would ensure minimum interference with other site activities.

8.4.24. By comparison, the alignment of the blue rail route would enter the site further north. It would have a greater impact on the layout and efficiency of the main development site, because:

- the security checking area for the blue rail route, at the point it enters the main development site, would require a significant area of cutting. This would reduce the amount of available land within the site and significantly increase the volume of excess spoil that would need to be stored within the construction area;
- the route alignment would bisect the land identified for an accommodation campus. The loss of land would be likely to rule out the on-site accommodation campus layout options, as there would be insufficient space;
- within the main development site, it is not possible for the route to fully align with the northern boundary; it would bisect the stockpile area, the haul road, compound areas and tree belts to be retained. This would potentially result in the sterilisation of some parcels of land within the site. The alignment would reduce the efficient use of land, and potentially lead to a requirement for additional construction land elsewhere; and
- the route alignment would not offer a satisfactory arrangement for securing direct access to the concrete batching plant, which would be one of the key efficiencies to be derived from extending the rail line directly into the main development site.

8.4.25. Unlike the blue rail route option, the green and red rail route alignments would be able to run along the southern boundary. This would make much better use of the space available within the main development site and would not bisect or sterilise key construction areas.

d) Planning policy

8.4.26. The National Planning Statement (NPS) for Energy EN-1 (Ref. 1.1) recognises that construction of a nationally significant energy infrastructure project may give rise to substantial impacts on the surrounding transport infrastructure. Consideration and mitigation of such impacts is an essential part of the Government's policy objectives for sustainable development. In this context, NPS EN-1 provides strong policy support for the use of water-borne or rail transport, where it is cost-effective over

road transport. EDF Energy's consideration of developing rail infrastructure to support the construction of the Project, to facilitate efficient construction and reduce HGV movements, accord with planning policy and guidance.

e) Selection of options

8.4.27. As noted in the preceding sections, the different rail options give rise to different efficiencies in the construction of the Project, as well as different environmental effects. No option would meet all project requirements whilst avoiding giving rise to any significant environmental impacts. In this context, EDF Energy has formed an overall judgement on the respective merits of each option and the relative weight to attach to each issue.

8.4.28. EDF Energy has reached a view that the blue and red rail route options should not be considered further. The green rail route option (refer to **Section 8.5**) and rail terminal on the land to the east of Eastlands Industrial Estate (refer to **Section 8.6**) have been retained for further consultation and evaluation at this stage.

8.4.29. The key considerations in reaching this view are:

- Blue rail route: Whilst the blue route would allow for rail freight to be delivered directly into the main development site, in comparison to the green and red rail route options, it would significantly impact on the efficiency of the construction site. In addition, it would give rise to landscape and visual effects within open countryside; and in-combination with the main site entrance and accommodation campus has the potential to harm the setting of the second Leiston Abbey site. This option is, therefore, not considered further.
- Red rail route: This route would allow for rail freight to be delivered directly into the main development site. However, this option is considered to be incompatible with the Habitat Creation Scheme at Aldhurst Farm, which has been created to mitigate the loss of SSSI habitat as part of the Sizewell C Project. Furthermore, this option would require routing of trains on the existing branch line through Leiston, which would give rise to noise and vibration effects for some residential properties in Leiston. This option is, therefore, not considered further.
- Green rail route: This route would allow for rail freight to be delivered directly into the main development site. It is recognised that the green rail route option has the potential to give rise to landscape and visual impacts within open countryside, and potential heritage impacts in relation to the setting of the second Leiston Abbey site. However, it is considered that design measures

could mitigate and reduce these impacts. Furthermore, while the green rail route would be in operation for the duration of the main construction phase, it would only be temporary development, thus any landscape and heritage impacts would be temporary.

- New rail terminal: The option of a new rail terminal and freight laydown area on land east of the Eastlands Industrial Estate would be cost-effective to construct and operate but would require the double handling of materials. This option avoids most of the environmental impacts of the green rail route, although there would be significant noise and vibration impacts for some residential properties in Leiston.

8.5. Green rail route option

8.5.1. This section details the green rail route option up to the main development site detailing: site description; masterplan; construction and operational considerations; and preliminary environmental information. The section of the green rail route option within the main development site (i.e. works east of the B1122) is described in **Section 7 Main Development Site**.

a) Site description

8.5.2. The green rail route option extends in a north-easterly direction from the existing Saxmundham - Leiston branch line, approximately 1.5km west of Leiston, into the main development site (refer to **Figure 8.3**).

8.5.3. There are a number of small settlements, individual properties and isolated farmsteads near to the green rail route option. The land within and around the green rail route option is predominantly arable farmland (Grades 2 and 3) interspersed with scattered woodlands, copses and hedgerows. The route option lies within two landscape character areas, the 'ancient estate claylands' and the 'estate sandlands'. The former is characterised by features such as an organic pattern of field enclosures, straight boundaries, where the influence of privately owned estates is strongest, and blocks of ancient semi-natural woodland. The latter is described as a flat, or very gently rolling, plateau of free-draining sandy soils with extensive areas of heathland or acid grassland, strongly geometric structure of fields enclosed in the 18th and 19th centuries, and large continuous blocks of commercial woodland.

8.5.4. Buckle's Wood, an Ancient Woodland, lies 100m north-west of the green route alignment, with the fields on either side of Buckleswood Road described as

pre-18th century enclosures. Two cropmark features, of possible prehistoric date, have been identified from aerial photographs in the fields to the north-east of Buckleswood Road, on either side of the route corridor. Various archaeology finds have been recorded along the route corridor, including those dating from the Bronze Age, Romano-British and Medieval periods.

8.5.5. The route option is within Flood Zone 1. The nearest watercourse is Leiston Beck, which would be crossed to the west of Abbey Road, and is essentially a small agricultural ditch. The route corridor is mainly underlain by the Lowestoft Diamicton (boulder clay, Unproductive Strata) along the western and central sections and by the Lowestoft Sand and Gravels (Secondary A Aquifer) in the east. These superficial deposits overlie the Crag Group, comprising sands, gravels, silts and clays (Principal Aquifer). The westernmost part of the route, where it joins the existing rail line, crosses Source Protection Zone 3 of a groundwater abstraction.

8.5.6. Along the route corridor, there are various local 'B' and other minor roads. From west to east these are: Buckleswood Road; Abbey Lane; the B1122 (also called Abbey Road near Leiston and Leiston Road near Theberton); and Lover's Lane.

8.5.7. The green rail route option would cross a number of footpaths and recreational routes, which from west to east include:

- Sustrans Regional Cycle Route 42 along Abbey Lane until a point south of the second Leiston Abbey site;
- footpath between Saxmundham Road and Abbey Lane (E-363/003/0);
- footpath between Westward Ho (road) and Abbey Lane (E-363/006/0);
- footpath between B1122 (Abbey Road) and Abbey Lane (E-363/010/0);
- Bridleway 19 on Lover's Lane (E-363/013/0); and
- Sandlings Walk, a long distance route between Eastbridge Road and the Suffolk Coast Path (another long distance route following the coastline and passes through the main development site).

b) Masterplan

8.5.8. The masterplan for the green rail route option is shown in **Figure 8.3**. The proposal is described, running

from west to east, for the following sections of the route:

- Saxmundham Road to Buckleswood Road;
- Buckleswood Road to B1122 (Abbey Road); and
- B1122 (Abbey Road) to the main development site.

i. Saxmundham Road to Buckleswood Road

8.5.9. The green rail route option would connect to the existing railway line via a new rail junction approximately 500m east of the Saxmundham Road level crossing and 230m south of Buckle’s Wood.

8.5.10. It is anticipated that the construction of the rail extension would start from the eastern end of the route and

work west along the route corridor. Some limited access may be required at the western end, around Buckleswood Road. An area of land has been identified in this location for use as a temporary contractors’ laydown area. This area is bounded to the east by Buckleswood Road, to the south by the existing rail line, and to the north by the proposed rail extension. Vehicular access to the area would be provided off Buckleswood Road. An area of landscaped spoil bunding is proposed along the western boundary of the rail line to screen the development from residential properties on the opposite side of the road.

8.5.11. Leiston House (Grade II* listed) lies to the south of the proposed rail junction and south-west of the contractors’ compound. However, the existing rail line provides a degree of shielding and little, or no, impact

Figure 8.3 Indicative masterplan for the green rail route option



to the setting of this listed building is envisaged.

8.5.12. The route would extend in a north-eastwards direction running across an existing public footpath (E-363/003/0), which links Saxmundham Road and Abbey Lane, before crossing Buckleswood Road to the west of Wood Farm. It is proposed to stop up and close Buckleswood Road either side of the rail line extension for the duration of the construction works. Once construction is complete the rail line would be removed and the highway reinstated.

8.5.13. At present a relatively low volume of traffic uses Buckleswood Road, with an average daily two-way traffic flow of around 300 vehicles. There are also a number of local alternative routes.

8.5.14. It is proposed that turning heads would be provided either side of the rail line to allow vehicles to safely turn around. While Buckleswood Road would be

closed to vehicles, it is proposed to provide a footbridge, with ramped access over the rail line, to retain the route for pedestrians and cyclists. This footbridge would also allow the existing north-south footpath between Saxmundham Road and Abbey Lane (E-363/003/0) to be diverted across the railway at this location. Approaching from the south, users would pass along the eastern side of the new rail line before crossing the footbridge. They would then walk or cycle westwards along Buckleswood Road, which would be stopped up to vehicular traffic, as far as the point where it meets the original footpath. The proposed arrangements at this location are shown in **Figure 8.4**.

8.5.15. EDF Energy considered the alternatives of a level crossing or a bridge. The Office of Rail Regulation (ORR) guidance generally discourages the construction of new level crossings, except in exceptional circumstances. Given the relatively light vehicular traffic, in a remote location with alternative routes available, EDF Energy

Figure 8.4 Proposed arrangements relating to the closure of Buckleswood Road



considers that it would be difficult to make the case for a level crossing at Buckleswood Road.

8.5.16. Consideration has also been given to a road bridge to carry Buckleswood Road over the rail line at this location. However, the embankments required to raise the road would be likely to result in significant visual impact, particularly since the close proximity to the railway junction restricts the possibilities for lowering the railway line in cutting within an acceptable gradient.

8.5.17. Overall, EDF Energy considers that the temporary closure of Buckleswood Road, during the construction phase of the Project is the most suitable solution at this location. A pedestrian and cycle bridge would be provided throughout this time. Buckleswood Road would be re-opened to vehicles once the railway line is removed.

ii. Buckleswood Road to the B1122 (Abbey Road)

8.5.18. From Buckleswood Road, the green route continues further north-eastwards through open countryside and farmland to the south of Abbey Lane. There is some potential for indirect impacts to the setting of Grade II listed Fisher's Farm House, north-west of the route.

8.5.19. Where the rail line extension would meet the B1122 (Abbey Road) a level crossing is proposed to accommodate pedestrians, cyclists and equestrians as well as motor vehicles, similar to the arrangements at the existing Saxmundham railway station level crossing. On each side of the railway, adjacent waiting areas for pedestrians/cyclists and equestrians would be provided (refer to **Section 11 Highway Improvements**). Given the small number of train movements a level crossing is considered to be acceptable.

8.5.20. To provide the necessary amount of space between the level crossing and other road junctions, the junction of the B1122 (Abbey Road) and Lover's Lane would need to be moved approximately 100m to the south, as shown in **Figure 8.5**. It is proposed that this would be a permanent re-alignment of Lover's Lane, to improve visibility at this junction for all road users. The old alignment of Lover's Lane would be partially re-used as an off-road route for pedestrians, cyclists and equestrians.

8.5.21. The B1122 (Abbey Road) would be temporarily realigned to enable the construction of the level crossing. The diversionary route for pedestrians, cyclists and equestrians would run alongside the eastern kerb of this temporary road. Once the level crossing is complete, the B1122 would return to its original alignment and pedestrians, cyclists and equestrians would be accommodated along its eastern side.

8.5.22. The realignment of Lover's Lane at its junction with the B1122 (Abbey Road) would remain in place once the railway line is removed; the B1122 would continue to run north-south across the location of the former level crossing. The old alignment of Lover's Lane would remain in place as a route for pedestrians, cyclists and equestrians.

8.5.23. The level crossing is anticipated to be closed to road users no more than around ten times per day, and on many days less frequently than this. Each closure would last around three minutes, therefore, any delays to traffic would be minimal.

8.5.24. Alternatives to a level crossing at B1122 Abbey Road have been considered, but discounted for the following reasons:

- a bridge carrying the B1122 Abbey Road over the railway line would have a greater visual impact on the surrounding landscape and on the setting of the second Leiston Abbey site than the proposal for a level crossing;
- a bridge carrying the railway line over B1122 Abbey Road would have a greater visual impact than the current proposal, due to the shallow gradient required for a railway line, which consequently would necessitate a long embankment; and
- a tunnel taking the railway line beneath B1122 Abbey Road would generate substantially greater volumes of spoil than the current proposal. It would require storage of these large volumes of spoil with visual and land-take implications.

8.5.25. EDF Energy has held initial discussions with the ORR on this issue, who has confirmed the potential acceptability of a new temporary level crossing given the considerations set out above.

8.5.26. It should also be noted that if the rail terminal and freight laydown area on land east of the Eastlands Industrial Estate (refer to **Section 8.6**) were to be progressed, this option would similarly entail a number of short closures of the existing level crossing located on the B1122 in Leiston.

8.5.27. For these reasons, EDF Energy considers that the provision of a level crossing at Abbey Road, on a temporary basis during the construction of the Project, is the most appropriate option given the issues associated with the alternatives.

8.5.28. To the west of the B1122 the route cuts across two public footpaths, both of which run in a north-south alignment (refer to **Figure 8.3**). The western footpath links Westward Ho and Abbey Lane

(E-363/006/0) and the eastern one passes alongside the second Leiston Abbey site linking the B1122 (Abbey Road) and Abbey Lane (E-363/010/0).

8.5.29. It is proposed to divert both of these footpaths eastwards to the proposed B1122 (Abbey Road) level crossing before heading back westwards and re-joining the original alignment. Pedestrians would be able to cross the railway line safely, without having to cross the B1122.

8.5.30. It would be possible to provide a single pedestrian bridge across the rail line for these two existing public footpaths. However, a bridge and associated embankments would add to the visual impact of the rail line extension in the landscape in the proximity of Leiston Abbey. A level crossing for pedestrians is not considered appropriate because of the guidance from the ORR.

8.5.31. Figure 8.5 in this location shows that the proposed level crossing design would incorporate a footway on the western side of the B1122, allowing pedestrians using the aforementioned footpaths to cross the railway in safety. The diverted Bridleway 19 route for cyclists and equestrians (which pedestrians could also use) would cross the railway line on the eastern side of the B1122. Associated waiting areas for pedestrians, cyclists and equestrians would be provided either side of the railway. **Figure 8.6** illustrates what a level crossing could look like in this location.

iii. B1122 (Abbey Road) to the main development site

8.5.32. East of B1122 (Abbey Road), the rail line would run broadly parallel with Lover's Lane for approximately 800m. Along this section of the line a security area is

Figure 8.5 Proposed level crossing at B1122 Abbey Road and associated highway works



proposed, allowing trains to stop and be searched prior to entry or exit from the main development site. The land to the north of Lover's Lane currently follows a steeper slope, so a railway cutting approximately 5m deep would be required. This cutting would reduce the visual impact of the proposal as viewed from Leiston Abbey, since the track (and passing trains) would be partially obscured by the embankment and associated bunding to the north.

8.5.33. The rail line would then turn north-eastwards, passing close to Fiscal Policy woodland where it would run parallel with the northern edge of Kenton Hills. A rail terminal and handling area would be provided in this location. The route would then turn to the south-east for a short distance before continuing eastwards into the Goose Hill area, terminating north of the main platform. Further details of the easternmost section of the green rail route, within the main development site, are provided in **Section 7 Main Development Site**.

c) Construction and operational considerations

8.5.34. It is anticipated that the rail line would be privately owned and operated by EDF Energy, with its construction and operation EDF Energy's responsibility.

8.5.35. The rail line would be designed and constructed to Network Rail standards. A maximum train speed of 25mph has been assumed along the length of the route, although trains would run at lower speeds on certain sections.

8.5.36. The railway line would be constructed early in the construction phase of the Project. It is estimated that construction of the green rail route would take approximately 18 months. It is envisaged that construction of the rail infrastructure itself would start at the eastern end and progress westwards, with the main contractor's compound situated at the eastern end and a smaller one at the western end. Other accesses may be required for associated local highway works.

8.5.37. Additional land would also be required to construct associated highway works. These would be accommodated within the route corridor (refer to **Figure 8.3**).

8.5.38. The rail route would be a temporary development for the duration of the construction phase of the Project. Once no longer required, the rail line would be removed and the land restored to its previous state.

d) Preliminary environmental information

8.5.39. **Table 8.1** details the preliminary environmental information for the green rail route option. It includes details of the key environmental considerations and potential mitigation measures that may be required during the construction and operational phases. The post-operation phase (i.e. removal of the rail extension once it is no longer required) is likely to give rise to impacts similar to those experienced during its construction.

Figure 8.6 Indicative illustration of the level crossing



Figure 8.7 Current view from the ruins of the second Leiston Abbey site, towards the green rail route



Figure 8.8 Indicative illustration of the green rail route viewed from the second Leiston Abbey site



Table 8.1 Green rail route option preliminary environmental information

Topic	Key considerations
Landscape and visual	<p>Construction</p> <ul style="list-style-type: none"> • Temporary changes to landscape character from an increase of development in the landscape. • The rail route would create a cutting in the landscape and would result in the loss of some landscape features, such as existing trees and hedgerows. The spoil bunds would also change the landscape character. • Changes to views from settlements and key routes in close proximity to the rail route, notably properties on the northern edge of Leiston; farmsteads located to the south of Abbey Road; Abbey Lane, Abbey Road, Lover's Lane; and surrounding PRoW and visitors to the second Leiston Abbey, notably from the elevated vantage point on the Abbey ruins. • Construction activity would be visible, along with changes to the view resulting from loss of vegetation and creation of spoil bunds. <p>Operation</p> <ul style="list-style-type: none"> • Changes to landscape character due to the introduction of transport infrastructure and moving freight traffic. • Whilst the railway track and freight trains on the line would not always be visible (e.g. where it is within a cutting and/or screened by existing vegetation), the route itself would be visible from some viewpoints. Taller elements, such as signage and lighting, at certain locations, the footbridge crossing and spoil bunds, would be most visible. <p>Mitigation measures</p> <ul style="list-style-type: none"> • Spoil bunds would help mitigate the visual impact from nearby properties and some areas of Leiston to the south. • Existing landscape features would be retained as screening, where reasonably practicable. • New landscaping would be promoted, where appropriate, and this would be established at the earliest reasonable opportunity. • Consideration of the design of associated infrastructure, including lighting, signage, bridges and boundary treatments. • Following construction, the agricultural land would be restored in accordance with a landscape strategy that would be developed and agreed at the appropriate time.
Terrestrial ecology and ornithology	<p>Construction</p> <ul style="list-style-type: none"> • Construction of the railway line could cause disturbance from noise and lighting to foraging and roosting bats within Fiscal Policy woodland (and the adjacent north-south Bridleway 19) and Kenton Hills. This would include commuting routes passing west to east along the northern edge of Kenton Hills, and north to south along Bridleway 19. • Although ecological impacts associated with much of the remainder of the railway line would be relatively minor, some habitat of value to birds and bats, and potentially reptiles and great crested newts (if present), would be lost. <p>Operation</p> <ul style="list-style-type: none"> • Potential disturbance to foraging and roosting bats from noise and lighting. <p>Mitigation measures</p> <ul style="list-style-type: none"> • At this stage, no mitigation features are proposed beyond those embedded in the design of the proposed development, which includes the use of bunding and/or acoustic screening and lighting design.
Amenity and recreation	<p>Construction and Operation</p> <ul style="list-style-type: none"> • The rail route would cross three PRoW. • The Suffolk Coast Path and Sandlings Walk would be temporarily diverted inland from the coast, crossing the railway line next to the B1122 Abbey Road. The diversion is not caused by the rail route, but the rail route would have the potential to affect users of the diverted Suffolk Coast Path and Sandlings Walk. • There is the potential for effects on users' experience of routes and other recreational resources, including visitors to Leiston Abbey due to changes in views, noise and air quality. <p>Mitigation measures</p> <ul style="list-style-type: none"> • PRoW would be closed and diverted, where practicable, in accordance with a comprehensive construction phase masterplan that will be prepared. • Footpath E-363/003/0 would be diverted. A pedestrian bridge provided near Buckleswood Road would allow continued pedestrian access. • Footpaths E-363/006/0 and E-363/010/0 would be diverted eastwards to the proposed B1122 (Abbey Road) level crossing, before heading back westwards and re-joining their original alignments. <p>Bridleway 19 would be diverted via the proposed B1122 (Abbey Road) level crossing as part of the main development site proposals (refer to Section 7 Main Development Site). The diverted Bridleway 19 would follow a proposed bridleway on the eastern side of the B1122 (Abbey Road), with safe waiting areas for horses, either side of the level crossing. The bridleway diversion proposals include the provision of a shared footway/bridleway alongside Lover's Lane within the Aldhurst Farm Habitat Creation Scheme site (refer to Section 11 Highway Improvements).</p>

Terrestrial historic environment

Construction

- Potential for buried archaeological remains, dating from the prehistoric to the post-medieval period, to be present along the length of the green rail route corridor.
- Potential for temporary indirect impacts to the setting of Grade II listed Fisher’s Farm House and the Scheduled Monument and Grade I and Grade II listed buildings at Leiston Abbey from construction of the rail line extension.

Operation

- Potential for harm to the setting of Leiston Abbey and associated listed buildings, which could be exacerbated when taken in combination with other development, particularly the site entrance and the accommodation campus.

Mitigation measures

- The historic landscape assessment and results of archaeological investigation will inform mitigation. This would ensure that proposals are sensitive to the historic landscape character and the impact to the settings of designated heritage assets is minimised, as far as possible.
- Archaeological evaluation, in the form of geophysical survey and trial trench excavation, will be undertaken to determine presence/absence, nature, date and extent of any surviving archaeological remains. If archaeological remains are present on the site, EDF Energy will work with Suffolk County Council Archaeological Service (SCCAS) to devise a suitable mitigation strategy. This could involve mitigation by design, also known as preservation in situ, or set-piece excavation and recording of archaeological remains, also known as preservation by record, or a combination of the two.
- The route to the south of Leiston Abbey west of the B1122 would run at grade; east of B1122 (Abbey Road) the section would run in cutting. This would reduce the visual impact of the rail line extension as viewed from Leiston Abbey.

Soils and agriculture

Construction

- Development would result in the temporary loss of Grade 2 (very good) and Grade 3 (good to moderate) agricultural land.
- Soil stripping and stockpiling activities during construction would be managed to avoid potential damage to soils and loss of fertility.

Operation

- Operation of the rail route is not considered to result in any additional considerations for soils. Agricultural production would cease for the duration of the rail line being in operation, leading to a temporary effect on the associated farm business (i.e. reduced overall agricultural production area).

Mitigation measures

- For areas of agricultural land that would be restored to agricultural use, appropriate soil handling procedures would be used. Detailed arrangements will be developed in consultation with relevant stakeholders and in line with established soil management principles.

Noise and vibration

Construction

- Occupiers of nearby dwellings and other sensitive receptors in proximity to the rail route corridor may experience noise and vibration impacts from site clearance and construction of the rail line.
- Additional HGVs and light goods vehicles accessing the site may cause additional noise and vibration impacts.

Operation

- Occupiers of nearby dwellings and other sensitive receptors in proximity to the green rail route corridor may experience noise impacts from freight trains. Due to the distance of properties to the route, predicted noise impacts during the day are likely to be very low, and if used during the night, impacts are likely to be very low for most. For a few dwellings closest to the line the impact would be noticeable, but still relatively low.
- Leiston Abbey and Pro Corda music school are located at a sufficient distance from the route so significant changes in noise levels are not predicted.
- There are residential properties located within approximately 40-50m of the existing Saxmundham - Leiston branch line which would experience significant adverse noise impacts from freight trains, irrespective of whether the green rail route option or the option of a new rail terminal on land east of the Eastlands Industrial Estate were progressed. However, movements would be limited to a maximum of around 5 deliveries (10 occurrences) per day lasting a small number of minutes, at most, as the train passes. If there are to be rail movements at night, noise impacts for residents of these properties would be more significant. Vibration, or ground borne noise impacts of any significance, are not predicted for any residential properties.

Mitigation measures

- Further detailed modelling and assessment of noise from the proposed development will inform a more detailed noise assessment and potential for mitigation measures to be embedded within the masterplan (e.g. screening) or additional mitigation measures.

Air quality	<p>Construction</p> <ul style="list-style-type: none"> • Additional HGVs (e.g. materials deliveries) and light goods vehicles (e.g. construction workers) accessing the site may cause air quality impacts, although these are not likely to be significant. • Dust could be generated from site clearance and levelling and from material stockpiling and management activities. <p>Operation</p> <ul style="list-style-type: none"> • Rail emissions of pollutants associated with the green rail route are not likely to be a key consideration due to the low numbers of movements anticipated per day, good baseline air quality and the distance of any residential properties from stationary engines. <p>Mitigation measures</p> <ul style="list-style-type: none"> • The air quality assessment work undertaken to date has identified the need for site specific dust management techniques to control dust during construction.
Land quality	<p>Construction and Operation</p> <ul style="list-style-type: none"> • There are no known contamination risks, however, there is the potential for sources of contamination to be present along route corridors. • Construction workers and vegetation. • There is the potential for contamination of the soils to occur during construction works (e.g. from escape of fuels and oils from plant and storage tanks). • No significant impacts are anticipated during operation. <p>Mitigation measures</p> <ul style="list-style-type: none"> • A risk assessment will be undertaken, and if contamination is present standard good practice measures would be adopted to ensure that any contamination is segregated at source and remediated for re-use where suitable, or removed from site for disposal. • During construction, the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with the appropriate management plans, agreed pursuant to an approved Code of Construction Practice. • Potential risks to construction workers would be managed through standard health and safety and risk assessment procedures.
Groundwater	<p>Construction and Operation</p> <ul style="list-style-type: none"> • The westernmost part of the route, where it joins the existing railway line, would cross Source Protection Zone 3 of a groundwater abstraction. The construction and operation of the railway line extension is unlikely to impact on groundwater, and there is a low risk of contamination. The presence of low permeability deposits overlying the aquifer in the west would also act to limit any potential impact. <p>Mitigation measures</p> <ul style="list-style-type: none"> • During construction, any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented via an appropriate management plan. • Further mitigation measures will be considered, as necessary, through the environmental impact assessment (EIA) process.
Surface water	<p>Construction and Operation</p> <ul style="list-style-type: none"> • The green rail route would cross Leiston Drain adjacent to Abbey Road. The watercourse at this point is an ephemeral agricultural drain that is heavily overgrown. The direct physical modification of the watercourse at the crossing point is unlikely to cause any significant impacts on surface waters, although there is some potential for changes to the downstream movement of water and sediment. <p>Mitigation measures</p> <ul style="list-style-type: none"> • Control measures would be built into the construction process, which would require consideration of the drainage implications of the works, and remove any potential risks associated with hydrocarbon contamination from vehicles and accidental spillages. Such control measures would be implemented via an appropriate management plan. • The watercourse crossing option would avoid constricting flows and the downstream transport of sediment.

8.6. Option for a new rail terminal on land east of the Eastlands Industrial Estate

a) Site description

8.6.1. The new rail terminal and freight laydown area option is located on land east of the Eastlands Industrial Estate on the eastern edge of Leiston (refer to **Figure 8.9**). The site comprises three arable fields (Grade 3) bounded by Valley Road to the north, Lover's Lane to the east, and King George's Avenue to the south. The western boundary is defined by the single rail track and embankment. The field boundaries benefit from existing hedgerow and tree screening on all sides. There is an access to the largest central field off the junction of Lover's Lane and Valley Road, with the smaller fields accessed off their respective public highways.

8.6.2. The site lies within the 'estate sandlands' landscape character area, which is described as a flat, or very gently rolling plateau, of free-draining sandy soils with extensive areas of heathland or acid grassland, strongly geometric structure of fields enclosed in the 18th and 19th centuries and large continuous blocks of commercial forestry.

8.6.3. There are no public rights of way running across the site, although a public footpath (E-363/018/0) runs close to the northern boundary of the site. A narrow roadside pavement extends along the western side of Lover's Lane from King George's Avenue (south of the site) to the south-eastern corner of the site, before crossing to the east side of Lover's Lane where it runs parallel to the eastern site boundary before linking to Sandy Lane and Bridleway 19.

8.6.4. The closest bridleways are Bridleway 19 (E-363/019/0) on Sandy Lane, approximately 100m to the north-east of the site, bridleway route code E-363/028/0 to the south-east of the site, running from King George's Avenue, adjacent to Crown Farm, southwards to the dismantled railway. There is a network of PRoW within the landscape to the east of Leiston, some of which link to Aldringham Common. Aldringham Common is an area of Open Access Land lying, at closest, approximately 500m to the south-east of the site. Leiston Common, an area of Open Access Land, lies approximately 250m to the north-east of the site. Leiston Common is crossed by a public footpath (E-363/030/0) running between Sandy Lane and Lover's Lane.

8.6.5. The site is within Flood Zone 1. The nearest watercourse is Leiston Beck (approximately 350m north) which continues into Leiston Drain to the east of Lover's Lane. The site is underlain by the Lowestoft Sand and Gravels (Secondary Aquifer) and these

superficial deposits overlie the Crag Group comprising sands, gravels, silt and clay (Principal Aquifer). Major abstraction boreholes are located within the site.

b) Masterplan proposals

8.6.6. This section describes the masterplan proposals for the new rail terminal and freight laydown area option on land east of the Eastlands Industrial Estate. Details are provided of the various factors that have informed the emerging masterplan, including environmental considerations, where relevant. As such, preliminary environmental information is provided in **Table 8.2**.

8.6.7. It should be noted that, even in the event that the green rail route option is progressed, and a new rail terminal and freight laydown area is not developed on land east of the Eastlands Industrial Estate, EDF Energy is proposing that this land would be used to support the construction of the Project (refer to **Section 7 Main Development Site**).

8.6.8. The indicative layout for the new rail terminal and freight laydown area option is shown in **Figure 8.9**. This includes the proposed vehicle access onto Lover's Lane. The new rail terminal and freight laydown area would be larger than the existing railhead south of King George's Avenue (see **Section 8.7**). A railway junction east of Valley Road would lead from the existing Saxmundham - Leiston branch line directly into the new freight terminal.

8.6.9. The new rail terminal and freight laydown area would be equipped to off-load both containerised and bulk materials from incoming trains and is likely to require the provision of gantry cranes and a system of grab buckets. The development is likely to include some small temporary buildings to provide office and welfare facilities for a small number of workers based at the site. Materials delivered to the terminal by rail would be transferred onto HGVs, which would travel a short distance (approximately 700m) along Lover's Lane to the secondary site access provided for this purpose (refer to **Section 7 Main Development Site**).

8.6.10. The terminal would also contain areas of hardstanding where materials can be stored whilst awaiting transfer to the construction site. There is the potential for some temporary warehousing to store materials. The terminal would be designed to handle several hundred containers in a typical month, with some space set aside for the temporary storage of containers awaiting transfer by HGV to the construction site itself. Aggregates would be transferred directly from railway wagons into tipper trucks using grab buckets installed as part of the rail terminal machinery. Vehicles would leave

the rail terminal via a new road junction on Lover's Lane, before travelling north along Lover's Lane and turning right into the construction site via a secondary site access to the west of the former District Survey Laboratory.

8.6.11. This option would entail around 500 daily HGV movements (based on a maximum of five rail deliveries per day) transferring materials between the rail terminal and the construction site. These trips would be along Lover's Lane where just one residential property fronts directly onto the highway. Moreover, this is a robust figure for peak periods and it is considered unlikely that the number of daily vehicle movements would be this high.

8.6.12. The rail terminal would take approximately twelve months to construct.

8.6.13. The option of a new rail terminal and freight laydown area is proposed as a temporary development that would remain in place for the duration of the construction phase of the Project, after which the land would be restored to its previous state.

c) Preliminary environmental information

8.6.14. Table 8.2 details the preliminary environmental information for the new rail terminal and freight laydown

Figure 8.9 Proposed layout of the new rail terminal and freight laydown area option



area option. It includes details of the key environmental considerations and potential mitigation measures that may be required during both the construction and operational phases. The post-operational phase

(i.e. removal of the rail extension once it is no longer required by EDF Energy to support the construction of the Project) is likely to give rise to impacts similar to those experienced during its construction.

Table 8.2 Land to the east of Eastlands Industrial Estate preliminary environmental information

Topic	Key considerations
Landscape and visual	<p>Construction</p> <ul style="list-style-type: none"> Changes to landscape character, albeit not permanently, as an area of agricultural land changes to a rail terminal and a freight laydown area increasing the presence of development in the landscape. Changes to views from settlements and key routes in close proximity to the new rail terminal and freight laydown area, notably from properties on the north-eastern edge of Leiston, public highways and farmsteads located to the south of Lover's Lane. <p>Operation</p> <ul style="list-style-type: none"> Changes to landscape character due to the introduction of transport infrastructure, associated signage and lighting, and moving freight traffic. Whilst the railway track and freight traffic on the line would be partly contained by boundary vegetation, taller elements, such as signage and lighting columns, would be visible. Any spoil storage areas within the site are also likely to be visible. <p>Mitigation measures</p> <ul style="list-style-type: none"> Existing landscape features would be retained as screening, where reasonably practicable, and appropriate new landscape design would be promoted. New planting would be established at the earliest reasonable opportunity. Consideration of the design and infrastructure, including lighting, signage and boundary treatments. Following construction, the agricultural land would be restored in accordance with a landscape strategy that would be developed and agreed at the appropriate time.
Terrestrial ecology and ornithology	<p>Construction and Operation</p> <ul style="list-style-type: none"> No potential significant ecological impacts are anticipated. <p>Mitigation measures</p> <ul style="list-style-type: none"> At this stage, no ecological mitigation measures are proposed.
Amenity and recreation	<p>Construction and Operation</p> <ul style="list-style-type: none"> No ProW or Open Access Land fall within the new rail terminal and freight laydown area site. Construction and operational effects would, therefore, be limited to potential effects on views, noise and air quality from recreation routes and areas within the wider landscape. <p>Mitigation measures</p> <ul style="list-style-type: none"> Mitigation measures will be considered, as necessary, throughout the EIA process.
Terrestrial historic environment	<p>Construction</p> <ul style="list-style-type: none"> Potential for buried archaeological remains dating from the prehistoric to the post-medieval period to be present at the site. <p>Operation</p> <ul style="list-style-type: none"> Operation of the new rail terminal and freight laydown area would not result in any key considerations for the terrestrial historic environment. <p>Mitigation measures</p> <ul style="list-style-type: none"> The historic landscape assessment and results of archaeological investigation will inform the establishment of landscape and visual mitigation, to ensure that proposals are sensitive to historic landscape character and minimise the impact to the settings of designated heritage assets as far as possible. Geophysical survey has identified potential archaeological remains. Trial trench excavation, programmed for later in 2016, will determine the presence/absence, nature, date and extent of any surviving archaeological remains. If archaeological remains are present on the site, EDF Energy will work with SCCAS to devise a suitable mitigation strategy. This could involve mitigation by design, also known as preservation in-situ, or set-piece excavation and recording of archaeological remains, also known as preservation by record, or a combination of the two.

Soils and agriculture	<p>Construction</p> <ul style="list-style-type: none"> • Development would result in the loss of Grade 3 (good to moderate) agricultural land. • Soil stripping and stockpiling activities during construction would need to be managed to avoid potential damage to soils and loss of fertility. <p>Operation</p> <ul style="list-style-type: none"> • Operation of the new rail terminal and freight laydown area is not anticipated to result in any additional considerations for soils. • Agricultural production would cease, leading to an effect on the associated farm business (i.e. reduced overall agricultural production area). <p>Mitigation measures</p> <ul style="list-style-type: none"> • For areas of land that would be restored to agricultural use, appropriate soil handling procedures would be used. Detailed arrangements will be developed in consultation with relevant stakeholders and in line with established soil management principles and set out in an appropriate management plan.
Noise and vibration	<p>Construction</p> <ul style="list-style-type: none"> • Occupiers of nearby dwellings and other sensitive receptors may experience noise and vibration impacts from site clearance and construction of the new rail terminal and freight laydown area. <p>Operation</p> <ul style="list-style-type: none"> • Potential for significant adverse noise from freight trains for residential properties located within approximately 40-50m of the line during the day time. Noise impacts would be more adverse in relation to any freight train movements occurring at night. Similarly, modelling suggests that during the day, some noise sensitive premises within approximately 100m of the line, where not screened by intervening buildings, would also experience some impact from noise. • Potential for noise impacts from unloading activities at the new rail terminal and freight laydown area. • Potential traffic-related noise impacts from HGV movements both within the site and along Lover's Lane. • Vibration impacts, particularly at night, are likely to be significant for residential properties in close proximity to the railway line, but would be unlikely to pose a risk of damage to structures even at the closest receptors. <p>Mitigation measures</p> <ul style="list-style-type: none"> • Further detailed modelling and assessment of noise from the proposed development and associated freight train movements will inform the development of an appropriate mitigation strategy.
Air quality	<p>Construction</p> <ul style="list-style-type: none"> • Dust could be generated from site clearance and levelling and from material stockpiling and management activities. • Potential traffic-related emissions from HGV and light goods vehicle movements accessing the site during construction. <p>Operation</p> <ul style="list-style-type: none"> • Rail emissions of pollutants area are not likely to be an issue due to the low numbers of movements anticipated per day, good baseline air quality and the distance of any residential properties from stationary engines. • Potential emissions from HGV movements both within the site and along Lover's Lane. <p>Mitigation measures</p> <ul style="list-style-type: none"> • The air quality assessment work undertaken to date has identified the need for site specific dust management techniques to control dust. • Further detailed assessment will be undertaken, and further mitigation measures will be considered, as necessary, throughout the EIA process.
Land quality	<p>Construction and Operation</p> <ul style="list-style-type: none"> • There are no known contamination risks. However, there is the potential for sources of contamination to be present on the site, which could be disturbed by construction activities giving rise to potential risks to controlled waters, users of adjacent sites, future and existing services / infrastructure, construction workers and vegetation. • There is the potential for contamination of the soils to occur during construction works (e.g. from escape of fuels and oils from plant and storage tanks). • No significant impacts are anticipated during operation. <p>Mitigation measures</p> <ul style="list-style-type: none"> • A risk assessment will be undertaken. If contamination is present, the adoption of standard good practice measures will ensure that any contamination is segregated at source and remediated for re-use where suitable, or removed from site for disposal. • During construction the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with the appropriate management plans and agreed pursuant to an approved Code of Construction Practice. • Potential risks to construction workers would be managed through standard health and safety and risk assessment procedures.

Groundwater	<p>Construction</p> <ul style="list-style-type: none"> Development of the new rail terminal and freight laydown area may result in some disturbance of soils, but as this is a greenfield site the risk to groundwater is low. <p>Operation</p> <ul style="list-style-type: none"> Buildings and areas of hardstanding have the potential to reduce infiltration to groundwater, but as the area is partly underlain by boulder clay the magnitude of any change in infiltration is likely to be low. Therefore, no further assessment is proposed to be undertaken. <p>Mitigation measures</p> <ul style="list-style-type: none"> Spills or leaks will be managed in accordance with the Environment Agency Pollution Prevention Guidelines. Detailed arrangements will be set out in an appropriate management plan.
Surface water	<p>Construction and Operation</p> <ul style="list-style-type: none"> Watercourses are not located in close proximity to the new rail terminal and freight laydown area. This is scoped out of requiring any further assessment in relation to surface water impacts. <p>Mitigation measures</p> <ul style="list-style-type: none"> Notwithstanding control measures would be built into the construction process that would require consideration of the drainage implications of the works and remove any potential risks associated with hydrocarbon contamination from vehicles and accidental spillages.

8.7. Sizewell Halt

8.7.1. As described in **Section 8.2**, in order to maximise the use of rail as part of the freight management strategy, EDF Energy would make use of the existing Sizewell Halt during the early years. Sizewell Halt has limited capacity, therefore it could only be served by a maximum of two trains per day. Materials delivered to the terminal by rail would then be transferred by HGVs along Lover’s Lane to the main development site.

8.7.2. EDF Energy is continuing to progress the designs for any potential amendments to the layout of Sizewell Halt that may be required in order to facilitate deliveries during the early years.

a) Preliminary environmental information

8.7.3. Table 8.3 provides a summary of environmental considerations for any works associated with amending Sizewell Halt and its operation.

Table 8.3 Early years use of existing rail terminal to the south of King George’s Avenue (Sizewell Halt) preliminary environmental information

Topic	Key considerations
Landscape and visual	<ul style="list-style-type: none"> The use of the existing rail terminal would result in minor, localised landscape and visual impacts as a result of any new structures and infrastructure required (e.g. lighting and signage).
Terrestrial ecology and ornithology	<ul style="list-style-type: none"> Due to the limited works and operations, no potential impacts to ecological receptors are anticipated.
Amenity and recreation	<ul style="list-style-type: none"> No PRoW or other recreational resources would be physically affected. Potential effects would be limited to effects on views, noise and air quality from recreation routes and areas within the wider landscape.
Terrestrial historic environment	<ul style="list-style-type: none"> As there would be no additional land-take, there is no potential for a direct impact on buried archaeological remains, and operation of the existing rail terminal would not result in any key considerations for the terrestrial historic environment.
Soils and agriculture	<ul style="list-style-type: none"> As there would be no additional land-take, there is no potential for an impact on soils and agriculture.
Noise and vibration	<ul style="list-style-type: none"> Occupiers of nearby dwellings and other sensitive receptors may experience temporary noise and vibration impacts during upgrade works to Sizewell Halt. Standard good practice measures would be implemented to control and minimise noise and vibration impacts during the upgrade works. There is the potential for adverse impacts to noise and vibration sensitive premises close to the line. However these would only be limited to a maximum of two trains per day. Potential for noise impacts from unloading activities. Potential traffic-related noise impacts from HGV movements to and from the main development site.

Air quality	<ul style="list-style-type: none"> • Due to the limited works and operations, no potential impacts are anticipated.
Land quality	<ul style="list-style-type: none"> • Due to the limited works and operations, no potential impacts are anticipated.
Groundwater	<ul style="list-style-type: none"> • Due to the limited works and operations, no potential impacts are anticipated.
Surface water	<ul style="list-style-type: none"> • Due to the limited works and operations, no potential impacts are anticipated.

8.8. Upgrades to Saxmundham – Leiston branch and East Suffolk Line

8.8.1. All trains bringing materials for the construction of Sizewell C, whether serving Sizewell Halt during the early years of the programme or the green rail route and rail terminal options, would travel along the East Suffolk Line as far as Saxmundham and then along the branch line towards Leiston.

8.8.2. Due to the hourly passenger service operating between Ipswich and Lowestoft, combined with the existing sections of single track, there is very limited available capacity on the line to accommodate the additional freight services required for the Project. EDF Energy is working closely with Network Rail to establish the upgrades required to increase the track capacity to accommodate an additional five freight trains a day, over and above the existing passenger timetable. To increase the capacity of the existing section of single track, a 'passing loop' or section of double tracking would be required on the East Suffolk Line between Ipswich and Lowestoft in the vicinity of Wickham Market Station, at Campsea Ashe. Network Rail has advised that the location at Campsea Ashe has a number of significant advantages:

- there is land available which is already in the ownership of Network Rail;
- provision has been made within the signalling arrangements on the East Suffolk Line to allow for a passing loop at this location; and
- installing the passing loop at this location could allow for the future provision of an additional platform at Wickham Market station.

8.8.3. The precise location of the passing loop has yet to be determined by Network Rail; work is ongoing to identify a location. A number of responses to Stage 1 consultation raised concerns about the proximity of a passing loop to existing housing at Campsea Ashe. Network Rail is fully aware of these concerns and will be assessing additional locations in the vicinity of Campsea Ashe to that indicated in the Stage 1 consultation.

8.8.4. In addition to the passing loop on the East Suffolk Line, it is envisaged that additional signalling would be required between Ipswich and Saxmundham to enable trains to be dispatched more efficiently along this section of line. A track crossover may also be required at Saxmundham to avoid a capacity constraint at the point where the track joins the branch line.

8.8.5. The branch line between Saxmundham and Leiston may also require a significant upgrade to be in a condition to handle the freight trains required for the Project. This could involve replacement of sections of track and repair of some of the supporting structures. Additionally, it may be necessary to modify several manually operated level crossings to improve journey times for freight trains. EDF Energy continues to progress the details of this work with Network Rail. If closure of any level crossings were necessary this would be subject to further consultation with affected parties. Any upgrades required to the branch line would need to take place prior to the commencement of initial services serving the existing Sizewell Halt during the early years of the construction phase.

8.8.6. EDF Energy anticipates that any proposed work on either the East Suffolk Line or branch line would be undertaken by Network Rail. The Network Rail GRIP (Governance for Railway Investment Projects) approval process has commenced to confirm what rail infrastructure improvements would be required.

8.8.7. In the event that the GRIP process identifies that the current condition of the branch line is such that large sections of track require replacement, EDF Energy may discuss with Network Rail the possibility of leasing the branch line for the duration of the construction period and for EDF Energy to undertake the required upgrade works. If this were to be the case, EDF Energy may include the proposals in its application for development consent. Any information on emerging proposals will be consulted upon prior to the submission of an application for development consent.

8.9. Next steps

8.9.1. Work is ongoing to evaluate the ‘marine maximised’ and ‘rail maximised’ scenarios, as described in **Section 6 Transport**. This evaluation will in part be informed by ongoing discussions with Network Rail and further evaluation of both the green rail route and the rail terminal on land east of the Eastlands Industrial Estate options. This will include further assessment to fully understand the potential environmental effects and determine the level to which identified effects can be mitigated.

8.9.2. Following consideration of consultation responses and further evaluation of the options, EDF Energy will identify a preferred option. Detailed design would then be progressed on the preferred option, including the proposals for the associated highways infrastructure (e.g. level crossings and road junctions). A full EIA will also be undertaken. A summary of the likely further studies and assessments to be carried out is detailed in **Table 8.4**. Further environmental information and more detailed proposals of the preferred option will be consulted upon prior to the submission of an application for development consent.

Table 8.4 Rail options – further studies and assessments

Topic	Further studies and assessments
Landscape and visual	<ul style="list-style-type: none"> A Landscape and Visual Impact Assessment (LVIA) will be undertaken to assess and describe the effects of the preferred option. Work leading to the preparation of the LVIA will continue to influence design development as part of the iterative design process. This will include consideration of landscaping proposals and opportunities to provide screening for potential impacts.
Terrestrial ecology and ornithology	<ul style="list-style-type: none"> Bat activity, breeding bird and great crested newt surveys will be completed for the land outside the main development site. These surveys will help determine the importance of the woodland edge, hedgerows and field boundaries as foraging habitat for bats as well as for great crested newts and a variety of bird species. Further surveys will also be carried out along the green rail route corridor. These surveys will inform the full ecological and ornithological assessment, if required.
Amenity and recreation	<ul style="list-style-type: none"> An Amenity and Recreation Impact Assessment will be undertaken to assess and describe the effects of the preferred option, drawing on the landscape and visual, noise and vibration, air quality and transport assessments. Work leading to the preparation of an impact assessment will influence design development, including potential recreational route diversion proposals, as part of the iterative design process.
Terrestrial historic environment	<ul style="list-style-type: none"> Geophysical survey on the sites of the new rail terminal and freight laydown area and the green rail route corridor is being undertaken. A programme of trial trenching to establish the presence or absence of buried archaeological remains on these sites will be undertaken in accordance with a Written Scheme of Investigation (WSI) to be discussed and agreed with SCCAS. Further assessment and consultation with Historic England will be undertaken to understand the potential to affect the setting of the second Leiston Abbey site.
Soils and agriculture	<ul style="list-style-type: none"> Survey to determine soil quality. Consultation with landowners and land managers to understand farming and land-management practices and issues.
Noise and vibration	<ul style="list-style-type: none"> Noise modelling will be undertaken to determine the significance of the potential impacts associated with train movements along the preferred rail route option. Mitigation options for noise impacts will be considered and, where appropriate, further progressed.
Air quality	<ul style="list-style-type: none"> No further surveys are planned due to the availability of existing data in the area. Assessment of train emissions may be required if idling close residential or other sensitive receptors is anticipated. If required, emissions modelling and assessment of HGV trips transporting materials between the new rail terminal on land east of the Eastlands Industrial Estate and the main development site.
Land quality	<ul style="list-style-type: none"> A Phase 1 ground contamination desk-based study has been undertaken, which identified very low to low risks to human receptors, low risk to property receptors and moderate to low risks to controlled waters (groundwater) receptors An intrusive geotechnical investigation will be undertaken to inform the design and assess geotechnical constraints. This will include geo-environmental testing to assess the potential for contamination.
Groundwater	<ul style="list-style-type: none"> The geological and hydrogeological understanding of the site will be updated based on future geotechnical investigations.
Surface water	<ul style="list-style-type: none"> All surveys have been completed.

9. Northern Park and Ride

9.1. Introduction

9.1.1. As set out in **Section 2 Vision and Objectives**, EDF Energy's overall objective is that Sizewell C would be designed and implemented to high environmental standards, taking full account of the sensitivity of its location. In developing its transport strategy, EDF Energy has sought to take account of the local highway network in the development and design of its proposals. Opportunities have been sought to limit the traffic and traffic-related effects of moving goods and people through the use of non-road based transport, where feasible, and through the careful siting and design of its proposals. These principles have guided the transport proposals in relation to the park and ride facilities.

9.1.2. EDF Energy's strategy for managing the movement of the workforce during the peak construction phase of Sizewell C is set out in **Section 6 Transport**. That section explains that park and ride facilities would play an important role in reducing the amount of additional traffic generated by the construction workforce on local roads and through local villages.

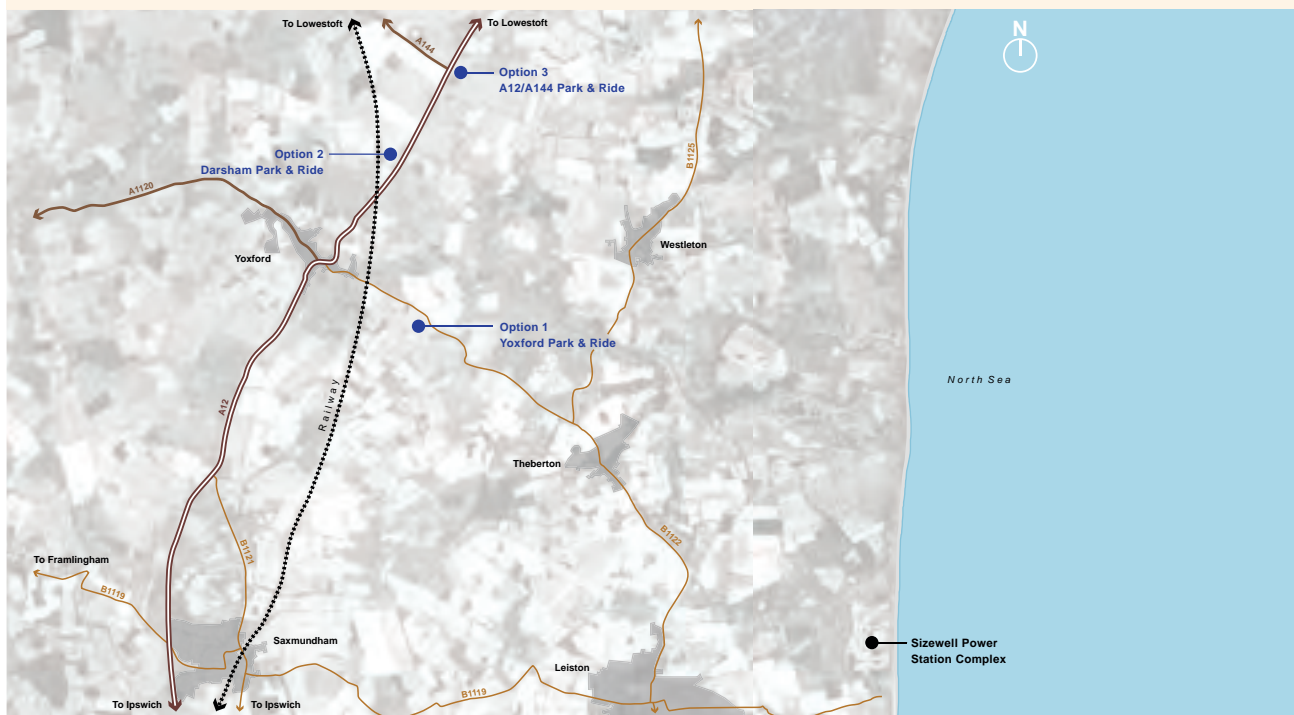
9.1.3. The transport strategy (**Section 6 Transport**) details the rationale for proposing two park and ride facilities, one to the north and one to the south of the main development site. The transport strategy also explains that these should be located close to the main arterial A12 route to be

effective in capturing traffic generated by the construction workforce. EDF Energy's Sizewell C Gravity Model (the Gravity Model), which estimates the residential location of the peak construction workforce (refer to **Section 5 Socio-economics**), has informed the required number of car parking spaces at each of the park and ride facilities.

9.1.4. For the northern park and ride facility, around 1,000 car parking spaces are likely to be required, together with other infrastructure and on-site spoil storage areas to retain the arisings from the construction of the facility. At the Stage 1 consultation EDF Energy consulted on the possibility of co-locating an induction centre and postal consolidation facility at the northern park and ride facility. EDF Energy's preference is now for the induction centre to be located at the main development site (refer to **Section 7 Main Development Site**) as this offers the greatest efficiencies for the Project through the management and integration of induction activities into the wider operation of the construction site and accommodation campus. The postal consolidation facility is proposed within the southern park and ride facility (rather than within the northern park and ride facility), due to its proximity to larger distribution centres in Ipswich.

9.1.5. At the Stage 1 consultation EDF Energy presented three site options for the siting of a northern park and ride facility, as follows (refer to **Figure 9.1**):

Figure 9.1 Stage 1 consultation site options for the northern park and ride



- Option 1 (Yoxford Road);
- Option 2 (Darsham); and
- Option 3 (A12/A144 Junction).

9.1.6. EDF Energy has selected Option 2 (Darsham) as its preferred site for the northern park and ride facility. Until the studies at Darsham have been completed, EDF Energy is holding the Option 3 (A12/A144 Junction) site in reserve. It would only be taken forward if the Darsham site proved to be unsuitable in light of feedback from consultation or further environmental and technical studies. Refer to **Section 9.3** for details of the rationale for site selection.

9.1.7. Further details about the proposed northern park and ride facility are set out in this section as follows:

- **Section 9.2** outlines EDF Energy's requirements for the northern park and ride facility;
- **Section 9.3** details the rationale for EDF Energy's selection of the Darsham site as the preferred location for the northern park and ride facility, including details of how the feedback from the Stage 1 consultation informed this;
- **Section 9.4** describes the Darsham site;
- **Section 9.5** describes the masterplan proposals, with details of how these have evolved having regard to environmental considerations and feedback from consultation, amongst other things;
- **Section 9.6** details the key environmental considerations that would arise from the construction, operation and removal (referred to as post-operation) phases, as well as identifying potential measures which may be required to avoid or mitigate potential effects; and
- **Section 9.7** details the next steps which will inform the ongoing development of the northern park and ride masterplan, including further studies and surveys.

9.2. Site requirements

9.2.1. As explained in **Section 6 Transport**, the proposals for park and ride facilities have been shaped by assumptions, namely:

- the size of the workforce at peak construction (refer to **Section 5 Socio-economics**);
- the size of the car park at the main development site (refer to **Section 7 Main Development Site**), which

is proposed to provide 1,000 spaces to accommodate workers who live close to the site and east of the A12, as well as those workers who may have operational or personal circumstances which require the use of on-site car parking; and

- the distribution of anticipated demand between the northern and southern park and ride sites, which has been informed by the Gravity Model updates (refer to **Section 5 Socio-economics**).

9.2.2. The broad requirements for the northern park and ride site remain similar to those set out at the Stage 1 consultation. However, the Project has since developed further, which has resulted in the following changes to the site requirements:

- the Gravity Model has indicated that a slightly higher proportion of construction workers would travel from the north, therefore a marginally higher proportion of the spaces are proposed within the northern park and ride facility (around 1,000) relative to the southern park and ride facility, which has been slightly reduced in size to around 900 spaces;
- the induction centre for construction workers is now proposed to be located within the main development site; and
- the postal consolidation facility is now proposed to be located within the southern park and ride facility (refer to **Section 10 Southern Park and Ride**); previously it was indicated that it would be at one of the park and ride sites.

9.2.3. The northern park and ride facility is envisaged to comprise the following:

- car parking areas for around 1,000 spaces;
- minibus and motorcycle parking;
- cycle stands and shelters;
- bus terminus and parking, including shelters;
- perimeter security fencing and lighting;
- a welfare building with toilets, bus drivers' rest room, security and administration offices;
- a security entrance building;
- on-site topsoil storage to facilitate site restoration following cessation of use of the park and ride facility; and
- external areas including roadways, footways, landscaping, water management areas and drainage infrastructure.

9.2.4. It is anticipated that the park and ride facility would be operational seven days a week between 05:00 and 01:00. The movement of buses would respond to when the workers would need to come on and off the construction site. Refer to **Section 5 Socio-economics** for further details.

9.3. Rationale for site selection

9.3.1. Following the Stage 1 consultation, EDF Energy assessed the three northern park and ride site options against the following considerations in order to identify a preferred site:

- consultation responses;
- environmental considerations;
- construction and operational requirements;
- transport;

- socio-economics; and
- planning policy.

9.3.2. This section provides an overview of the matters considered.

a) Consultation responses

9.3.3. Respondents to the Stage 1 consultation were generally supportive of park and ride facilities, with general consensus that the strategy could help to reduce transport effects during the construction phase of the Project. However, concerns were raised regarding some of the site options, primarily in relation to the potential effects on local communities, the surrounding environment and local roads. The main themes raised by respondents in relation to the northern park and ride facility are summarised in **Table 9.1**.

Table 9.1 Northern park and ride site Stage 1 consultation feedback

Site	Main themes raised by respondents to the Stage 1 consultation
Option 1 (Yoxford Road)	<ul style="list-style-type: none"> • Mixed responses to the proximity of the site to the main development site. • No direct access to the A12, which could result in highway safety and capacity issues on part of the B1122. • Potential effects on the rural character of the area and the nearby Special Landscape Area (SLA). • Potential effects on ecology in the surrounding woodland. • Potential effects on the setting of nearby listed buildings (e.g. Grade II* listed Moor Farmhouse) and the operation of neighbouring institutions (e.g. Norwood House). • Distance from residential properties considered to be of benefit to this option.
Option 2 (Darsham) – preferred site option	<ul style="list-style-type: none"> • Well positioned to capture key traffic movements and minimise disturbance to local minor roads. • Proximity to Darsham train station would encourage interchange with rail and potentially reduce road traffic overall. • Potential for legacy station car parking is considered a benefit. • Highway safety concerns at the proposed site access, particularly due to sightlines. • Close to existing development and therefore less intrusive to surrounding countryside or to residential dwellings than other options. • Potential economic benefits for existing businesses, including the petrol station, mini-market and café.
Option 3 (A12/A144 Junction)	<ul style="list-style-type: none"> • Too far from the main development site, with cars needing to be diverted too far north. • Highway capacity concerns at the A12/A144 junction, although identified as having better sightline visibility. • Less disruptive to existing traffic on the A12 than the other options because southbound vehicles turning left into the site access would not need to cross the carriageway. • Considered to be more cramped, less screened and more intrusive in the open countryside compared to the other two options. • Potential effects upon heritage assets, including a number of Grade II listed buildings. • Potential effects on tourism and recreation, in particular to walkers and horse riders on Hinton Lane and the caravan park, golf and shooting school at High Lodge.

9.3.4. Of the three options presented at Stage 1 consultation, more respondents identified Option 2 (Darsham) as an appropriate location for the northern park and ride facility. The fewest number of respondents identified Option 1 (Yoxford Road) as an appropriate location.

b) Environmental considerations

9.3.5. Option 1 (Yoxford Road) is considered to be a constrained site in environmental terms, specifically in respect of landscape and visual impact, especially from the Minsmere Valley SLA to the north. In addition, this option would increase the number of vehicles travelling along the B1122 with potential for amenity effects to the residential properties located along this stretch of the highway.

9.3.6. Along the eastern boundary of Option 2 (Darsham), there are three residential dwellings and there is potential for amenity effects to these properties. In addition, there is potential bat habitat in the woodland along the western boundary. These effects are considered to be capable of mitigation by way of careful layout design and appropriate boundary treatment (such as bunding or fencing).

9.3.7. Option 3 (A12/A144 Junction) has a higher number of residential properties close to the site boundaries than the other two options. However, the combination of existing levels of boundary screening, potential for new planting and scope for layout flexibility is considered to be greater. There is potential bat habitat within existing woodland to the west and north, but it is considered that this could be mitigated. The proposals may have an adverse impact on the setting of the Grade II listed cottage located on the junction of the A12/A144.

9.3.8. Each of the three site options included in the Stage 1 consultation are 'greenfield' sites currently in agricultural use. Option 1 (Yoxford Road) is classified as Agricultural Land Classification (ALC) Grade 2 (very good) land, Option 2 (Darsham) is classified as a mixture of Grade 2 (very good) and Grade 3 (good to moderate) land and Option 3 (A12/A144 Junction) is classified as Grade 3 (good to moderate) land. Although the use of any of the site options would require justification in planning terms, the use of lower classified agricultural land is preferable from a planning policy perspective.

9.3.9. Both Option 1 (Yoxford Road) and Option 3 (A12/A144 Junction) are more distinctly rural in character than Option 2 (Darsham) which makes the latter preferable. Whilst all three options would give rise to potential environmental effects, the increased traffic along part of the B1122 associated with Option 1 (Yoxford Road) and visibility from the Minsmere Valley SLA makes it least favourable in this respect.

c) Construction and operational requirements

9.3.10. There are no significant differences in constructability between the three options, and each of the site options could provide a reasonable layout to serve the purpose required.

9.3.11. The main factor distinguishing the site options in terms of operational considerations is the cost efficiencies in running each of the sites. Option 1 (Yoxford Road), by virtue of its proximity to the main development site, is somewhat preferable to the other two site options because of the reduced costs of running bus services.

d) Transport

9.3.12. Option 2 (Darsham) is in close proximity to Darsham train station and would therefore facilitate worker interchange between rail and bus. As such, it has the potential to reduce overall traffic movements compared with the other site options if workers arrived at the park and ride facility by train rather than by car.

9.3.13. Option 1 (Yoxford Road) could be considered to be the most convenient site for construction workers, as it is closest to the main development site and would not require a diversion of route to reach the park and ride site. However, this option would result in increased traffic through the A12/B1122 junction at Yoxford (which EDF Energy has identified as requiring improvement) and on approximately a 1km stretch of the B1122. The other two site options would avoid additional car movements on the B1122, although this would require a short diversion of 1–2km for a small number of workers joining the A12 from the A1120.

9.3.14. Potential highway safety issues in relation to the access arrangements at Option 1 (Yoxford Road) and Option 3 (A12/A144 Junction) could be resolved through road improvement works, including appropriate junction design. An initial assessment in respect of Option 2 (Darsham) indicated that the proposed junction arrangements could operate safely in all the traffic movement scenarios considered.

9.3.15. On balance, Option 2 (Darsham) is considered to be preferable from a transport perspective as it offers the potential to reduce overall traffic movements by acting as a rail and bus interchange, as well as a car and bus interchange. An A12 location for the park and ride is also considered more suitable than Option 1 (Yoxford Road), as it would enable traffic to be intercepted on the network prior to reaching the B1122.

e) Socio-economics

9.3.16. Option 2 (Darsham) is considered to offer a number of socio-economic benefits, including the potential for increased business to the nearby petrol station, mini-supermarket, cafés and bed and breakfast.

9.3.17. Following cessation of use as a park and ride facility, EDF Energy intends to reinstate the land for agricultural use. However, other parties may apply for planning permission to the local planning authority to retain some parts of the development or to redevelop the site, potentially for legacy car parking associated with Darsham train station. Any application for longer term development would be considered on its merits at the time.

9.3.18. Option 3 (A12/A144 Junction) may generate some increased business activity in the surrounding area, although to a lesser extent compared to Option 2 (Darsham). Businesses with the potential to benefit could include the nearby caravan park and golf course, and, to some extent, Darsham businesses.

9.3.19. Option 1 (Yoxford Road) is considered the least likely to generate socio-economic benefits due to its rural location away from existing businesses. Respondents to the Stage 1 consultation highlighted concerns about the potential for negative effects on the Norwood House care home.

f) Planning policy

9.3.20. Traffic management measures that seek to encourage the use of public transport and reduce the need to travel by private car are generally supported by planning policy at all levels.

9.3.21. The proposals for the Project are being developed having regard to the policy requirements set out in NPSs EN-1 (Ref.1.1) and EN-6 (Ref.1.2), together with other relevant national and local planning policy and guidance as relevant. Key national and local planning policies are referred to, where relevant, throughout this Stage 2 Consultation Document. Further analysis of the relevant policies and guidance will be set out in more detail at the next stage of consultation and as part of the application for development consent. Refer to **Section 3 Planning Policy Context** for further details.

9.3.22. NPS EN-1 recognises that construction of a nationally significant energy infrastructure project may give rise to substantial impacts on the surrounding transport infrastructure. Consideration and mitigation of such impacts is promoted as an essential part of the Government's policy objectives for sustainable development.

9.3.23. NPS EN-1 requires that where transport-related mitigation is needed, demand management measures (i.e. measures that reduce the demand for road-based travel) should be considered before the provision of new inland transport infrastructure. It also indicates that regard should be had to the cost-effectiveness of demand management measures and to the aim of securing more sustainable patterns of transport development when considering mitigation measures.

9.3.24. Option 1 (Yoxford Road), being closest to the main development site, would be more cost-effective than the other options. However, Option 2 (Darsham) performs better in sustainability terms due to the earlier interception of workers on the highway network, proximity of the railway station and potential for interchange.

9.3.25. Policies in the Suffolk Coastal District Local Plan (Ref. 3.6) would be relevant to the development of a park and ride facility on any of the sites. Whilst none clearly favour one option over another, Policy DM23 seeks to preserve residential amenity and Policy AP13 seeks to preserve the quality of SLAs.

g) Site selection conclusions

9.3.26. On the basis of the above considerations, EDF Energy has selected Option 2 (Darsham) as its preferred northern park and ride site. This is because it is considered to be preferable over the other two site options in terms of consultation feedback, transport and socio-economics. Option 3 (A12/A144 Junction) is being held in reserve. It would only be taken forward if the Darsham site proved to be unsuitable in light of feedback from consultations or further environmental or technical studies. Option 1 (Yoxford Road) is least favourable in terms of consultation feedback, environmental considerations, socio-economics and planning policy. The focus of the rest of this section is therefore on Option 2 (Darsham).

9.4. Site description

9.4.1. The Darsham park and ride site comprises approximately 14ha of primarily agricultural land, located to the west of the village of Darsham. It lies to the west of the A12, to east of the East Suffolk railway line and to the north of Darsham train station.

9.4.2. As shown on **Figure 9.2**, the western boundary of the site is defined, in part, by the railway line and Little Nursery, a parcel of woodland. The northern boundary is defined by agricultural fields. The eastern boundary is defined by the A12 at the northern and southern end, and

in the middle follows the line of the rear boundaries of the properties along the A12 (Moat Hall, Darsham Cottage and White House Farm Bed and Breakfast). Part of the site encompasses the A12 carriageway and pavement, including an abnormal load lay-by on the western side of the road.

9.4.3. In addition to those properties adjoining the site, there are also residential properties located on the opposite side of the A12 (Hall Drive, Stranraer, Railway Cottage, White Oaks and The Granary), as well as a number of businesses including a petrol station with mini-supermarket, a café and a garden centre (also with a café). Planning permission has been granted for an 82-bed hotel on the opposite side of the A12, but this is not yet under construction.

9.4.4. The site is relatively open and there are views across the site from individual properties in close proximity, as well as adjoining roads and nearby footpaths. However, views of the site from within the wider landscape are relatively contained by local variations in landform, woodland and vegetation.

9.4.5. There are a number of Public Rights of Way (PRoW) in the vicinity of the site, including:

- a footpath (E-216/008/0) on the opposite side of the A12 at the southern end of the site, leading southwards away from the site;
- a footpath (E-216/004/0) approximately 1km to the north, running broadly parallel with the site;
- a footpath (E-584/010/0) approximately 500m to the west of the site; and
- three further footpaths east of the A12, within 1km of the site.

9.4.6. There are ponds within the site and a small watercourse is located approximately 250m to the south-west (which flows approximately 1.2km to the Minsmere Old River). The River Yox lies approximately 150m to the south-east. The site is within Flood Zone 1. The wider area is underlain by the Lowestoft Diamicton (boulder clay) which overlies the Lowestoft sand and gravels (Secondary Superficial Aquifer) and the Crag Ground, comprising sands, gravels, silts and clays (Principal Aquifer). A licensed groundwater abstraction is located on the southern edge of the site.

9.4.7. The site is within the 'Ancient Estate Claylands' landscape character type, as identified in the Suffolk Landscape Character Assessment (Ref. 9.1), which is characterised by arable land use, with fields interspersed with deciduous copses. To the south, the landscape is characterised by a more organic pattern of hedged pastoral fields and tree belts, forming part

of the 'Rolling Estate Claylands' landscape character type which occupies the rolling valley sides of the Minsmere River to the south of the site, and includes Yoxford and Darsham.

9.4.8. The following designations and features characterise the wider context:

- landscape designations, namely the Minsmere SLA (approximately 600m to the south) and the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) (approximately 3.5km to the east);
- ecological sites, namely: Minsmere-Walberswick Heaths and Marshes (approximately 3.4km to the east), which is a Special Area of Conservation (SAC), Site of Special Scientific Interest (SSSI), Special Protection Area (SPA) and Ramsar site; Dew's Pond SAC (approximately 1.7km to the north-west); Potton Hall Fields SSSI (approximately 4.2km to the east); Westleton Heath National Nature Reserve (NNR) (approximately 4.8km to the north-east); Suffolk Coast NNR (approximately 4.5km to the north-east); and Darsham Marshes County Wildlife Site (CWS) (approximately 1km to the south); and
- built heritage features, namely the Grade II listed Darsham Old Hall (approximately 500m to the south-east); the Grade II listed lodge at Cockfield Hall (approximately 800m to the south-west); the Grade I listed Darsham Church; the Grade II* listed Darsham House; and various Grade II listed buildings within the Darsham Conservation Area (approximately 1.5km to the east).

9.4.9. Suffolk Coastal District Council (SCDC) has declared three Air Quality Management Areas (AQMAs) in its boundary, due to elevated monitored concentrations of ambient nitrogen dioxide (NO₂). The nearest AQMA to the site is approximately 10km, along the A12 at Stratford St Andrew. Air quality monitoring has been undertaken by EDF Energy to establish baseline air quality, using continuous monitors for oxides of nitrogen (NO_x), nitric oxide (NO), NO₂ and particulates (PM₁₀), and also passive diffusion tubes for NO₂ and sulphur dioxide (SO₂). Overall, the monitoring undertaken by EDF Energy and separately by SCDC has shown generally good air quality throughout the study area. The concentrations along most local roads, outside AQMAs, are well within the limits of the air quality objective.

9.5. Masterplan

9.5.1. This section describes the current indicative masterplan for the Darsham park and ride facility, and how the site requirements set out in **Section 9.2** could be

provided. This section is structured to describe the following key elements of the masterplan:

- general arrangement overview;
- access;
- buildings/structures and lighting; and
- landscaping and drainage.

9.5.2. In describing the masterplan, details are provided of the various factors which have informed the emerging masterplan.

a) General arrangement overview

9.5.3. An overriding aim has been to site the development as far as is reasonably practicable to the southern end of the

site, concentrating the key operational elements around the proposed access junction, as well as the train station.

9.5.4. Figure 9.2 illustrates the masterplan, which includes provision for parking areas, a bus terminus and an internal road network accessed off the A12. Parking spaces are shown for around 1,000 cars (with a small additional provision for accessible spaces), as well as provision for minibuses/vans, motorcycles and park and ride buses. Additionally, a small number of spaces have been provided for pick-ups and drop-offs near the site entrance. Stands and a shelter for bicycles are also indicated near the bus stops. A turning area is provided at the site entrance barrier to allow vehicles to be turned away if necessary.

Figure 9.2 Darsham park and ride site masterplan



9.5.5. The masterplan includes an administrative building and other small structures, including bus shelters.

9.5.6. Existing boundary vegetation would be retained and bunding and/or fencing around other boundaries would be created to provide screening. Internally, grassed areas and swales would be created around the areas of hardstanding. Security fencing and lighting would also be provided around the perimeter of the facility.

b) Access

9.5.7. The site would be accessed directly off the A12. Access via Willow Marsh Lane has been considered, however the proposed access off the A12 is preferred due to the reduced 40mph traffic speed along this stretch of the A12 (compared to 60mph at the Willow Marsh Lane junction).

9.5.8. Comments were raised during the Stage 1 consultation about the relationship of the proposed access with existing businesses and the proposed hotel/eco-lodge on the opposite side of the A12. An initial assessment indicates that the junction would be able to operate safely, although this will be subject to further consideration.

9.5.9. The impact upon the existing abnormal load layby on the A12 was raised by some respondents to the Stage 1 consultation. The layby appears to be rarely used for its intended purpose, although it is used for short-term parking by lorries and other vehicles, particularly for visits to the mini-supermarket and café at the petrol station site. Through discussion with Network Rail and SCC it has been established that the northbound layby could be re-located or an automated solution for the operation of the level crossing by lorries carrying abnormal loads could be introduced. In the latter option a reduced length or re-located layby may still be retained. Pedestrian access would be via the existing public footway connection between Darsham train station and the proposed entrance into the park and ride facility.

c) Buildings, structures and lighting

9.5.10. A welfare, security and amenity building, as well as shelters for those using the site will be provided. These buildings and structures are likely to be single-storey, although their scale and design is yet to be finalised.

9.5.11. Lighting would be provided at the perimeter of the facility and within the car parking areas for security and safety reasons. Regard will be given to minimising potential effects on neighbouring residential occupiers and ecological receptors, given that dark skies are a valued feature in the locality. Details of the lighting strategy will

be provided at a subsequent stage of consultation, with features likely to include the use of appropriate lux levels and directional lighting.

d) Landscaping and drainage

9.5.12. The site benefits from existing vegetation on the boundary with the A12. This would be supplemented by additional planting, where necessary, to help screen the development from the carriageway. The proposed landscaping scheme, illustrated in **Figure 9.2**, has been designed specifically to minimise potential effects on ecological, heritage and landscape and visual receptors. A minimum 20m buffer and sustainable drainage infrastructure (proposed as swales) would separate the parking area from Little Nursery woodland. This would help minimise the potential effects of noise and light spill on the woodland habitat.

9.5.13. Prior to any hardstanding being installed, topsoil (and potentially subsoil) would be removed and the site levelled at its southern and western ends, due to existing site topography. Any excess material would be stored on-site and used to create bunds at appropriate locations. The site masterplan shows the provision of a 3m high spoil bund along part of the eastern boundary, which would provide a noise and visual buffer between the development and the closest existing residential dwellings (Moat Hall, Darsham Cottage and White House Farm).

9.5.14. The masterplan proposals have avoided existing ponds. Mitigation may be required if great crested newts are found to be present.

9.5.15. Sustainable Urban Drainage Systems (SUDS) would be required. The masterplan illustrates swales in order to minimise run-off from hard surfaces and sediment generation.

9.6. Preliminary environmental information

9.6.1. **Table 9.2** details the key environmental considerations that have informed the evolution of the masterplan. It also identifies measures which may be required to avoid or mitigate potential effects arising during both the construction and operational phases of the park and ride facility. The post-operational phase (i.e. removal of the park and ride facility once it is no longer required by EDF Energy to support the construction of Sizewell C) is not anticipated to result in effects that are greater than those predicted during the construction phase.

Table 9.2 Preliminary environmental information

Topic	Key considerations
Landscape and visual	<p>Construction</p> <ul style="list-style-type: none"> Changes to local landscape character would arise as the site would change, albeit not permanently, from an area of agricultural land to a construction site. Changes to the short distance views would arise. These changes would be experienced by surrounding residential properties and roads, notably Moat Hall, Darsham Cottage, White House Farm and the A12/Main Road, which all adjoin the site's eastern/south-eastern boundary. Changes would relate to the movement of vehicles and lighting associated with the facility. Changes to mid to long distance views would arise. These changes would be experienced by surrounding properties, footpaths and roads, albeit views would be filtered by intervening vegetation and landform, including a woodland belt along the western boundary of the site. <p>Operation</p> <ul style="list-style-type: none"> Changes to landscape character would arise as the park and ride facility would include new structures, ancillary features (including lighting), transport infrastructure and landscape features. Short distance views of the operational development would be possible from surrounding residential properties and roads. However, proposed earthworks and planting along the site boundaries (see 'mitigation measures') would provide some screening. Mid to long distance views of the operational development are likely to be possible from surrounding properties, footpaths and roads, albeit views would be partly screened by intervening vegetation/landform and proposed boundary treatments. The operational facility would be seen in the context of the A12. <p>Mitigation measures</p> <ul style="list-style-type: none"> Appropriate lux levels and directional lighting would be used during construction and operation to minimise the potential effects on ecological receptors and neighbouring residential occupiers. Existing woodland would be retained and bunding and fencing would be established around other boundaries to screen views of low-level buildings/activity and to help integrate the development into the landscape. The footprint of the development and building heights would be minimised as far as reasonably practicable. The majority of buildings and ancillary features proposed are located to the south of the site, closest to the A12.
Terrestrial ecology and ornithology	<p>Construction</p> <ul style="list-style-type: none"> Potential loss of terrestrial habitat features suitable for use by great crested newts. Potential disturbance from noise and lighting to bats and breeding birds within Little Nursery woodland. <p>Operation</p> <ul style="list-style-type: none"> Potential disturbance from noise and lighting to bats and breeding birds within the Little Nursery woodland. There is the potential for surface water discharge (both in terms of water quality and quantity) to affect the habitats and species of the small watercourse located approximately 250m to the south-west, which flows into the Minsmere Old River 1,250m downstream. <p>Mitigation measures</p> <ul style="list-style-type: none"> A 20m landscape buffer zone would separate the parking area from Little Nursery and help minimise the potential effects of noise and light spill on the woodland habitat. Existing ponds on-site have been avoided. If great crested newts are found to be present, a programme of mitigation would be carried out. SUDS would be used to manage surface water flows and any changes to natural land drainage.
Amenity and recreation	<p>Construction</p> <ul style="list-style-type: none"> Potential for diminished amenity value and experience gained by users of nearby PRoW due to construction activities, increased traffic movements, noise, dust and other emissions, and views of the construction works. <p>Operation</p> <ul style="list-style-type: none"> Potential for diminished amenity value and experience gained by users of nearby PRoW due to general site activity, traffic, noise, dust and other emissions, and views of the facility. <p>Mitigation measures</p> <ul style="list-style-type: none"> Existing boundary vegetation would be retained and bunding and/or fencing around other boundaries of the development would be created to reduce potential effects on PRoW.

Table 9.2 Preliminary environmental information

Terrestrial historic environment	<p>Construction</p> <ul style="list-style-type: none"> • Potential for effects on undesignated archaeological features if present within the site (the geophysical survey detected possible ditched enclosures on the eastern edge of the site; these may relate to undated linear cropmark features identified from aerial photographs, located to the east of the A12). • Potential for temporary effects to the setting of designated heritage assets in the vicinity of the site. <p>Operation</p> <ul style="list-style-type: none"> • Potential for indirect effects to the setting of designated heritage assets in the vicinity of the site. <p>Mitigation measures</p> <ul style="list-style-type: none"> • If archaeological remains are present on the site, EDF Energy would work with Suffolk County Council Archaeological Service (SCCAS) to devise a suitable mitigation strategy. This could involve mitigation by design, also known as preservation in-situ, or set-piece excavation and recording of archaeological remains, also known as preservation by record, or a combination of the two. • Existing boundary vegetation would be retained and bunding and/or fencing around other boundaries of the development would be created.
Soils and agriculture	<p>Construction</p> <ul style="list-style-type: none"> • Development would result in the temporary loss of Grade 2 (very good) and Grade 3 (good to moderate) agricultural land. • Development of the site would require soil stripping and stockpiling, which could result in soil damage/loss of fertility. <p>Operation</p> <ul style="list-style-type: none"> • There are no additional considerations for soils relating to the operation of the facility. Agricultural production would cease for the duration of the facility operating, leading to a temporary effect on the associated farm business (i.e. a reduced overall agricultural production area). <p>Mitigation measures</p> <ul style="list-style-type: none"> • For areas of land that would be restored to agricultural use, appropriate soil handling procedures would be used. Detailed arrangements would be developed in consultation with relevant stakeholders, in line with established soil management principles.
Noise and vibration	<p>Construction</p> <ul style="list-style-type: none"> • Occupiers of nearby dwellings and other sensitive receptors could potentially experience noise effects from site clearance and construction. <p>Operation</p> <ul style="list-style-type: none"> • Occupiers of nearby residential properties and other sensitive receptors currently experience relatively high noise levels from existing traffic on the A12. In this context, and given the distances between the facility and the closest receptors, additional effects are anticipated to be minimal. <p>Mitigation measures</p> <ul style="list-style-type: none"> • Following further assessment work and if found to be necessary, screening (in the form of bunding or fences) could be introduced.
Air quality	<p>Construction</p> <ul style="list-style-type: none"> • Additional HGVs and light goods vehicles accessing the site via local roads would result in associated emissions to air. • Dust could be generated from site clearance and levelling, as well as from material stockpiling and management activities with the potential for nuisance and health effects. However given the existing low PM₁₀ ambient concentration, such effects are anticipated to be minimal. Effects on ecological receptors are also anticipated to be minimal as a result of the distance to the receptors. <p>Operation</p> <ul style="list-style-type: none"> • Potential adverse effects of vehicle emissions along transport routes to and from the site (recognising that the park and ride site is, in itself, a mitigation measure which serves to reduce vehicle movements and emissions borne by the Project). <p>Mitigation measures</p> <ul style="list-style-type: none"> • Best practice dust management techniques would be introduced to control dust generated during construction, including preparation and use of a dust management plan. • Existing boundary vegetation would be retained and bunding and/or fencing around other boundaries of the facility would be created to help mitigate potential construction air quality effects. • Following further assessment work, additional mitigation measures could be introduced where necessary. • The site's proximity to Darsham train station would allow some workers to arrive by train, reducing the potential air quality effects associated with private car use.

Table 9.2 Preliminary environmental information

<p>Land quality</p>	<p>Construction</p> <ul style="list-style-type: none"> • Potential disturbance of existing contamination. • Potential risks to controlled waters, users of adjacent sites, future and existing services/infrastructure, construction workers and vegetation, which are associated with soil handling procedures and re-use of soil to balance the earthworks, create construction platforms and bunds, and ultimately to restore the site. <p>Operation</p> <ul style="list-style-type: none"> • No significant impacts are anticipated during operation as pollution prevention measures for vehicles using the park and ride facility would be built into the design. <p>Mitigation measures</p> <ul style="list-style-type: none"> • At this stage, no mitigation measures are considered necessary beyond those embedded in the design of the masterplan (e.g. the re-use of construction materials where they are suitable and would not cause harm to the environment). • During construction, the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with the appropriate management plans. • Potential risks to the public and construction workers from any potential contamination would be managed through standard health and safety and risk assessment procedures.
<p>Groundwater</p>	<p>Construction</p> <ul style="list-style-type: none"> • Disturbance of soils with the potential to reduce infiltration to groundwater. However, as this is a greenfield site and the area is underlain by boulder clay, the risk to groundwater quality is low. <p>Operation</p> <ul style="list-style-type: none"> • The creation of areas of hardstanding could potentially reduce infiltration to groundwater. <p>Mitigation measures</p> <ul style="list-style-type: none"> • During construction, any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines. • Any further potential mitigation measures would be considered, as necessary, throughout the Environmental Impact Assessment (EIA) process.
<p>Surface water</p>	<p>Construction and operation</p> <ul style="list-style-type: none"> • A small watercourse is located approximately 250m to the south-west of the site and flows into the Minsmere Old River (1,250m downstream). It is possible that this watercourse could be impacted during the construction phase by surface water run-off and during the operational phase by increased storm flow rates. <p>Mitigation measures</p> <ul style="list-style-type: none"> • Management of surface water changes to natural land drainage would be managed via the SUDS management techniques and is built into good practice design. For the operational phase, the swales would support filtration and a pond would provide the means to attenuate any storm flows.

9.7. Next steps

9.7.1. Further studies and assessments will be undertaken to inform the ongoing development of the masterplan. These include technical surveys (e.g. geotechnical investigations to confirm the suitability of the site from a constructability perspective), as well as environmental studies and assessments (set out in **Table 9.3**) to inform the EIA.

9.7.2. These studies and assessments will be considered in the context of the feedback to the Stage 2 consultation, as well as ongoing engagement thereafter.

9.7.3. It is intended that prior to submission of an application for development consent, EDF Energy will consult upon its preferred proposals, underpinned by details of the initial findings of the EIA, including baseline environmental information and the impact assessment. Refer to **Section 12 Related Assessments and Approaches** for details.

Table 9.3 Further environmental studies and assessments

Topic	Further studies and assessments
Landscape and visual	<ul style="list-style-type: none"> A full Landscape and Visual Impact Assessment (LVIA) will be undertaken to assess and describe the effects of the park and ride facility. Preparation of the LVIA will influence design development as part of the iterative design process.
Terrestrial ecology and ornithology	<ul style="list-style-type: none"> Further surveys are to be carried out for species, including great crested newts.
Amenity and recreation	<ul style="list-style-type: none"> A full amenity and recreation assessment will be undertaken to assess and describe the effects of the proposed development, drawing on the landscape and visual, noise and vibration, air quality and transport assessments. Work leading to the preparation of the assessment will inform the iterative design process.
Terrestrial historic environment	<ul style="list-style-type: none"> The geophysical survey has identified possible ditched enclosures on the eastern edge of the site. Trial trench excavation will be undertaken to determine presence/absence, nature, date and extent of any surviving archaeological remains.
Soils and agriculture	<ul style="list-style-type: none"> A survey will be undertaken to determine soil quality, along with an assessment of the nature of the agricultural enterprise.
Noise and vibration	<ul style="list-style-type: none"> Noise modelling will be conducted for construction and operational noise, as well as noise from traffic generated during construction and operation. Mitigation will be devised accordingly and the models re-run to calculate predicted noise levels.
Air quality	<ul style="list-style-type: none"> No further surveys are planned, due to the availability of sufficient existing data and a clear understanding of best practice measures for the control of construction dust. Changes in air quality as a result of road traffic associated with construction and operation will be modelled, as required. However, it is anticipated that construction vehicle numbers would be very low. Therefore, is not anticipated that modelling is required to assess road traffic air quality effects during construction.
Land quality	<ul style="list-style-type: none"> A Phase 1 ground contamination desk-based study has been undertaken which identified very low, to low risks to human and controlled waters receptors, and low risks to property receptors. An intrusive geotechnical investigation will be undertaken to inform design and assess geotechnical constraints. This will include geo-environmental testing to assess the potential for contamination.
Groundwater	<ul style="list-style-type: none"> The geological and hydrogeological understanding of the site will be updated based on future geotechnical investigations, including information on depth to groundwater.
Surface water	<ul style="list-style-type: none"> A surface water survey has been undertaken. No further assessment is necessary due to the integration of SUDS into the masterplan.

10. Southern Park and Ride

10.1. Introduction

10.1.1. As set out in **Section 2 Vision and Objectives**, EDF Energy's overall objective is that Sizewell C would be designed and implemented to high environmental standards, taking full account of the sensitivity of its location. In developing its transport strategy, EDF Energy has sought to take account of the local highway network in the development and design of its proposals. Opportunities have been sought to limit the traffic and traffic-related effects of moving goods and people through the use of non-road based transport where feasible, and through the careful siting and design of its proposals. These principles have guided the transport proposals in relation to the park and ride facilities.

10.1.2. EDF Energy's strategy for managing the movement of the workforce during the peak construction phase of Sizewell C is set out in **Section 6 Transport**. That section explains that park and ride sites would play an important role in reducing the amount of additional traffic generated by the construction workforce on local roads and through local villages.

10.1.3. The transport strategy (**Section 6 Transport**) details the rationale for proposing two park and ride facilities, one to the north and one to the south of the main development site. The transport strategy also explains that these should be located close to the main arterial A12 route to be effective in capturing traffic generated by the construction workforce. EDF Energy's Sizewell C Gravity Model (the Gravity Model), which estimates the residential location of the peak construction workforce (refer to **Section 5 Socio-economics**), has informed the required number of car parking spaces at each of the park and ride facilities.

10.1.4. For the southern park and ride site around 900 spaces are likely to be required, together with other facilities and infrastructure to operate the facility, as well as on-site spoil storage areas to retain the arisings from the construction of the facility. At the Stage 1 consultation, EDF Energy consulted on the possibility of co-locating a lorry park, an induction centre for construction workers and a postal consolidation facility at the southern park and ride site. EDF Energy's preference is now for the postal consolidation facility to be located at the southern park and ride site (with no comparable facility to be located at the northern park and ride site). EDF Energy's preference is now for the induction centre to be located at the main development site (refer to **Section 7 Main Development Site**) as this offers the greatest efficiencies for the Project in relation to the management and

integration of induction activities into the wider operation of the construction site and accommodation campus.

10.1.5. A lorry park no longer forms part of EDF Energy's proposals. Instead, heavy goods vehicles (HGVs) would be managed by alternative methods. However, a Traffic Incident Management Area is proposed at the northern end of the park and ride facility. This area is to be used in the event of an incident on the roads leading to the Sizewell C main development site that would result in the need to park cars, buses and HGVs for a prolonged period of time until the incident is cleared. Refer to **Section 6 Transport** for further details on the strategy for managing movements to and from the Sizewell C site.

10.1.6. At the Stage 1 consultation, EDF Energy presented three site options for the siting of the southern park and ride as follows (refer to **Figure 10.1**):

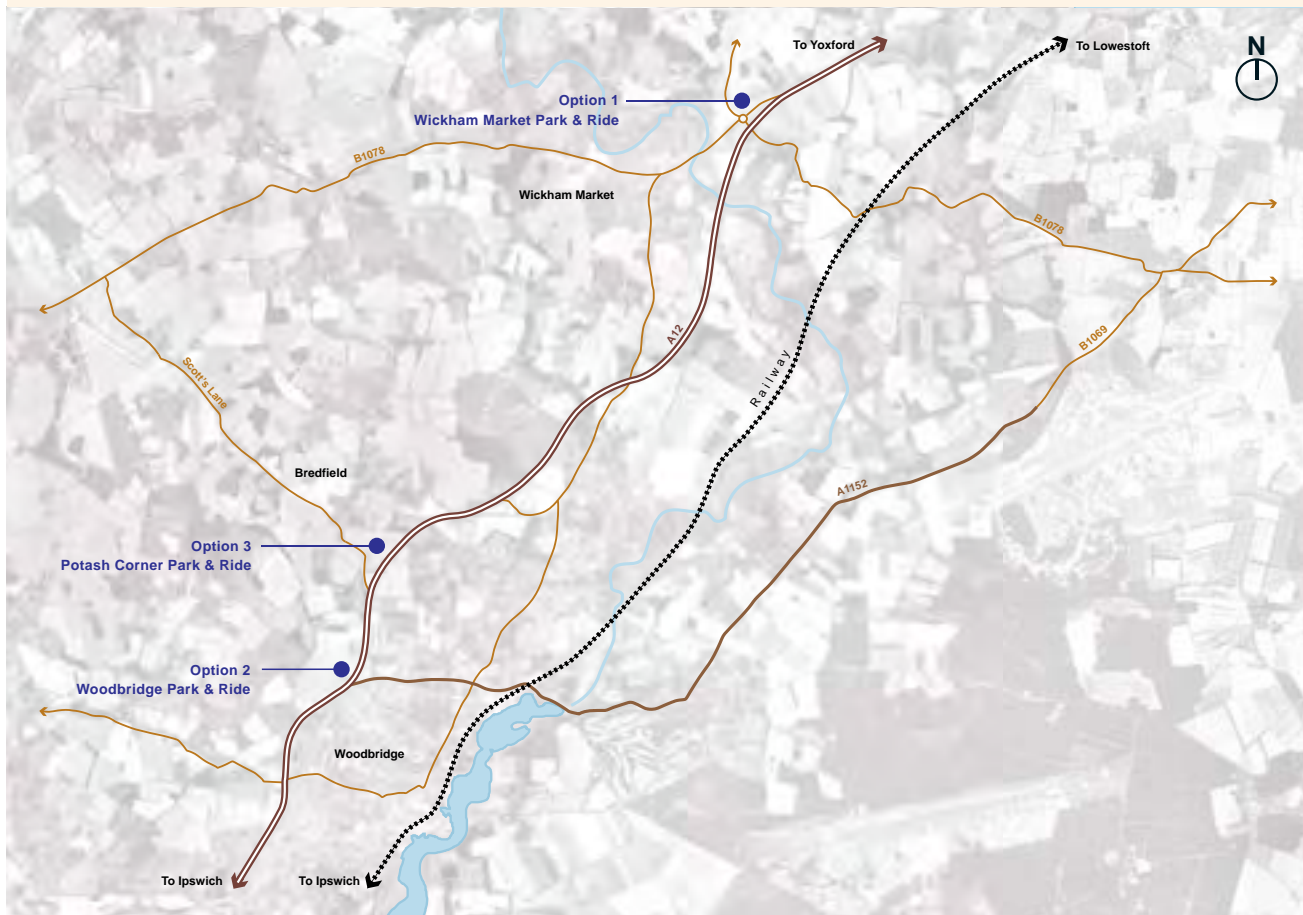
- Option 1 (Wickham Market) – identified as the preferred option at Stage 1;
- Option 2 (Woodbridge); and
- Option 3 (Potash Corner).

10.1.7. At this Stage 2 consultation, Wickham Market remains EDF Energy's preferred site for the southern park and ride. Until further studies at Wickham Market have been completed, EDF Energy is holding the Option 2 (Woodbridge) site in reserve, but it would only be taken forward if the Wickham Market site proved unsuitable in light of feedback from consultation, or further environmental and technical studies. Refer to **Section 10.3** for details of the rationale for site selection.

10.1.8. EDF Energy has undertaken initial studies to increase its understanding of the environmental effects of developing a park and ride facility on the Wickham Market site, including considering impacts on residential and other receptors. The Stage 1 consultation preferred site at Wickham Market was subject to further studies to increase understanding of the implications and constraints of developing a park and ride facility in this location. The findings of archaeological investigations have resulted in a new proposed site boundary being identified (refer to **Figure 10.3**), which encompasses land to the north-east of the site.

10.1.9. Further details about the proposed southern park and ride facility on the revised Wickham Market site, are set out in this section as follows:

Figure 10.1 Stage 1 consultation site options for the southern park and ride site



- **Section 10.2** outlines EDF Energy's requirements for the southern park and ride facility;
- **Section 10.3** details the rationale for EDF Energy's selection of the revised Wickham Market site as the preferred location for the southern park and ride facility, including details of how the feedback from the Stage 1 consultation informed this;
- **Section 10.4** describes the Wickham Market site;
- **Section 10.5** describes the masterplan proposals, with details of how these have evolved having regard to environmental considerations and feedback from consultation, amongst other things;
- **Section 10.6** details the key environmental considerations that would arise from the construction, operation and removal (referred to as post-operation) phases as well as identifying potential measures which may be required to avoid or mitigate potential effects; and

- **Section 10.7** details the next steps which will inform the ongoing development of the southern park and ride masterplan, including further studies and surveys.

10.2. Site requirements

10.2.1. As explained in **Section 6 Transport**, the proposals for park and ride facilities have been shaped by assumptions, namely:

- the size of the workforce at peak construction (refer to **Section 5 Socio-economics**);
- the size of the car park at the main development site (refer to **Section 7 Main Development Site**), which is proposed to provide 1,000 spaces to accommodate workers who live close to the site and east of the A12, as well as those workers who may have operational or personal circumstances which require the use of the on-site car park; and

- the distribution of anticipated demand between the northern and southern park and ride sites, which has been informed by the Gravity Model updates (refer to **Section 5 Socio-economics**).

10.2.2. The broad requirements for the southern park and ride facility remain similar to those set out at the Stage 1 consultation. However, the Project has since developed, which has resulted in the following changes to the site requirements:

- the Gravity Model has indicated that a slightly higher proportion of construction workers would travel from the north, therefore, the size of the southern park and ride facility has been slightly reduced in size to around 900 spaces;
- the induction centre for construction workers is now proposed to be located within the main development site, rather than at one of the park and ride sites;
- the postal consolidation facility is now proposed to be at the southern park and ride site, due to its proximity to larger distribution centres in Ipswich. Previously it was indicated that it could be in either of the sites; and
- the proposal to include a lorry park with space for between 50 to 100 HGVs at the southern park and ride site has been discounted because HGVs would be managed by alternative methods (refer to **Section 6 Transport**). However, a Traffic Incident Management Area is included to enable HGVs to be held in the event of an emergency.

10.2.3. The southern park and ride facility is, therefore, envisaged to comprise:

- car parking areas for around 900 spaces;
- a postal consolidation facility;
- a Traffic Incident Management Area to enable HGVs to be held in the event of an emergency;
- minibus and motorcycle parking;
- cycle stands and shelters;
- bus terminus and parking, including shelters;
- perimeter security fencing and lighting;
- a welfare building comprising toilets, bus drivers' rest room, security and administration offices;
- a security entrance building;

- on-site topsoil storage to facilitate site restoration following cessation of use of the park and ride facility; and
- external areas including roadways, footways, landscaping, water management areas and drainage infrastructure.

10.2.4. It is anticipated that the park and ride facility would be operational seven days a week between 05:00 and 01:00. The movement of buses would respond to when the workers would need to come on and off the construction site. Refer to **Section 5 Socio-economics** for further details.

10.3. Rationale for site selection

10.3.1. Following the Stage 1 consultation, EDF Energy assessed the three southern park and ride site options against the following considerations in order to identify a preferred site:

- consultation responses;
- environmental considerations;
- construction and operational requirements;
- transport;
- socio-economics; and
- planning policy.

10.3.2. This section provides an overview of the matters considered.

a) Consultation responses

10.3.3. Respondents to the Stage 1 consultation were generally supportive of park and ride facilities, with general consensus that the strategy could help to reduce transport impacts during the construction phase of the Project. However, concerns were raised regarding some of the site options, primarily in relation to the potential effects on local communities, the surrounding environment and local roads. The main themes raised by respondents in relation to the southern park and ride facility are summarised in **Table 10.1**.

10.3.4. There was mixed feedback in relation to the suggestion of using the park and ride facility for freight management purposes. However, as explained in **Section 6 Transport**, this no longer forms part of the proposals for the southern park and ride facility. Therefore, this is not discussed any further in this section.

Table 10.1 Southern park and ride site – Stage 1 consultation feedback

Site	Main themes raised by respondents to the Stage 1 consultation
Option 1 (Wickham Market) – Stage 1 preferred site option	<ul style="list-style-type: none"> • Likely to intercept more cars than other options due to proximity to the main development site. • Ease and safety of access to the A12 via a slip road were considered to be beneficial, albeit some concerns were raised over the potential for traffic impacts on the adjacent roundabout. • Limited effects on residential amenity. • Potential effects on the neighbouring Special Landscape Area (SLA), conservation areas and listed buildings. • Potential effects on archaeology, in particular the former Romano-British settlement of Hacheston.
Option 2 (Woodbridge)	<ul style="list-style-type: none"> • Greater distance from the main development site may result in fewer car journeys being intercepted. • Benefit of intercepting trips earlier on the A12, leading to reduced traffic on the A12 north of Woodbridge. • Direct access to the Woods Lane roundabout considered to be beneficial, although this could exacerbate existing congestion problems at this roundabout. • Proximity to residential areas and schools and associated potential for adverse effects. • Potential effects on the landscape, conservation areas and listed buildings. • The principle of development west of the A12, with the potential for setting a precedent that makes future development more difficult to resist.
Option 3 (Potash Corner)	<ul style="list-style-type: none"> • Highway safety concerns due to a new access and increased traffic levels. • Impact on residential amenity due to close proximity to Bredfield village.

b) Environmental considerations

10.3.5. The three site options put forward at the Stage 1 consultation have different and varying degrees of environmental constraints. Option 1 (Wickham Market), as presented at the Stage 1 consultation, has high archaeological potential, as well as longer distance landscape sensitivity (notably views from Wickham Market and from the River Deben Special Landscape Area (SLA)). Option 2 (Woodbridge) lies on the west side of the A12 beyond the built-up area of Woodbridge and has similar long distance landscape and visual considerations. It may also have some potential for unrecorded archaeology. Option 3 (Potash Corner) has a number of residential dwellings overlooking the site in a more 'intimate' village setting. The site is also crossed by Public Rights of Way (PRoW) and there is woodland/ditch habitat along its eastern and northern boundaries.

10.3.6. Each of the three site options are 'greenfield' sites in current agricultural use. Option 1 (Wickham Market) is classified as Agricultural Land Classification (ALC) Grade 3 (good to moderate) land, whereas Option 2 (Woodbridge) and Option 3 (Potash Corner) are classified as Grade 2 (very good) land. Although the use of any of the site options would require justification in planning terms, the temporary development of lower classified agricultural land would normally be preferable under NPS EN-1 (Ref. 1.1) and the National Planning Policy Framework (Ref. 3.5).

10.3.7. Option 1 (Wickham Market) and Option 2 (Woodbridge) are considered to give rise to a similar overall level of likely environmental effects. Greater likely environmental effects are predicted in connection with Option 3 (Potash Corner) due to the greater quantity of, and proximity to, sensitive receptors.

c) Construction and operational requirements

10.3.8. There are no significant differences in constructability between the three site options presented at the Stage 1 consultation. Each site could provide a reasonable layout to serve the purpose required.

10.3.9. Option 1 (Wickham Market), as presented in the Stage 1 consultation (refer to **Figure 10.2**), has archaeological sensitivities which have been investigated further since the Stage 1 consultation. This has resulted in the identification of a new site boundary (refer to **Figure 10.3**), effectively moving most of the site to land immediately to the north-east. Subject to appropriate masterplan design and mitigation, this issue is not considered to prejudice the constructability of a park and ride facility on the new site.

10.3.10. Option 2 (Woodbridge) would be least constrained in terms of siting. The Option 3 (Potash Corner) site is constrained by PRoW across and alongside

the site, as well as several dwellings overlooking the site. Achieving a safe site access for Option 3 may be more difficult than for the other two site options.

10.3.11. The main factor distinguishing the sites in terms of operational considerations is the cost efficiencies of running each of the site options. Option 1 (Wickham Market), by virtue of its proximity to the main development site, is preferable over the other two site options in this regard, due to the reduced costs of running bus services.

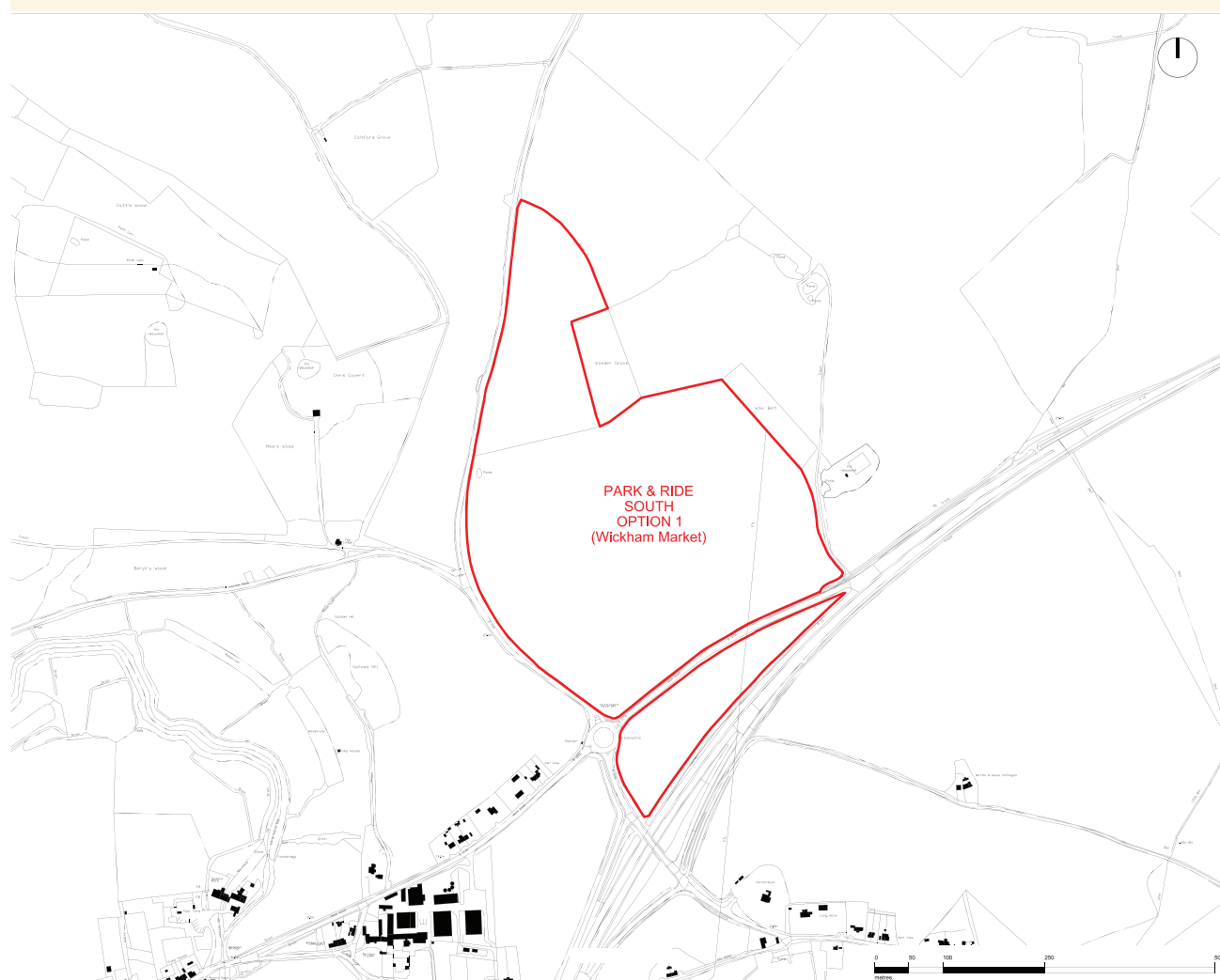
d) Transport

10.3.12. While all site options are in a good location for intercepting worker traffic from the south, Option 1 (Wickham Market) is considered to be in the optimal

position. It is closest to the main development site, located just before the single lane stretch of the A12 northbound through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham. This site is also best placed to intercept any traffic travelling towards the site on the B1078 via Wickham Market and the B1116 through Hacheston. Reducing traffic impacts on this section of the A12 is an important role of this site, in accordance with the transport strategy (refer to **Section 6 Transport**).

10.3.13. Option 1 (Wickham Market) has good access to and from the A12, with slip roads in each direction allowing all southbound and northbound car and bus traffic to access the site. Some local concerns have been raised about the potential for delays at the junction of the B1078 and B1116. However, EDF Energy does not

Figure 10.2 Site location plan of Option 1 (Wickham Market) consulted upon at Stage 1



anticipate that the scale of additional traffic is likely to give rise to any significant highway safety or congestion problems at this location. This will be subject to further assessment and discussion with relevant stakeholders.

10.3.14. Option 2 (Woodbridge) and Option 3 (Potash Corner) are both considered to be potentially suitable sites in transport terms, but are in less optimal locations. These have the potential to cause greater issues in terms of congestion, as well as access and highway safety when compared with Option 1 (Wickham Market).

e) Socio-economics

10.3.15. There may be some benefit for local businesses close to Option 1 (Wickham Market). However, greater benefits would be expected from Option 2 (Woodbridge), where there are more nearby facilities likely to attract workers. Socio-economic benefits from Option 3 (Potash Corner) would be limited, as it has relatively few shops, services or facilities close by.

Figure 10.3 Revised site location plan of Option 1 (Wickham Market) being consulted upon at Stage 2



f) Planning policy

10.3.16. Traffic management measures that seek to encourage the use of public transport, and reduce the need to travel by private car, are generally supported by planning policy at all levels.

10.3.17. The proposals for the Project are being developed having regard to the policy requirements set out in NPSs EN-1 and EN-6 (Ref. 1.2), together with other relevant national and local planning policy or guidance as relevant. Key national and local planning policies are referred to, where relevant, throughout this Stage 2 consultation document. Further analysis of the relevant policies and guidance will be set out in more detail at the next stage of consultation and as part of the application for development consent. Refer to **Section 3 Planning Policy Context** for further details.

10.3.18. NPS EN-1 recognises that construction of a nationally significant energy infrastructure project may give rise to substantial impacts on the surrounding transport infrastructure. Consideration and mitigation of such impacts is promoted as an essential part of the Government's policy objectives for sustainable development.

10.3.19. NPS EN-1 requires that where transport-related mitigation is needed, demand management measures should be considered before the provision of new inland transport infrastructure. It also indicates that regard should be had to the cost-effectiveness of demand management measures and to the aim of securing more sustainable patterns of transport development when considering mitigation measures. Option 1 (Wickham Market), by virtue of being closest to the main development site, is considered by EDF Energy to be more cost-effective than the other site options.

10.3.20. Suffolk Coastal District Local Plan (2013) (Ref. 3.6) Strategic Policy SP26 relates to Woodbridge and is directly relevant to Option 2. It seeks to consolidate the town and retain the A12 as a firm edge to the town. The Suffolk Coastal Local Plan (2006) (Ref.10.1) also includes a presumption against development on the west side of the A12 (Policy AP240) which is regarded as 'the western limit of Woodbridge'. Option 2 (Woodbridge) would therefore potentially conflict with this policy objective, although it is EDF Energy's intention that the facility would be removed and the land reinstated once no longer required as a park and ride facility.

10.3.21. Local policies may be relevant to development of a park and ride facility at any of the three sites. From a policy perspective none of the sites are clearly favoured over one another. However, saved Policy DM23 of the Suffolk Coastal District Local Plan (2013) seeks to protect residential amenity and could therefore potentially favour Option 1 (Wickham Market). Saved Policy AP13 seeks to preserve the special landscape quality of SLAs and could potentially favour Option 3 (Potash Corner).

g) Site selection conclusions and revised Wickham Market site

10.3.22. On the basis of the above considerations, EDF Energy continues to identify Option 1 (Wickham Market) as its preferred site for the southern park and ride facility, albeit in a slightly different location to that consulted upon in the Stage 1 consultation. It is considered to be preferable over the other two site options in terms of consultation feedback, operational considerations, transport and planning policy.

10.3.23. Following the Stage 1 consultation, EDF Energy undertook archaeological geophysical survey on the Stage 1 consultation Option 1 (Wickham Market) site. This suggested that extensive archaeological remains associated with the Roman 'small town' of Hacheston extend across the site. Therefore, the area of investigation was broadened to include land immediately to the east of the Option 1 site (refer to **Figure 10.3**). Additional geophysical survey suggested that the potential for archaeological remains is lower in the revised location, largely being confined to the southern part of the field only. It is a preferable alternative in this regard.

10.3.24. The revised Wickham Market site was assessed against all of the site selection considerations. It was considered that, with the exception of clear differences in archaeological constraints, the conclusions of the assessment of the Option 1 (Wickham Market) site presented at the Stage 1 consultation generally apply to the revised site, given the similar locational and physical characteristics of the sites.

10.3.25. The revised Wickham Market site would retain the same access arrangements as the original site, but would require an extended access road from the slip road junction into the site. In addition, the revised site access road would be bisected by a PRoW. Both of these factors have some engineering and operational implications, but these are outweighed by the suitability of the revised site in terms of relative archaeological considerations. Therefore, the revised site at Wickham Market is now EDF Energy's preferred southern park and ride site.

10.3.26. Option 2 (Woodbridge) is kept in reserve. It would only be taken forward if the Wickham Market site proved to be unsuitable in light of feedback from consultation or further environmental or technical studies. Option 3 (Potash Corner) is least favourable in terms of consultation feedback, environmental considerations, socio-economics and planning policy. The focus of the rest of this section is, therefore, on the revised Wickham Market site.

10.4. Site description

10.4.1. The Wickham Market park and ride site comprises approximately 18 hectares of primarily agricultural land, located north-east of Wickham Market, in the parish of Hacheston, to the east of the B1078/B1116, and to the north of the A12 and an associated slip road (refer to **Figure 10.3**).

10.4.2. The site boundary largely follows the existing field boundaries, except the south-eastern perimeter where it aligns with the northern edge of the A12 embankment and northbound slip road. Four wooded copses lie along the outer edges of the site along the eastern, northern and western boundaries, including Wonder Grove and Whin Belt. There are ponds within and adjacent to the site and the River Deben is located approximately 800m to the west.

10.4.3. The closest residential properties include: Ash View, located at the eastern end of Main Road (approximately 400m west); Bottle and Glass Cottages on the opposite side of the A12; and other properties in Lower Hacheston and Hacheston to the south and north respectively. Due east of the site the land falls steadily towards the Marlesford valley.

10.4.4. The site is relatively open and there are views across the site from the A12, B1116 and surrounding footpaths. However, views of the site from within the wider landscape are relatively contained by local variations in landform, boundary hedgerows and woodland.

10.4.5. There are a number of PRoW in the vicinity of the site, including bridleway E-288-008/0, which bisects part of the site. Public footpath E-387/008/0 passes near to the site boundary in a north-west/south-east alignment, connecting the A12 to Marlesford Road.

10.4.6. Extensive evidence of a Late Iron Age settlement and the Romano-British settlement of Hacheston has been found in the vicinity of the site. A geophysical gradiometer survey has been conducted and rectangular ditched enclosures, laid out alongside a possible trackway, were recorded in the southern part of the site. A number of linear features shown on post-medieval maps have also been recorded.

10.4.7. The site lies within a predominantly arable farmland landscape with scattered woodland cover. The site is located in the Plateau Estate Farmlands' landscape character type, as identified in the Suffolk Landscape Character Assessment (Ref. 9.2). Key characteristics include a flat landscape of light loams and sandy soils, a large scale rectilinear field pattern and networks of tree belts and coverts.

10.4.8. The site lies within Flood Zone 1 and the western portion is underlain by the Lowestoft Diamicton (boulder clay) and the eastern portion by the Lowestoft sand and gravels (Secondary Superficial aquifer). These superficial deposits overlie the Crag (Principal Aquifer). The site lies within an outer Source Protection Zone (SPZ), although the abstraction is located approximately 2km to the south-east. The nearest licensed groundwater abstraction is located to the east of the site close to Marlesford Road. The following designations and features characterise the wider context:

- the site is located on the watershed of two river catchments; the River Deben to the south-east and the River Ore to the north-west. Each catchment is considered to be a separate water body under the Water Framework Directive - River Deben (Brandeston Bridge-Melton) (GB105035046310) and Ore (GB105035045970). The site does not drain directly into either of these water bodies;
- landscape designations, namely the River Deben SLA (approximately 300m at its closest point), the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB) (approximately 4.5km to the south-east); and
- built heritage features, the closest being two Grade II listed buildings known as Ash Cottage and 36 Ash Road (both approximately 500m south); and another Grade II listed building, Rookery Farm (approximately 650m north-west).

10.4.9. Suffolk Coastal District Council (SCDC) has declared three Air Quality Management Areas (AQMAs) within its boundary, due to elevated monitored concentrations of ambient nitrogen dioxide (NO₂). The nearest AQMA to the site is approximately 5.5km, along the A12 at Stratford St. Andrew. Air quality monitoring has been undertaken by EDF Energy to establish baseline air quality, using continuous monitors for oxides of nitrogen (NO_x), nitric oxide (NO), NO₂ and particulates (PM₁₀), and also passive diffusion tubes for NO₂ and sulphur dioxide (SO₂). Overall, the monitoring undertaken by EDF Energy and separately by SCDC has shown generally good air quality throughout the study area. The concentrations along most local roads, outside AQMAs, are well within the limits of the air quality objective.

10.5. Masterplan

10.5.1. This section describes the current indicative masterplan for the Wickham Market park and ride facility, and how the site requirements set out in **Section 10.2** could be provided. This section is structured to describe the following key elements of the masterplan:

- general arrangement overview;
- access;
- buildings/structures and lighting; and
- landscaping and drainage.

10.5.2. In describing the masterplan, details are provided of the various factors which have informed the emerging masterplan.

a) General arrangement overview

10.5.3. An overriding aim has been to site the development, particularly buildings and structures, away from the north and north-eastern parts of the site, as the land generally rises in this direction and is less well screened by woodland.

10.5.4. **Figure 10.4** illustrates the masterplan, which includes provision for parking areas, a bus terminus and internal road network accessed off the A12 slip road. Parking spaces are shown for around 900 cars (with

Figure 10.4 Wickham Market park and ride site masterplan



a small additional provision for accessible spaces), as well as provision for minibuses/vans, motorcycles and park and ride buses. Additionally, a small number of spaces for pick-up and drop-off have been provided close to the entrance. Stands and a shelter for bicycles would also be provided near the bus stops. A turning area is provided at the site entrance barrier to allow vehicles to be turned away if necessary.

10.5.5. The masterplan includes an administration building, a postal consolidation building, and bus shelters. Perimeter security fencing and lighting would also be provided.

10.5.6. A Traffic Incident Management Area would be located at the north of the site. This area is to be used in the event of an incident on the roads leading to the Sizewell C main development site. It would enable HGVs en-route to the main development site to park for a period of time until the incident is cleared. This would avoid the need for those HGVs to wait on the road or in lay-bys.

10.5.7. In terms of landscaping, existing woodland and hedgerow at the perimeter of the site would be retained and supplemented where appropriate. Grassed earthwork bunds are proposed to the northern and southern extremities of the site to help to screen the development. Water management would take the form of swales to direct surface water run-off in a sustainable manner.

b) Access

10.5.8. Safe highway access is a key factor in determining the layout of the site. Preliminary studies in advance of the Stage 1 consultation identified a proposed access point to/from the original Wickham Market site off the slip road leading onto the A12. Although further detailed junction design will need to be undertaken in due course, an access in the same position would be capable of serving the revised Wickham Market site, as shown in **Figure 10.4**. An internal access road would then turn in a north-easterly direction, crossing a PRoW (E-288-008/0) before entering the facility.

10.5.9. The means of access into the facility in the south-western edge is one of the factors behind siting the built elements in this area of the site. The layout has then been arranged to provide the most efficient layout for the movement of people and vehicles.

10.5.10. The masterplan indicates a turning circle close to the site access to enable vehicles to safely turn and exit the site before they reach the main part of the park and ride facility.

10.5.11. Use of the PRoW (E-288-008/0) would not be

stopped or curtailed during operation. However, the establishment of a safe crossing for the PRoW over the proposed access road and temporary diversions may be required during the construction phase. This could result in potential effects on the amenity value of this PRoW and the experience gained by users of the route. Although the public footpath (E-387/008/0) to the south-east of the site would not be physically affected, the amenity value and the experience gained by users may be affected due to its close proximity to the facility.

c) Buildings, structures and lighting

10.5.12. **Figure 10.4** illustrates the buildings/structures likely to be required within the site, namely a welfare, security and amenity building, a postal consolidation facility, bus shelters, bicycle shelters and a smoking shelter. The buildings/structures are likely to be single-storey, although their scale and design is yet to be finalised.

10.5.13. Lighting would be provided at the perimeter of the facility and within the car parking areas for security and safety reasons. Regard will be given to minimising potential impact on ecological receptors, given that dark skies are a valued feature in the locality. Details of the lighting scheme would be provided at a subsequent stage of consultation, and features are likely to include the use of appropriate lux levels and directional lighting.

d) Landscaping and drainage

10.5.14. The proposed landscaping scheme is illustrated in **Figure 10.4**, having been designed specifically to minimise potential effects on ecological and landscape and visual receptors. The layout is designed to maximise the benefit of the existing screening provided by Whin Belt and the other blocks of woodland to the north, west (Wonder Grove) and east. Supplementary hedgerow planting is proposed to screen views from footpath E-387/008/0 and bridleway E-288-008/0. In addition, the site layout provides for a reasonable separation between the built development and the existing areas of woodland (and ponds) to protect existing habitat.

10.5.15. Prior to any hardstanding being installed, topsoil (and potentially subsoil) would be removed and the site levelled. Excess material would be stored on-site and used to create mounds/bunds at appropriate locations to provide visual screening. The masterplan illustrates the provision of a bund along the southern boundary, parallel with the A12, and a mound to the north of the car parking area. These would help to screen the development from the wider landscape.

10.5.16. Sustainable Urban Drainage Systems (SUDS) would be required. The masterplan shows swales incorporated into the design to minimise run-off from hard surfaces and sediment generation.

10.5.17. The existing ponds on the site have been retained within the layout and would help attenuate storm water flows, as well as maintaining their habitat value.

10.6. Preliminary environmental information

10.6.1. Table 10.2 details the key environmental considerations that have informed the evolution of the masterplan. It also identifies measures which may be required to avoid or mitigate potential effects during

Table 10.2 Preliminary environmental information

Topic	Key considerations
Landscape and visual	<p>Construction</p> <ul style="list-style-type: none"> Changes to local landscape character, as the site would change, albeit not permanently, from an area of agricultural land to a construction site. Changes to views due to the proposed construction activities (including the movement of vehicles and plant) and from lighting at night. Short distance views of construction activity would be possible from surrounding roads and footpaths, notably bridleway E-288-008/0 which would be crossed by the proposed access road, footpath E-387/008/0 which is adjacent to the south-east boundary of the site and the A12. Long distance views of the park and ride site are likely to be possible from surrounding settlements and individual properties, albeit views would be filtered by intervening vegetation and landform. <p>Operation</p> <ul style="list-style-type: none"> Changes to landscape character, albeit not permanently, due to the operational development including new structures, ancillary features, transport infrastructure and landscape features. Changes to views due to the operational development and from operational lighting at night. Short distance views of the operational development would be possible from surrounding roads and footpaths. However, proposed earthworks and planting along the site boundaries would provide some screening. Long distance views of the operational development are likely to be possible from surrounding settlements and individual properties, albeit views would be partly screened by intervening vegetation/landform and proposed boundary treatments. The facility would also be seen in the context of the A12, which is a dual carriageway within the vicinity of the site. <p>Mitigation measures</p> <ul style="list-style-type: none"> Appropriate lux levels and directional lighting would be used during construction and operation to minimise the potential effects on neighbouring residential occupiers. Existing woodland would be retained and new planting, bunding and fencing would be established around other boundaries to screen views of low-level buildings/activity and to help integrate the development into the landscape. The footprint of the development and building heights are being minimised as far as reasonably practicable. The majority of buildings and ancillary features are proposed to be located to the south of the site, closest to the A12 dual carriageway.
Terrestrial ecology and ornithology	<p>Construction</p> <ul style="list-style-type: none"> Neighbouring woodland (including Whin Belt) is known to support bats and breeding birds that might be affected by noise and lighting disturbance. <p>Operation</p> <ul style="list-style-type: none"> Potential disturbance to roosting and foraging bat species due to noise and lighting, without mitigation. There is the potential for surface water discharge (both in terms of water quality and quantity) to affect the habitats and species of the River Deben, located approximately 800m to the west, without mitigation. <p>Mitigation measures</p> <ul style="list-style-type: none"> Whin Belt and the other woodland to the north would be separated from the parking infrastructure by siting the development footprint away from the site periphery. Landscaping the site with mounds, or sustainable drainage infrastructure would create these buffers. SUDS would be used to manage surface water flows and any changes to natural land drainage.

Table 10.2 Preliminary environmental information

Amenity and recreation	<p>Construction</p> <ul style="list-style-type: none"> Bridleway E-288-008/0 runs north-south along the western boundary of the site and through the southern part of the site, where it would be crossed by the proposed access road. A safe crossing point or temporary diversion would be provided. However, there is the potential for effects on the amenity value and the experience gained of users of bridleway E-288-008/0, public footpath E-387/008/0 and other PRoW within the wider landscape as a result of construction activities, traffic movement, construction noise, dust and other emissions. <p>Operation</p> <ul style="list-style-type: none"> Bridleway E-288-008/0 runs north-south along the western boundary of the site and through the southern part of the site where it would be crossed by the proposed access road. A safe crossing point or temporary diversion would be provided. However, there is the potential for effects on the amenity value and the experience gained of users of bridleway E-288-008/0, public footpath E-387/008/0 and other PRoW within the wider landscape as a result of general site activity, traffic, noise, dust and other emissions and views to the development. <p>Mitigation measures</p> <ul style="list-style-type: none"> Existing woodland would be retained and new planting, bunding and/or fencing around other boundaries of the development would be created to reduce potential impacts on those in the vicinity of the site. Other mitigation measures would be employed to minimise effects on recreational users due to changes in views, and noise and air quality effects.
Terrestrial historic environment	<p>Construction</p> <ul style="list-style-type: none"> The geophysical survey suggests that there is the potential for archaeological remains on the site. Whilst these appear to be less extensive and less complex than the potential archaeological remains detected on the originally proposed site, potential nevertheless remains for impacts on archaeological features. <p>Operation</p> <ul style="list-style-type: none"> The Wickham Market and Marlesford Conservation Areas, and associated listed buildings, are over 1km from the site. Other listed buildings to the south, north-west and east are physically separated from the site by the existing road network. Therefore, there is little or no potential for indirect impacts to the settings of these heritage assets. <p>Mitigation measures</p> <ul style="list-style-type: none"> If trial trenching establishes that archaeological remains are present at the revised site, EDF Energy would work with Suffolk County Council Archaeological Service (SCCAS) to devise a suitable mitigation strategy. This could involve mitigation by design, also known as preservation in-situ, or set-piece excavation and recording of archaeological remains, also known as preservation by record, or a combination of the two. Existing boundary vegetation would be retained and new planting, bunding and/or fencing would be created. This would further reduce the likelihood of indirect impacts to the settings of conservation areas and listed buildings.
Soils and agriculture	<p>Construction</p> <ul style="list-style-type: none"> Development would result in the temporary loss of Grade 3 (good to moderate) agricultural land. Development of the site would require soil stripping and stockpiling which could result in soil damage/loss of fertility. <p>Operation</p> <ul style="list-style-type: none"> There are no additional considerations for soils relating to operation of the park and ride. Agricultural production would cease for the duration of the facility being in operation, leading to a temporary effect on the associated farm business (i.e. reduced overall agricultural production area). <p>Mitigation measures</p> <ul style="list-style-type: none"> For areas of land that would be restored to agricultural use, appropriate soil handling procedures would be used as mitigation. Detailed arrangements would be developed in consultation with relevant stakeholders, and in line with established soil management principles.

Table 10.2 Preliminary environmental information

Noise and vibration

Construction

- Occupiers of nearby dwellings could potentially experience noise effects from site clearance and construction.

Operation

- Minimal net increases in noise and vibration effects are predicted at the site during the operational phase, due to the relatively high distance and favourable topography between the site and local receptors.

Mitigation measures

- It is not likely that mitigation would be necessary, but the proposed bunding would result in some reduction in off-site levels. Following further assessment work, further mitigation measures (such as additional screening) could be introduced, where necessary and feasible.

Air quality

Construction

- Additional HGVs (e.g. materials deliveries) and light goods vehicles (e.g. construction workers) accessing the site via local roads would result in associated emissions to air. Receptor exposure within 50m of HGV access routes up to 500m from the site entrance is limited to transient receptors on the adjacent footpaths. Therefore, the effects are anticipated to be minimal.
- Dust could be generated from site clearance and levelling, as well as from material stockpiling and management activities. Receptor exposure within 350m of the site boundary is limited to transient receptors on the adjacent footpaths.

Operation

- Potential adverse effects along transport routes to and from the site (recognising that the park and ride site is, in itself, a mitigation measure which serves to reduce vehicle movements and emissions borne by the Project).

Mitigation measures

- Best practice dust management techniques would be introduced to control dust generated during construction, including the preparation and use of a dust management plan.
- Existing boundary vegetation would be retained and new planting, bunding and/or fencing around other boundaries of the development would be created, which would help mitigate potential construction air quality effects.
- Following further assessment work, additional mitigation measures could be introduced, where necessary.

Land quality

Construction

- There are potential sources of contamination present in the vicinity of the site which could be disturbed by construction activities. This could give rise to potential risks to controlled waters, users of adjacent sites, future and existing services/infrastructure, construction workers and vegetation.
- There is the potential for contamination of the soils to occur during construction works (e.g. from escape of fuels and oils from plant and storage tanks).

Operation

- No significant impacts are anticipated during operation as pollution prevention measures for vehicles using the park and ride would be built into the design.

Mitigation measures

- A risk assessment would be undertaken. If contamination is present, standard good practice measures would be adopted to ensure that any contamination is segregated at source and remediated for re-use where suitable, or removed from site for disposal.
- During construction, the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with the appropriate management plans and agreed pursuant to a Code of Construction Practice.
- Potential risks to construction workers would be managed through standard health and safety and risk assessment procedures.
- Further mitigation measures would be considered, as necessary, throughout the Environmental Impact Assessment (EIA) process.

Table 10.2 Preliminary environmental information

Groundwater	<p>Construction</p> <ul style="list-style-type: none"> Disturbance of soils with the potential to reduce infiltration to groundwater. However, as this is a greenfield site and the area is underlain by boulder clay, the risk to groundwater quality is low. Potential risk to groundwater resources from surface water drainage from hardstanding areas. <p>Operation</p> <ul style="list-style-type: none"> Development of the site would require the construction of areas of hardstanding, which could potentially reduce infiltration to groundwater. <p>Mitigation measures</p> <ul style="list-style-type: none"> During construction any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines. The need for further mitigation would be established as the assessment progresses, but would include the management of surface water run-off. Any further potential mitigation measures would be considered, as necessary, throughout the EIA process.
Surface water	<p>Construction and operation</p> <ul style="list-style-type: none"> The River Deben is located approximately 900m to the south-west of the site. It is possible that this watercourse could be impacted during the construction phase by surface water run-off and during the operational phase by increased storm flow rates. <p>Mitigation measures</p> <ul style="list-style-type: none"> Management of surface water due to changes to natural land drainage would be dealt with via the use of SUDS management techniques and is built into good practice design. For the operational phase, swales would be constructed to support filtration and a pond would provide the means to attenuate any storm flows.

both the construction and operational phases of the park and ride facility. The post-operational phase (i.e. the removal of the facility once it is no longer required by EDF Energy to support the construction of Sizewell C) is not anticipated to result in effects that are greater than those predicted during the construction phase.

10.7. Next steps

10.7.1. Further studies and assessments will be undertaken to inform the ongoing development of the masterplan. These include technical surveys (e.g. geotechnical investigations to confirm the suitability of the site from a constructability perspective), as well as environmental studies and assessments (set out in **Table 10.3**) to inform the EIA.

10.7.2. These studies and assessments will be considered in the context of the feedback to the Stage 2 consultation, as well as ongoing engagement thereafter.

10.7.3. It is intended that prior to submission of an application for development consent, EDF Energy will consult upon its preferred proposals, underpinned by details of the initial findings of the EIA, including baseline environmental information and the impact assessment. Refer to **Section 12 Related Assessments and Approaches** for details.

Table 10.3 Further environmental studies and assessments

Topic	Further studies and assessments
Landscape and visual	<ul style="list-style-type: none"> A full Landscape and Visual Impact Assessment (LVIA) will be undertaken to assess and describe the effects of the park and ride facility. Preparation of the LVIA will influence the iterative design process.
Terrestrial ecology and ornithology	<ul style="list-style-type: none"> An updated Phase 1 Habitat survey will be undertaken to determine the requirement for any further surveys (e.g. protected species).
Amenity and recreation	<ul style="list-style-type: none"> Coordination will be necessary with the LVIA, noise, air quality and transport assessments, to establish where there is potential for the experience of users of PRow to be affected.
Terrestrial historic environment	<ul style="list-style-type: none"> A scheme of archaeological trial trenching, agreed with SCCAS, will be undertaken to establish the nature, extent and importance of the potential archaeological features identified within the site.
Soils and agriculture	<ul style="list-style-type: none"> A survey will be undertaken to determine soil quality along with an assessment of the nature of the agricultural enterprise.
Noise and vibration	<ul style="list-style-type: none"> Noise modelling will be conducted for construction and operational noise, as well as noise from traffic generated during construction and operation. Mitigation will be devised and the models re-run to calculate predicted noise levels.
Air quality	<ul style="list-style-type: none"> No further surveys are planned due to the availability of sufficient existing data and a clear understanding of best practice measures for the control of construction dust. Changes in air quality as a result of road traffic associated with construction and operation will be modelled, as required. However, it is anticipated that construction vehicle numbers would be very low. Therefore is not anticipated that modelling is required to assess road traffic air quality effects during construction.
Land quality	<ul style="list-style-type: none"> A Phase 1 ground contamination desk based study has been undertaken which identified very low to low risks to human receptors, very low to moderate/low risks to controlled waters receptors and very low risks to controlled waters (groundwater) receptors. An intrusive geotechnical investigation will be undertaken to inform design and assess geotechnical constraints. This will include geo-environmental testing to assess the potential for contamination.
Groundwater	<ul style="list-style-type: none"> The geological and hydrogeological understanding of the site will be updated based on future geotechnical investigations, including information on depth to groundwater. The assessment will consider whether any changes in infiltration would be significant and whether surface water drainage from hardstanding areas could represent a risk to groundwater resources.
Surface water	<ul style="list-style-type: none"> A surface water survey has been undertaken. No further assessment is proposed due to the integration of SUDS into the masterplan.

11. Highway Improvements

11.1. Introduction

11.1.1. As set out in **Section 2 Vision and Objectives**, EDF Energy's overall objective is that Sizewell C would be designed and implemented to high environmental standards, taking full account of the sensitivity of its location. **Section 6 Transport** sets out EDF Energy's overall transport strategy for the Sizewell C Project (the Project), which takes account of the sensitivity of the local highway network and promotes major investment in rail and sea connections to the main development site to limit the traffic and amenity effects of transporting construction materials and goods by road. Park and ride facilities are proposed to limit the number of individual car journeys by construction workers (refer to **Section 9 Northern Park and Ride** and **Section 10 Southern Park and Ride**). Furthermore, the construction workers' accommodation campus is proposed to be located within the main development site, adjacent to the construction working area, further limiting the need for daily road based journeys.

11.1.2. This section sets out further information on EDF Energy's approach to the need for highway improvement measures at specific locations, namely the A12 near Farnham and along the B1122 between Yoxford and Sizewell, as identified by the transport assessment work undertaken to date. Refer to **Section 6 Transport** for details. This section is structured as follows:

- **Section 11.2** outlines the options presented in the Stage 1 consultation and summarises the responses received at that stage;
- **Section 11.3** explains what EDF Energy will need to consider when determining an approach to highway improvement works;
- **Sections 11.4 to 11.9** relate to potential highway improvements along the A12 near Farnham, as follows:
 - **Section 11.4** outlines the rationale for the options being considered. The following sections describe the works proposed and supporting preliminary environmental information for each option:
 - **Section 11.5** Option 1 – a 'no change' scenario;
 - **Section 11.6** Option 2 – Farnham bend road widening;
 - **Section 11.7** Option 3 – Farnham bypass (also known as the one village bypass);
 - **Section 11.8** Option 4 – Stratford St Andrew and Farnham Bypass (also known as the two-village bypass);
 - **Section 11.9** an overview of the key considerations next steps;

- **Sections 11.10 to 11.16** relate to potential highway improvements along the B1122, as follows:
 - **Section 11.10** outlines the rationale for the options being considered. The following sections describe the works proposed and supporting preliminary environmental information for each option:
 - **Section 11.11** A12/B1122 Yoxford junction;
 - **Section 11.12** speed limit reductions;
 - **Section 11.13** west of junction with Mill Street;
 - **Section 11.14** pedestrian enhancements in Theberton;
 - **Section 11.15** alignment of the B1122 between Theberton and the Sizewell C construction site entrance;
 - **Section 11.16** considers any impacts that the Project may have on cycling and sets out proposals for improvements to cycling infrastructure near the main development site; and
 - **Section 11.17** considers any impacts that the Project may have on public rights of way (PRoW) and other footpaths; and sets out proposals for improvements to those routes near the main development site.

11.1.3. For all highway improvement options presented in this section, EDF Energy will ensure that all existing accesses to land adjacent to the highway improvement proposals would be maintained.

11.2. Stage 1 consultation

11.2.1. At the Stage 1 consultation EDF Energy sought views on proposals for potential road and junction improvements to alleviate transport impacts. These improvements were presented in three categories:

- Farnham bend;
- the B1122; and
- other road traffic impacts from Sizewell C.

11.2.2. Preliminary modelling identified the A12 between Ipswich and Lowestoft as the main corridor for the majority of Sizewell C traffic. It suggested that the total traffic impact would be in the region of a 5-15% increase to all-vehicle daily traffic flows at the point of peak construction, which would last 1-2 years.

11.2.3. Preliminary modelling of the A12 indicated that additional heavy goods vehicle (HGV) traffic generated during the construction of Sizewell C would increase the

frequency of large vehicles meeting at Farnham bend, and so could exacerbate existing safety concerns. It also indicated that, in-combination with wider future traffic growth, Sizewell C construction traffic could contribute to increased congestion at Farnham at peak periods.

11.2.4. In response to the preliminary modelling, EDF Energy presented three highway improvement options at Farnham in the Stage 1 consultation that could potentially be pursued if mitigation of these impacts was required:

- Option 1 (Farnham bypass);
- Option 2 (Road widening at Farnham bend); and
- Option 3 (HGV traffic controls at Farnham bend).

11.2.5. Figure 11.1 and Figure 11.2 show Option 1 (Farnham bypass) and Option 2 (road widening at Farnham bend) respectively, as they were presented in the Stage 1 consultation. Option 3 (HGV traffic controls at Farnham bend) was not presented visually.

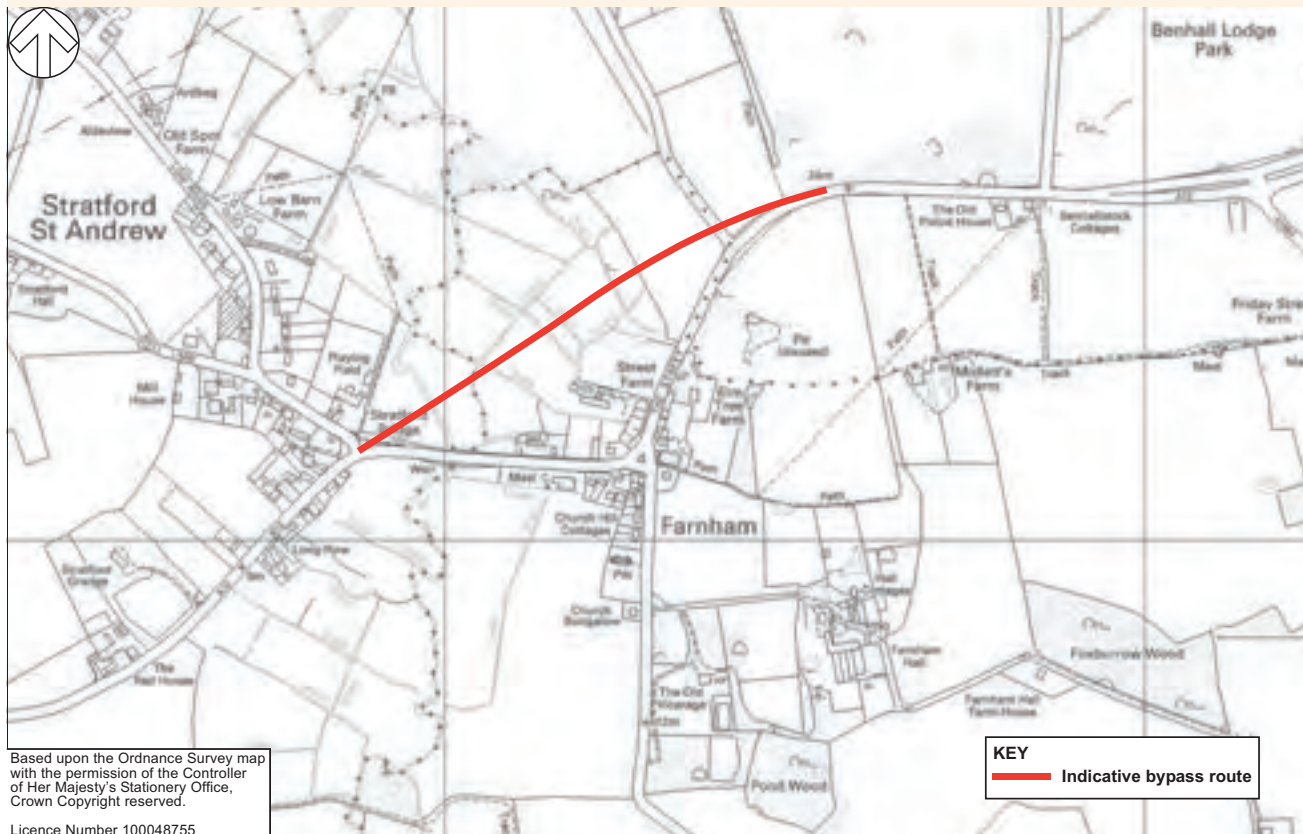
11.2.6. Of the three options on which EDF Energy

sought views at the Stage 1 consultation, the majority of respondents considered Option 1 (Farnham bypass) to be most appropriate. Those who favoured this option generally considered that the bypass would represent a long-term solution to traffic issues at Farnham. It was considered that it would address the narrow bend and remove A12 traffic from Farnham, with consequential benefits in terms of improvements to the character, noise levels and secluded feel of the village.

11.2.7. However, a number of respondents raised concerns about Option 1 (Farnham bypass). These generally related to concerns over potential environmental effects, principally in terms of landscape and visual, ecology and flood risk impacts. Concerns were also raised by some residents relating to the proximity of the bypass to the Riverside Centre and adjacent amenity land used by the local community. Concerns were also expressed that the bypass would increase severance between the neighbouring communities of Farnham and Stratford St Andrew.

11.2.8. Neither Option 2 (road widening at Farnham bend) or Option 3 (HGV traffic controls at Farnham bend) were considered appropriate by most stakeholders. Reasons

Figure 11.1 Option 1 (Farnham bypass) as presented in the Stage 1 consultation

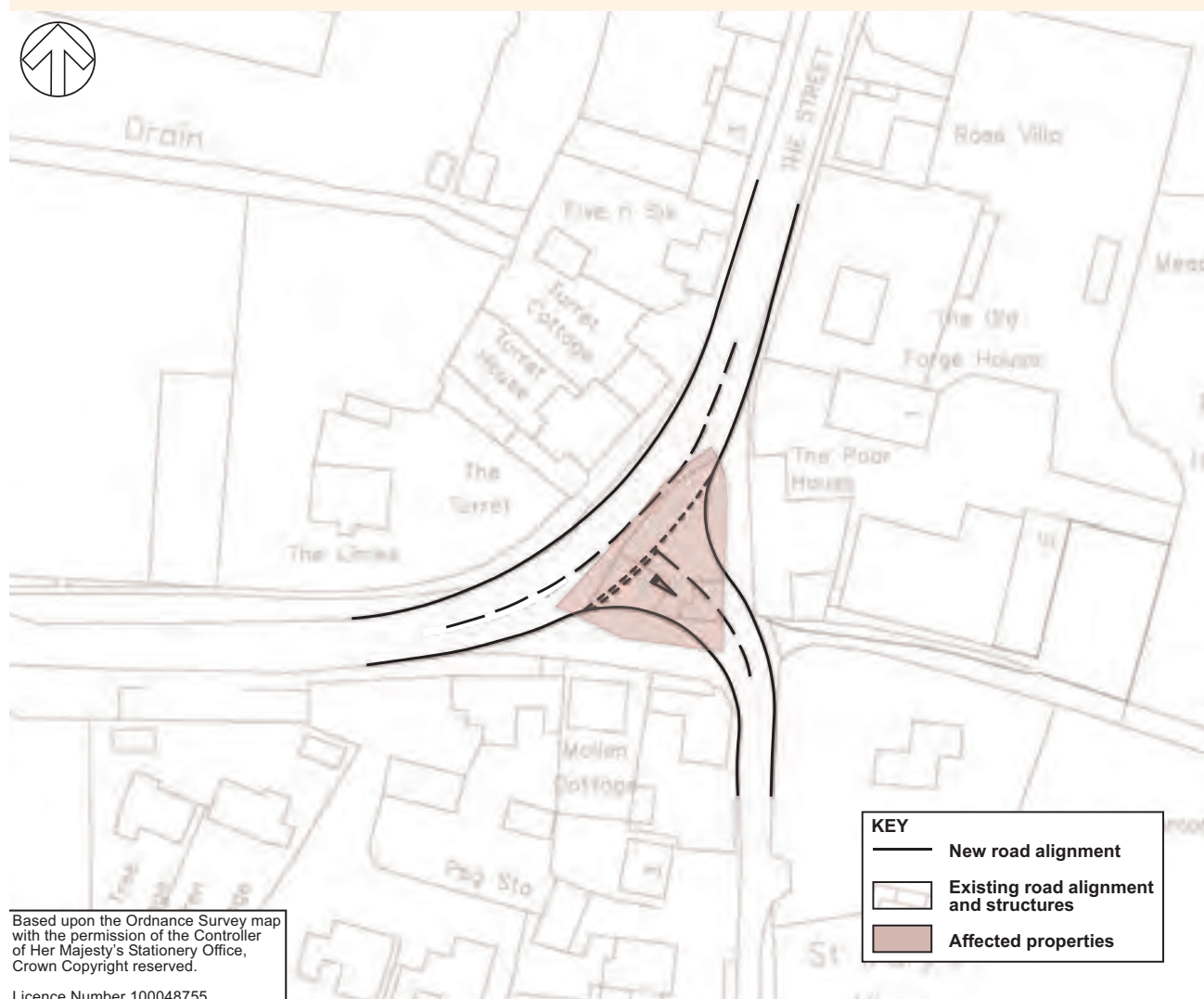


given for this were that neither of these options would take traffic out of the village. The HGV controls option in particular was seen as potentially exacerbating the existing traffic situation, which could lead to additional queuing on the approach to Farnham. Most respondents also considered that the demolition of a property as a result of Option 2 (road widening at Farnham) was inappropriate, principally given the listed building status of the property and that the option would have a detrimental impact on the village of Farnham. However, Option 2 was favoured by a number of respondents, principally organisations with environmental interests, who had greater environmental concerns with the principle of a bypass.

11.2.9. Many respondents to the Stage 1 consultation stated that none of the three options presented were appropriate, and that EDF Energy should bring forward, or financially support, a much larger bypass of Farnham, Stratford St Andrew, Little Glemham and Marlesford on the single lane stretch of the A12 between Wickham Market and Saxmundham, a scheme which is often referred to as the 'Four Village Bypass'. Many such respondents referred to previous bypass schemes which have been proposed in this area.

11.2.10. Respondents to the Stage 1 consultation consistently raised concerns about the impacts of increased levels of traffic along the B1122. Respondents considered

Figure 11.2 Option 2 (road widening at Farnham bend) as presented in the Stage 1 consultation



that the B1122 is already very busy, especially at certain times of day. They expressed concerns that the existing road is inadequate to accommodate increased levels of traffic. Specific concerns were raised that more traffic would lead to bottlenecks along the B1122 and increased safety concerns for local residents. Some respondents considered that the scale of additional traffic associated with the construction of Sizewell C should require the provision of a new direct road from the A12. These comments are considered further later in this section.

11.3. Planning policy considerations

11.3.1. The key planning guidance for Nationally Significant Infrastructure Projects (NSIPs), such as Sizewell C, is set out in National Policy Statement (NPS) EN-1 (Ref.1.1). This recognises that construction of a nationally significant energy infrastructure project may give rise to substantial impacts on the surrounding transport network. Consideration of proportionate mitigation of such impacts is promoted as an essential part of the Government's policy objectives for sustainable development.

11.3.2. Further information on the transport sections of NPS EN-1 is provided in **Section 6 Transport**. Perhaps the guidance of most relevance relates to paragraph 5.13.8 which states:

“Where mitigation is needed, possible demand management measures must be considered and if feasible and operationally reasonable, required, before considering requirements for the provision of new inland transport infrastructure to deal with remaining transport impacts.”

11.3.3. EDF Energy considers that its wider transport strategy proposals for Sizewell C, in particular in relation to the measures to facilitate sea and rail deliveries, and park and ride facilities to reduce traffic increases, are a strong and appropriate response to this guidance, maximising the scope for demand management so far as is feasible and operationally reasonable. Refer to **Section 6 Transport** of this document for further details of EDF Energy's strategy. Nonetheless, the guidance recognises that, where residual transport impacts of significance remain after demand management measures have been implemented, it may be appropriate to propose new highway infrastructure measures to mitigate them.

11.3.4. With respect to the form of transport mitigation proposed and when mitigation may be required, there is a range of detailed guidance issued by the Department for Transport in relation to the assessment of transport impacts and the design of mitigation measures. However, there is no single piece of guidance, set of criteria, wider assessment approach or specific thresholds which can universally be applied to determine this. A case by case judgement must be reached, taking account of the relevant factors and considerations which apply to each case.

11.3.5. Where a developer agrees planning obligations with local authorities, the policy guidance makes it clear that any measures must be (NPS EN-1 paragraph 4.1.8):

- necessary to make the proposed development acceptable in planning terms;
- directly related to the proposed development;
- fairly and reasonably related in scale and kind to the proposed development; and
- reasonable in all other respects.

11.3.6. Any planning obligations that EDF Energy would make as part of the Project, including those relating to transport mitigation measures, would have to meet the relevant tests.

11.3.7. Equally, in addition to transport-related guidance and planning policy, it is important to recognise that other sections of NPS EN-1 will be relevant. These encourage the developers of nationally significant energy infrastructure projects to seek to avoid, reduce or otherwise appropriately mitigate the environmental effects of their development. More specifically in the NPS EN-1 and in relation to what are perhaps the main environmental impacts of likely relevance in this area:

- Section 5.3 advises that development should aim to avoid significant harm to biodiversity and geological conservation interests;
- Section 5.7 sets out a range of requirements in relation to the assessment of flood risks and providing necessary evidence and mitigation to ensure that any flood risks arising from the development can be safely managed over the lifetime of the development;
- Section 5.8 states that substantial harm to or loss of a grade II listed building (as would be required with the road widening option) should be exceptional; and
- Section 5.9 states that development should aim to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate.

11.3.8. All of these factors will need to be taken into account in deciding which, if any, measures should be included within the application for development consent.

11.4. Approach to highway improvement options near Farnham

11.4.1. At the Stage 1 consultation, EDF Energy presented three options for highway improvements to the section of the A12 near Farnham, as described in **Section 11.2**. Whilst the Stage 1 consultation also sought views on highway improvements along the B1122, specific proposals for the B1122 had not yet evolved. Responses to the Stage 1 consultation therefore focused most specifically on highway improvements to the A12 near Farnham. As a result, EDF Energy has considered in detail the options and issues relating to Farnham which present specific challenges. The following section explains these issues and options in more detail. Whilst the principles relating to the consenting process are relevant for all elements of the Project, they are of particular relevance to the options for highway improvements near Farnham.

a) Highway improvement options near Farnham

11.4.2. EDF Energy has continued to consider the issues raised and has assessed the traffic effects of the Project on the A12 through the four villages, specifically at Farnham. Consistent with EDF Energy's initial suggestions set out in the Stage 1 consultation, this work has identified that:

- there has been a long standing public concern that something should be done about the existing traffic levels through the four villages. Traffic associated with Sizewell C would further increase traffic levels along the A12. EDF Energy's modelled analysis shows that Sizewell C traffic would increase total traffic volume in the order of 3-6% through the four villages during the peak construction phase, which is expected to last about 1-2 years. This 3% is based on an assumption that some traffic (excluding buses and HGVs) would re-route to take the quickest route available. Without re-routing, the increase in total traffic volume would be in the order of 6%. HGV flows through the four villages are expected to increase in the order of 40% during the peak construction phase;
- there are no technical highway capacity issues with the A12 in three of the villages (Marlesford, Little Glemham and Stratford St Andrew), but there may be a capacity issue at Farnham bend due to the narrowing of the road, compounded by the tight configuration of the bend.

However, investigations to date suggest that the main effect of the bend is to slow traffic; and

- there is a clear amenity issue already in Farnham caused by the proximity of traffic to the frontage properties and by the tight configuration of the bend.

11.4.3. In light of the above, EDF Energy considers that the impact of Sizewell C traffic would not be sufficient to justify a bypass of all four villages, but that it remains necessary to give further detailed consideration to more local issues and, particularly, issues arising from the bend in Farnham.

11.4.4. There are a variety of options that EDF Energy could potentially pursue in response to the issues affecting Farnham. The choice between those options is not straightforward. EDF Energy recognises the importance of ongoing consultation with the highway and planning authorities, other statutory bodies and the local community before settling upon a preferred option for inclusion in its application for development consent. EDF Energy's current view remains that there may be a case for the provision of mitigation at Farnham. To this end, this Stage 2 consultation seeks views on four options, which can be summarised as follows:

- Option 1: No change, in other words the application would not propose any physical interventions (**Section 11.5**);
- Option 2: Road widening at the Farnham bend, similar to that illustrated in the Stage 1 consultation but with more detail (**Section 11.6**);
- Option 3: Farnham Bypass (also known as the one village bypass), similar to that illustrated in the Stage 1 consultation but with more detail (**Section 11.7**). There are two design options for the Farnham Bypass which are called Option 3A and Option 3B and each is described; and
- Option 4: Stratford St Andrew and Farnham Bypass (also known as the two-village bypass) (**Section 11.8**), which has been included following a request from Suffolk County Council (SCC), who consider that it would be preferable to a smaller-scale solution.

11.4.5. The order of the options set out in this Stage 2 consultation is different from the order in which the options were presented at Stage 1. The options are now presented in order from the smallest scale intervention (i.e. no change) to the greatest scale intervention (i.e. the two-village bypass). This means that the options are referred to by a different number. For example, the road

widening option is called 'Option 2' throughout this document. Please refer to the numbered options set out above for the purposes of this Stage 2 consultation.

b) Principles which guide the approach to highway improvements

11.4.6. EDF Energy has developed some thoughts on the appropriate approach but it has not reached a firm conclusion. It will ensure that any decision is informed by further technical work and by the results of this consultation.

11.4.7. In order for EDF Energy to be open and transparent about its approach, it is important that stakeholders understand the principles that need to be followed when deciding which option should ultimately be pursued through the application for development consent. In summary, some important principles, as set out in the NPS EN-1 and NPS EN-6 (Ref. 1.2) and associated guidance, will need to be fully observed, in particular:

- EDF Energy could not seek development consent for any proposal that exceeds the scale that is necessary to mitigate the impact of the Project. Beyond the proposals for the infrastructure itself (i.e. the nuclear power station), an application for development consent can only include proposals that are necessary and proportionate to mitigate the impacts of the Project;
- an application for development consent should not include proposals that are not to be funded and delivered as part of the application. For instance, it would be inappropriate for EDF Energy to include a Four Village Bypass in its application for development consent if that bypass was promoted for a purpose unrelated to the new power station and if there was uncertainty over its deliverability by others. Any infrastructure proposed in the application needs to be necessary for the nuclear power station development and, therefore, needs to be delivered as part of the Project;
- in considering any proposals of this nature, it is important to have regard not only to their benefits in mitigating the impacts of the Sizewell C traffic but also to their own environmental effects. Proposals for a bypass or other physical interventions would all have their own adverse environmental effects, which need to be weighed up against the mitigating benefits; and
- in considering any proposals that would require the compulsory acquisition of land, EDF Energy must be able to demonstrate two key things. Firstly, that the land in question is required, and is no more than is required, in order to deliver the Project. Secondly, that there is a

compelling case in the public interest for the land to be acquired compulsorily. It is important to emphasise that the second is a deliberately exacting test.

11.4.8. Further information about the principles which determine what can and cannot be included in an application for development consent is set out in the Government's guidance on the Planning Act 2008 (Ref. 11.1). Further information about the principles which determine whether compulsory acquisition is acceptable as part of an application for development consent is set out in the Government's guidance on the Planning Act 2008 relating to procedures for the compulsory acquisition of land (Ref. 11.2).

11.4.9. Informed by further technical work, discussions with stakeholders and the outcome of this public consultation, EDF Energy will adopt a strategy which is consistent with these legal and policy obligations. This means adopting a strategy which is proportionate to the effects of the Project, deliverable as part of the Project and where the adverse impacts of any mitigation proposal are justifiable in relation to the mitigating benefits which it brings.

11.4.10. Against this background, if EDF Energy decides to pursue an option that includes the construction of a bypass (of any scale), it needs to be satisfied that there is a robust case to justify such a scheme. This will need to balance the nature and relatively limited duration of the effects of the Sizewell C construction traffic with the fact that any bypass would bring adverse environmental effects, for instance on landscape and nature conservation.

11.4.11. As explained above, EDF Energy does not have a settled view on these matters. It is, therefore, appropriate and helpful for this consultation to be carried out so that consultees may express their views on the appropriate approach. These views will be taken into account before a final decision is reached about what will be included in the application for development consent.

11.4.12. Further details on the potential options for highway improvements at Farnham are described later in this section to help stakeholders understand the nature and likely effects of the alternatives.

c) Transport analysis and traffic modelling

11.4.13. Following the Stage 1 consultation, EDF Energy has given further consideration to the potential need for, and benefit of, highway improvement options at Farnham, having regard to consultation feedback and further transport and traffic work.

11.4.14. EDF Energy’s current view remains that there may be a case for the provision of mitigation at Farnham. This case arises from the recognition that the construction of Sizewell C would exacerbate an existing problem, which results from the configuration of the A12 through Farnham and the Farnham bend.

11.4.15. The VISUM traffic model that is being used to assess Sizewell C traffic impacts provides a forecast of the potential scale of traffic impact for the section of the A12 through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham, which is provided in **Table 11.1**. The model is a dynamic highway assignment model, which considers that existing and development related traffic may re-route to choose the quickest available routes within the network (other than HGVs and buses which are assigned to fixed routes). This means that flow changes within the traffic model are not simply the addition of Sizewell C traffic onto a fixed and unchanging future year traffic flow on any given route.

11.4.16. It is recognised that on the busiest days there could be additional HGV traffic (up to around 740 HGV movements per day) on this part of the A12, which would lead to increases in traffic above these levels. However, in this scenario the estimated daily increases in all-vehicle traffic still would not exceed 5–15% of future traffic flows as indicated at Stage 1.

11.4.17. The traffic modelling conducted to date suggests that a small amount of non-Sizewell C-related traffic (approximately 750 vehicles per day) would potentially re-route to the A140 and A143, meaning that actual increases in vehicle flows could be lower than those shown in **Table 11.1**. It is also expected that traffic increases at peak network hours would typically be slightly lower than overall daily increases, at around 3–4% of traffic flows. This is because EDF Energy’s work patterns and wider Project activities would not usually peak at the same time as the existing network. Refer to **Section 6** for further details on the transport analysis undertaken to date.

11.4.18. At present, there is no evidence of a significant traffic safety issue at the Farnham bend as there is no recorded history of road accidents at or near the bend. However, road safety records include personal injury accidents but do not record any incidents that result in damage to vehicles or property only. For example, if two HGVs were to come into contact whilst passing at the bend resulting in damage to the vehicles only but without any personal injury, this type of incident would not be recorded in the road safety record. It is expected that such unrecorded incidents are likely to be occurring. As a result, the road safety record may under-represent the number of minor incidents which occur in Farnham.

Table 11.1 Forecast average weekday 24-hour traffic change on a section of the A12 through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham

Traffic component	Average number of daily vehicle movements
Current daily base year all vehicle traffic flows	Around 18,700
Estimated future reference case (2024) all vehicle daily traffic flows (without Sizewell C)	Around 20,300
Additional Sizewell C Traffic : HGVs	Around 380
Additional Sizewell C Traffic: Buses	Around 200
Additional Sizewell C Traffic: Light goods vehicles	Around 320
Additional Sizewell C Traffic : Cars	Around 400
Total additional Sizewell C traffic	Around 1300 vehicles
Indicative total daily traffic flows including Sizewell C peak construction traffic	21,600
Increase arising from Sizewell C construction	Around 6%–7%

11.4.19. As the main effect of the bend is to slow traffic, drivers perceive potential danger at the bend and slow down accordingly, so there appears to be very few accidents. It is clear from responses to the Stage 1 consultation, however, that there is a locally perceived highway safety issue at the bend due to the tight configuration of the road. Local residents are concerned about highway safety issues at the bend, particularly when two large vehicles (i.e. HGVs or buses) pass each other at the bend. The occurrence of this would increase with the addition of Sizewell C's construction traffic.

11.4.20. EDF Energy considers that the general alignment and width of the A12 at Farnham creates a greater potential for future capacity issues at this location compared to the other villages on this part of the A12. These considerations and the potential for capacity constraints in the context of the Farnham bend are unique to Farnham, and do not in EDF Energy's view apply to the other villages of Stratford St Andrew, Little Glemham and Marlesford.

11.4.21. EDF Energy considers that a full bypass of this section of the A12, which includes Farnham, Stratford St Andrew, Little Glemham and Marlesford could not be justified by reference to the traffic impacts of the construction of Sizewell C. Therefore it could not form part of the application for development consent. EDF Energy has advised the local authorities that it is firm in its view that the Sizewell C Project does not justify a full Four Village Bypass.

11.4.22. SCC has, however, resolved to undertake further work itself to develop proposals for a Four Village Bypass and has instructed consultants for this purpose. At present, this work is at an early stage and the level of uncertainty as to whether proposals for a Four Village Bypass would be developed, and if so, when and in what form, is such that EDF Energy must proceed with its proposals independently. Whether SCC's further work results in an application being made for a Four Village Bypass is, therefore, a matter for SCC and is separate from any proposals that may be advanced by EDF Energy in relation to the Sizewell C Project.

11.4.23. This section presents alternative options for shorter bypasses: Option 3 illustrates a bypass of Farnham only, and Option 4 illustrates a two-village bypass of Farnham and Stratford St Andrew. A preliminary version of the two-village bypass option was initially progressed by SCC as part of an options assessment considering various bypass designs. SCC's appraisal of bypass options along the A12 near the four villages was carried out by Aecom, and is documented in a report called 'The A12 Four Villages Study' (Ref.11.3). It is this version, developed by SCC, which is presented as part of this Stage 2 consultation. EDF Energy

has given consideration to the matters that would need to be developed further if the two-village bypass design were to be progressed. These are presented at **Section 11.8**. The local authorities stated in their Stage 1 consultation that they would favour a two-village bypass over smaller-scale interventions, in part because they consider that it may form a step towards an ultimate Four Village Bypass. SCC considers that following completion of a two-village bypass of Farnham and Stratford St Andrew, it could deliver a separate bypass of Little Glemham and Marlesford which, together, would provide a bypass of all four villages.

11.4.24. As set out above, EDF Energy considers that the potential for future capacity issues on the A12 due to Sizewell C traffic is unique to Farnham, caused by the narrowing of the road compounded by the configuration of the Farnham bend. Stratford St Andrew does not share the same potential for capacity issues along the A12. However, as SCC has progressed plans for a two-village bypass of Farnham and Stratford St Andrew, it is important to consider both bypass options in order to determine whether one option is favourable in terms of its environmental effects. For this reason, the two-village bypass option is included in this consultation as Option 4.

11.4.25. Even in relation to these shorter bypass options, EDF Energy remains concerned that these largely represent solutions to a perceived pre-existing problem, rather than one caused by Sizewell C traffic impacts.

11.4.26. As the details set out later in this section explain, the provision of road widening in Farnham or the provision of a one or two-village bypass would all have significant environmental effects of their own. A judgement therefore needs to be made as to whether the impacts associated with the Sizewell C construction traffic are sufficient to justify the adverse environmental effects associated with the mitigation options. Where relevant, it will be necessary to demonstrate a compelling case in the public interest for the compulsory acquisition of the land and interests in land needed to implement a proposal. Consequently, this consultation also considers a no change scenario. In that scenario, the judgement would be reached that the relatively short-term nature of the Sizewell C traffic impact on Farnham would not be sufficient to justify physical interventions which themselves bring significant environmental issues.

11.5. Option 1—A ‘no change’ scenario

a) Description

11.5.1. EDF Energy recognises that Sizewell C traffic would exacerbate an existing problem at Farnham caused by the pre-existing configuration of the A12 and the bend at Farnham. As explained above, any proposal for highway improvements must be shown to be necessary to mitigate the impact of the Project, and proportionate to that impact. Whilst there are highway improvement options, it is important to recognise that the benefit they deliver in mitigating the impacts of Sizewell C traffic must be considered having regard to the adverse environmental effects to which they would give rise.

11.5.2. Given these important considerations, the increase in traffic volumes attributable to Sizewell C may not be sufficient in policy terms to justify a large scale intervention such as a bypass, which carries with it significant environmental impacts. For example, whilst Option 2 (road widening) represents a medium-scale proposal for highway improvements, this option carries its own adverse environmental impacts, namely the demolition of a listed building. It is, therefore, possible that the Secretary of State may conclude that the effects associated with Sizewell C do not justify such an intervention.

11.5.3. For this reason, EDF Energy considers it appropriate and important to consider and seek views on whether a no change scenario may be the best, or ‘least worst’, approach. In this approach, a judgement would be reached that the short-term nature of the Sizewell C traffic impact on Farnham would not be sufficient to justify physical interventions which themselves bring significant environmental effects. In this scenario no change would be made to the Farnham bend and Sizewell C traffic would simply use the A12 through Farnham as it exists at present.

11.5.4. In a no change scenario EDF Energy would consider the use of relatively minor mitigation measures, for example the installation of noise insulation, to improve the amenity of nearby residential properties.

b) Environmental effects

11.5.5. The potential for adverse environmental effects from the no change scenario would arise from traffic and traffic-related effects (i.e. noise and emissions from vehicles), due to the increase in traffic on the road associated with the Project. The construction phase would generate significantly more traffic than the operational phase of the Project, with the operational traffic predominantly comprising workforce movements to the site. During the construction phase there

would be a combination of freight and workforce movements on the A12. Modelling and assessments undertaken to date to understand the potential traffic impacts are detailed earlier in this section, and are therefore not considered further here.

11.5.6. In terms of traffic noise, monitoring and preliminary analysis along the network indicates that many dwellings facing onto the A12 currently experience high levels of noise from road traffic. The Sizewell C construction-related traffic is not predicted to give rise to significant changes to the existing noise levels along the route, either during the day or night.

11.5.7. Preliminary modelling of traffic emissions, specifically nitrogen dioxide (NO₂), has been undertaken along the A12 for the peak construction year, as described in **Section 6 Transport**. The modelling indicates that NO₂ along the A12, through Farnham, is not anticipated to exceed any UK health-based air quality objective.

11.5.8. EDF Energy invites views through this consultation on whether the scale of the short-term traffic impacts should be regarded as acceptable given the tests that would be applied to EDF Energy’s application for development consent (refer to **Section 11.3**) and having regard to the adverse impacts of any of the alternative options.

11.6. Option 2—Farnham bend road widening

11.6.1. The road widening of the existing bend at Farnham would reduce safety concerns associated with the current narrowness of the bend. The widened A12 and modified junction with Langham Road would be effective in reducing the current risks associated with the potential for collisions between vehicles and property at the narrowest point of the Farnham bend.

11.6.2. This section provides details of the Farnham bend road widening option and is structured as follows:

- site description;
- masterplan; and
- preliminary environmental information.

a) Site description

11.6.3. Farnham bend is the section of the A12 in the centre of Farnham where the road alignment turns sharply at its junction with Langham Road. At this point, the A12 is known as The Street.

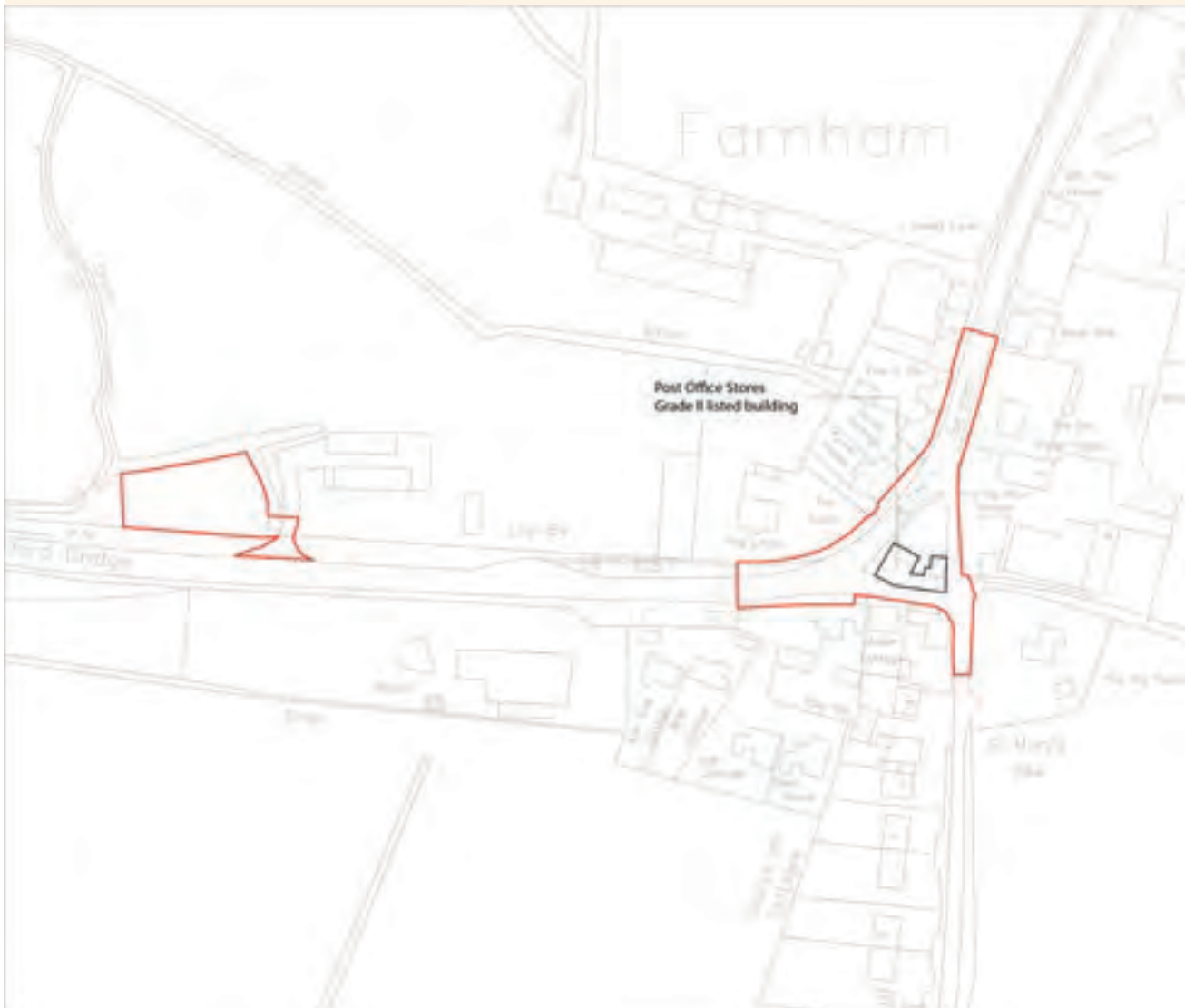
11.6.4. Langham Road splits in two before it joins the A12 with a narrow single width road meeting The Street at two separate junctions. In the middle of this road arrangement, on the east of The Street, is the Grade II listed Post Office Stores building with its garden to the north.

11.6.5. Figure 11.3 identifies the land that is likely to be required for road widening works and a temporary contractors' compound in this location (i.e. the site). The site comprises the existing highway land and the Post Office Stores property. No works impacting upon any other private property are anticipated, with the exception of siting a temporary contractor's compound.

11.6.6. The sensitivities of the site and designations of particular relevance include:

- Grade II listed buildings within the village, including The George and Dragon Public House (immediately south), Turret House and Turret Cottage (immediately west) and Elm Tree Cottage and Elm Tree Farmhouse (approximately 50m north); and
- nearby footpaths, including footpath E-243/004/0 which extends eastwards from Langham Road near to the junction with the A12 (The Street), and footpath E-243/001/0 from Langham Road near The Old Vicarage to Hill Farm and further south.

Figure 11.3 Site for road widening at Farnham bend (Option 2)



11.6.7. The site sits within the wider Special Landscape Area (SLA) designation which covers a wider area around Farnham. However, given its siting within the settlement of Farnham, this designation is not considered important for these purposes.

11.6.8. Air quality monitoring has been undertaken by EDF Energy to establish baseline air quality. Overall, monitoring undertaken by EDF Energy and separately by SCDC has shown generally good air quality throughout the study area, in background locations and also along the designated transport routes for construction and operational traffic. The concentrations along most local roads, outside the Air Quality Management Areas (AQMAs), are less than 90% of the air quality objective. The nearest AQMA is along the A12 to the south of Farnham, in Stratford St Andrew.

b) Masterplan

11.6.9. The indicative layout remains as indicated at the Stage 1 consultation, but now includes details of potential landscaping treatment and a temporary contractors' compound (refer to **Figure 11.4**).

11.6.10. The road widening would result in the consequential demolition of the Grade II listed Post Office Stores building. The listed building is a house and shop formed of two storeys and an attic; it dates back to the early nineteenth century. Features noted in the listing (Historic England's reference 1230215) include the structure's painted brick, pantile roof, window sashes with glazing bars in cased frames, flat brick arches, and its asymmetrical doorway with a six-panel door. The listing

Figure 11.4 Masterplan for Option 2: Farnham bend road widening



also notes the shop façade at the right of the structure with modern windows, a half-glazed double door, reeded pilasters, and its fascia with cornice. The features within the property are not especially sensitive or of particular merit.

11.6.11. There are other Grade II listed properties in the vicinity of the Post Office Stores building, namely Turret House and Turret Cottage on the opposite side of the A12, and the former George and Dragon Inn to the south-

west. However, these buildings are not identified as an asset grouping, which means that the heritage value of these buildings is not derived from or enhanced by their being considered together as a group. These buildings should also be viewed in the context of the A12, which already has a significant impact on their setting.

11.6.12. An indicative illustration of the bend widening proposals is shown at **Figure 11.5**.

Figure 11.5 Indicative illustration of Option 2: Farnham bend road widening



c) Preliminary environmental information

11.6.13. Table 11.2 details the key environmental considerations arising from the construction and operation of the road widening at Farnham bend option, as well as potential measures which may be required to avoid or mitigate potential effects.

11.7. Option 3 – Farnham bypass (a one village bypass)

11.7.1. This section provides details of the Farnham bypass option and is structured as follows:

- site description;
- masterplan; and
- preliminary environmental information.

a) Site description

11.7.2. The site currently envisaged to be required for the Farnham bypass mainly comprises a corridor of land within which the road development would be constructed (refer to **Figure 11.6**). The site makes provision for the completed road and embankment width, plus additional land either side which is likely to be needed during construction. The site also includes a contiguous area of land for a dedicated construction compound and two areas of land for flood compensatory storage.

11.7.3. The main corridor of land extends in a north-easterly direction from the junction of the A12 and Low Road/Great Glemham Road, to the west of Farnham and to the east of Stratford St Andrew. The corridor continues in this direction, crossing the River Alde and various drainage ditches, and runs north-west of Farnham and Street Farm before meeting the A12 north of Farnham. The eastern end of the site encompasses the junction of Sweffling Road with the A12 and a short stretch of the A12 beyond.

Table 11.2: Road widening at Farnham Bend preliminary environmental information

Topic	Key considerations
<p>Noise and vibration</p>	<p>Construction</p> <ul style="list-style-type: none"> Occupiers of nearby dwellings and other sensitive receptors are likely to experience noise impacts during the demolition of the existing building and road widening works. However, the works would be temporary, relatively short-lived, and likely to be limited to day time hours only. <p>Operation</p> <ul style="list-style-type: none"> The widened A12 through Farnham would continue to allow traffic through the village, including the Sizewell C construction traffic. Many dwellings facing onto the A12 currently experience high levels of noise from road traffic, and the Sizewell C construction-related traffic is not predicted to give rise to significant changes to the existing noise levels. Refer to Section 6 Transport for further details on traffic-related noise impacts along the A12. <p>Mitigation measures</p> <ul style="list-style-type: none"> Local noise and vibration levels could be minimised during construction, where possible, by selection of quieter construction methods and equipment. Construction times could also be managed to control impact, as well as localised screening being used to control noise exposure. EDF Energy recognises there would be some worsening to the existing high levels of noise experienced on the A12 through Farnham and, subject to further modelling and assessments, will consult on mitigation to minimise traffic-related impacts and improve residential amenity.
<p>Air quality</p>	<p>Construction</p> <ul style="list-style-type: none"> Dust could be generated from site clearance and levelling, and from material stockpiling and management activities. <p>Operation</p> <ul style="list-style-type: none"> The widened A12 through Farnham would continue to allow traffic through the village; this would include the Sizewell C construction traffic. Preliminary modelling indicates that the increased vehicles and associated emissions would not give rise to significant local air quality impacts in Farnham, and levels would be below the air quality objective. <p>Mitigation measures</p> <ul style="list-style-type: none"> Site specific dust management measures would be required to be implemented during construction to control dust generated from construction activities.
<p>Terrestrial ecology and ornithology</p>	<ul style="list-style-type: none"> Road widening at Farnham Bend would not result in any key considerations for ecology and has therefore have been scoped out from requiring any further assessment.
<p>Landscape and visual</p>	<p>Construction and operation</p> <ul style="list-style-type: none"> Road widening at Farnham Bend would be contained by existing built development. However, there would be a change to the immediate townscape character and localised views resulting from demolition of the Post Office Stores building and introduction of new infrastructure. <p>Mitigation measures</p> <ul style="list-style-type: none"> The scope for any visual mitigation measures is likely to be limited but would be considered in more detailed design work.
<p>Amenity and recreation</p>	<p>Construction and operation</p> <ul style="list-style-type: none"> No PRoW fall within the extent of the road widening. However, the construction phase would result in disruption and during both construction and operation there would be perceptual changes to the public highway and recreational users travelling through the village on the roadside pavements. <p>Mitigation measures</p> <ul style="list-style-type: none"> Construction phase mitigation would be provided as part of the traffic management plan, ensuring public access is maintained and/or temporary diversions are in place.

Table 11.2: Road widening at Farnham Bend preliminary environmental information

Terrestrial historic environment	<p>Construction</p> <ul style="list-style-type: none"> • Road widening would result in the loss of the Post Office Stores, a Grade II listed 19th century house and former shop. • Road widening at Farnham Bend would be expected to have limited or no impact on buried archaeological remains. <p>Operation</p> <ul style="list-style-type: none"> • There is the potential for the settings of designated heritage assets in the vicinity of the site to be affected. <p>Mitigation measures</p> <ul style="list-style-type: none"> • A programme of detailed building recording would be agreed with the SCDC and Historic England with regard to the Grade II listed Post Office Stores.
Soils and agriculture	<ul style="list-style-type: none"> • As the Farnham Bend is located within the village of Farnham, there would be no key considerations on soils and agriculture from construction or operation of the road widening scheme. This topic has therefore been scoped out from requiring any further assessment.
Geology and land quality	<p>Construction and operation</p> <ul style="list-style-type: none"> • There may potentially be sources of existing contamination which would need to be managed during construction works. <p>Mitigation measures</p> <ul style="list-style-type: none"> • A risk assessment would be undertaken, and if contamination is present, the adoption of standard good practice measures would ensure that any contamination is segregated at source and remediated for re-use where suitable, or removed from site for disposal. • During construction, the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with the appropriate management plans and agreed pursuant to an approved Code of Construction Practice. • Potential risks to construction workers would be managed through standard health and safety and risk assessment procedures. • Further mitigation measures would be considered, as necessary, throughout the EIA process.
Groundwater	<p>Construction and operation</p> <ul style="list-style-type: none"> • Road widening at Farnham Bend is not anticipated to result in any key considerations for groundwater. <p>Mitigation measures</p> <ul style="list-style-type: none"> • Mitigation of any spills or leaks would be addressed in accordance with the Environment Agency Pollution Prevention Guidelines. • Drainage to be designed in line with Design Manual for Roads and Bridges (DMRB) guidance, with consideration given to use of Sustainable Urban Drainage Systems (SUDS) to minimise recharge lost to groundwater.
Surface water	<ul style="list-style-type: none"> • Assuming that standard measures are in place to prevent contaminated run-off entering local watercourses, the road widening at Farnham Bend is unlikely to impact on surface water and therefore has been scoped out from requiring any further assessment.

11.7.4. Land for the proposed bypass is predominantly arable farmland (Agricultural Land Classification (ALC) Grade 4), with bands of woodland throughout. Much of the site is in the flood plain of the River Alde, comprising predominantly Flood Zone 3 with some Flood Zone 2.

11.7.5. Initial ecological surveys indicate that at least one of the fields comprises marshy grassland, although it is considered most likely that this is species-poor. The area is also likely to be of some value for birds and foraging bats, and a number of the trees within the study area could support bat roosts. There are two ponds along the proposed

alignment that appear to be suitable for great crested newts and a number of the ditches, as well as the river itself, appear suitable for both water voles and otters. However, surveys to confirm the presence of species are ongoing.

11.7.6. The site spans three different landscape character areas, with the majority falling within the 'Valley Meadowlands', characterised by flat landscapes of alluvium or peat on valley floors, grassland divided by a network of wet ditches, occasional carr woodland and plantations of poplar, occasional small reedbeds and fields in agricultural use. At the eastern end, the site extends into the 'Rolling

Estate Sandlands’, which is a rolling valley-side landscape with a mixture of organic field patterns and more rational planned fields with fragmented woodland cover, both ancient and plantation. At the western end, the site is within the ‘Rolling Estate Claylands’, characterised by an organic pattern of hedged pastoral fields and tree belts.

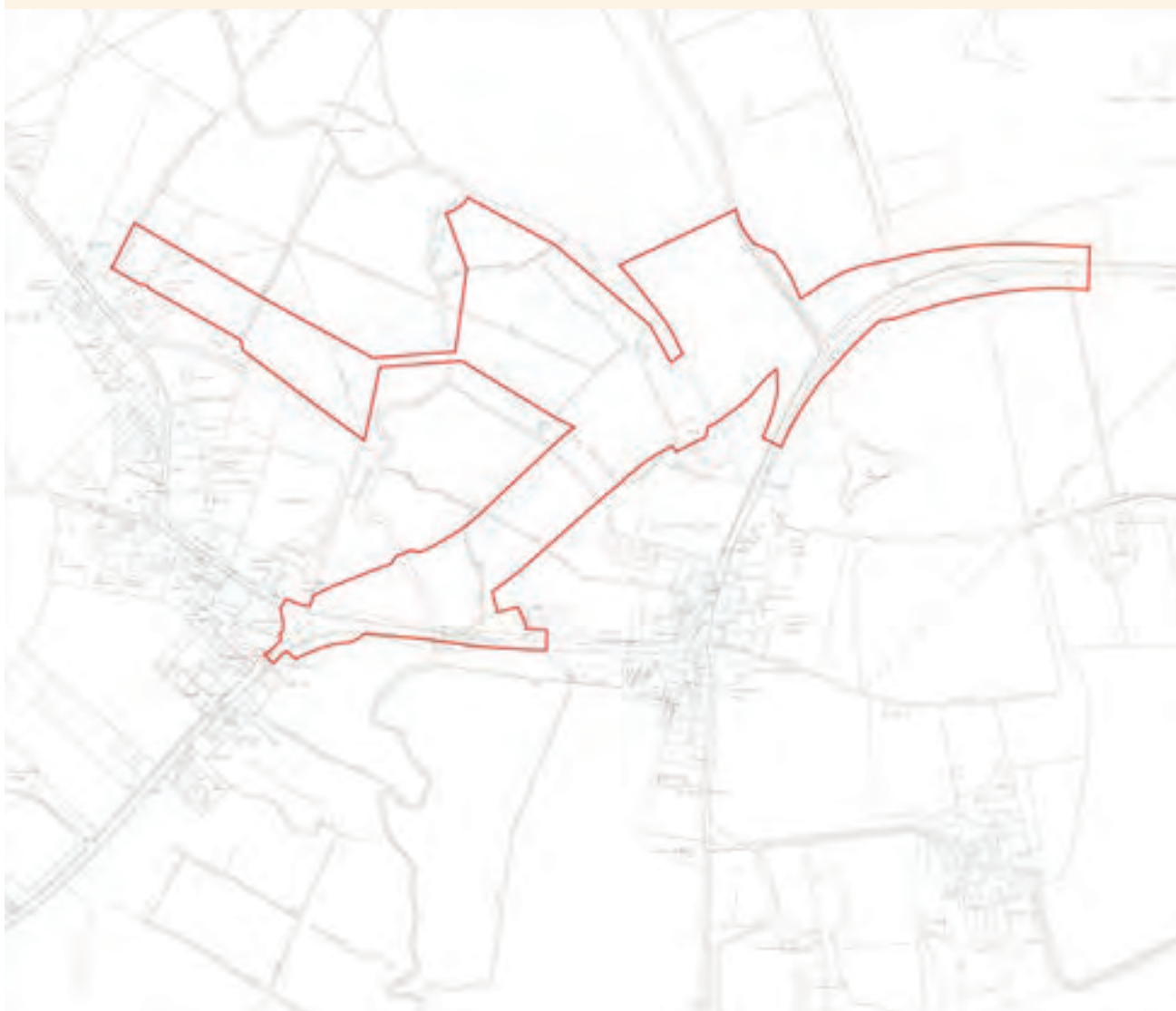
11.7.7. There are a number of PRow in the area, particularly to the north and east of Farnham. Of particular relevance to the site is a public footpath (E-502/006/0) extending from Stratford St Andrew north to Benhall Street and a public footpath (E-137/032/0) from the A12 to the Butcher’s Hole north-east of site which extends to a byway (E-137/033/0). Other public access of note is the 2.1 ha of land adjoining the Riverside Centre. The

Riverside Centre, the local village hall, purchased this land for preservation, conservation and recreational use.

11.7.8. An archaeological desk-based assessment (DBA) has been undertaken and indicates that there is medium potential for archaeological features to be present within the site. The south-western and central parts of the site are located on the River Alde floodplain suggesting the potential for previous settlement would be low, although there is likely to be potential for palaeo-environmental remains. However, there is greater potential within the north-eastern part of the route, as the ground rises from the river valley.

11.7.9. The following key designations and features influence the site’s context:

Figure 11.6 Site for Farnham bypass (Option 3 - 3A and 3B)



- landscape designations, namely the Minsmere SLA, which the site lies within, and the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB), approximately 3.5km south-east;
- ecological sites, including Alde-Ore Estuary Special Protection Area (SPA), Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and Ramsar Site, the Sandlings SPA, Gromford Meadow SSSI, Snape Warren Royal Society for the Protection of Birds (RSPB) Nature Reserve, Iken Wood SSSI, Blaxhall Churchyard County Wildlife Site (CWS), Great Wood CWS, Manor Farm Meadows CWS, Farnham Churchyard CWS, Foxburrow Wood Local Nature Reserve (LNR), and Great Glemham Small Woods CWS; and
- built heritage features, including the St. Mary's church in Farnham (approximately 200m south-east) and St Andrew's church in Stratford St Andrew (approximately 50m east), both of which are Grade II* listed, various Grade II listed buildings in Farnham and Stratford St Andrew and the Registered Parkland of Glemham Hall (approximately 1km south-west).

11.7.10. Air quality monitoring has been undertaken by EDF Energy to establish baseline air quality. Overall, monitoring undertaken by EDF Energy and separately by SCDC has shown generally good air quality throughout the study area, in background locations and also along the designated transport routes for construction and operational traffic. The concentrations along most local roads, outside the AQMAs are less than 90% of the air quality objective. The nearest AQMA is along the A12 to the south of Farnham, in Stratford St Andrew.

b) Masterplan

11.7.11. Since the Stage 1 consultation, EDF Energy has progressed further design work on the Farnham bypass option. This section sets out an alignment, design and key features of the proposed bypass, and is structured as follows:

- general arrangement overview;
- bridge over River Alde and floodplain;
- potential closure of the existing A12 into Farnham;
- landscaping;
- flood compensatory storage areas;
- drainage; and
- construction.

11.7.12. In describing the proposals, details are provided of the various factors which have informed the proposed routing and emerging masterplan (indicative layout), including environmental considerations.

i. General arrangement overview

11.7.13. At present, there are two design options for the Farnham bypass, as illustrated on masterplan Option 3A at **Figure 11.7** and Option 3B at **Figure 11.8**. The two masterplan designs are similar save for the proposed arrangements for connection with the existing A12 leading into Farnham from the north and south respectively.

11.7.14. Option 3A would connect the proposed Farnham bypass into the existing A12 at the north-eastern end at Sweffling Road using a signalised crossroads. The traffic signals at this junction would give priority to traffic on the new A12 bypass, save for the relatively infrequent occasions in which traffic wished to exit the Sweffling Road or the existing A12 at Farnham, when this traffic would receive a green traffic signal.

11.7.15. Option 3B would connect the proposed Farnham bypass into the existing A12 at the south-western end of Low Road/Great Glemham Road using a new ghost-island priority junction (i.e. a T-junction with carriageway road markings that direct right-turning traffic into a separate lane). Sweffling Road would join the bypass at a similar ghost-island priority junction at the north-eastern end.

11.7.16. In either option, the proposed Farnham bypass option would be a single carriageway road, approximately 7.3m wide with 1m hard strip on either side – the total hardstanding width would be 9.3m – and grass verges 2-3m wide on either side. It would be approximately 1km in length, running from the A12 west of Farnham to the A12 north of Farnham. As currently envisaged, the bypass would take the form of a road on a landscaped embankment.

11.7.17. Watercourses would be culverted or bridged, where necessary, to maintain hydrological and ecological function. For example, at the south-western end, the bypass would cross the River Alde on a new bridge.

11.7.18. The road would be designed and constructed in accordance with Design Manual for Roads and Bridges (DMRB) standards. It would become part of the A12 in place of the existing A12 through Farnham.

11.7.19. A 30mph speed limit in the vicinity of Stratford St Andrew is proposed, rising to 50mph at the north-eastern end as it connects into the existing 50mph section of the A12.

11.7.20. Since the Stage 1 consultation the alignment of the bypass has been amended, as much as highway standards allow, to move the road further away from the Riverside Centre. This has reduced the impact of the bypass on the community land immediately east of Low Road/ Great Glemham Road and north of the existing A12.

11.7.21. It is proposed to integrate this existing community land east of the Riverside Centre with a new area of recreational and amenity space on the eastern side of the bypass on land partly occupied by the existing A12, as shown on the masterplans. A new footpath and cycleway would connect these two areas running alongside the River Alde and under the bypass to create a traffic-free pedestrian/ cycle link between Farnham and Stratford St Andrew.

11.7.22. As well as the proposed alignment of the bypass, **Figure 11.7** and **Figure 11.8** show land which may be required for flood compensatory storage, as well as land which may be required on a temporary basis for construction of the bypass.

11.7.23. An indicative illustration of Option 3B of the proposed Farnham bypass is shown at **Figure 11.9**.

ii. Bridge over the River Alde and surrounding floodplain

11.7.24. The Farnham bypass would cross the River Alde on a new bridge, which is proposed as a 23m single span structure with a finished road level approximately

Figure 11.7 Masterplan for Option 3A: Farnham bypass



4m in height above existing ground levels. Headroom of 2.5m would be provided below the bridge to facilitate the new pedestrian/cycleway between Farnham and Stratford St Andrew, which would avoid users having to cross or use the A12. An indicative illustration of the proposed bridge is shown in **Figure 11.10**.

11.7.25. The bridge design proposed would have a curved soffit and the span would be offset so there is additional space on the western side to facilitate walking and cycling beneath the bridge.

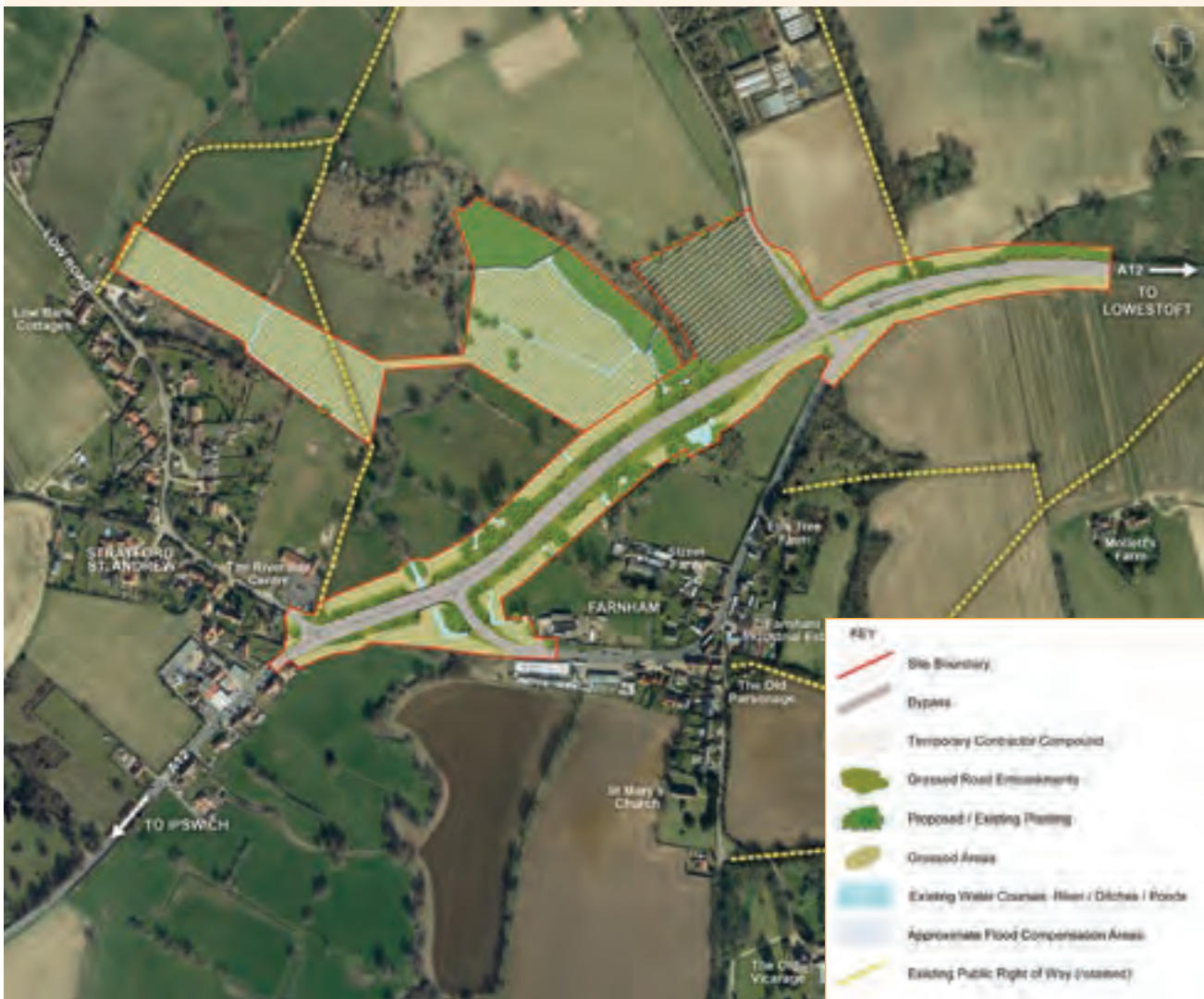
11.7.26. Across the River Alde floodplain, the bypass would be on a raised embankment structure of typically 4m in height above existing ground levels. Two structures would be provided within the embankment so that

agricultural vehicles could pass beneath the bypass. This would enable land holdings severed by the bypass to be worked efficiently. Where the bypass crosses ditches, these would be culverted through the proposed embankment to maintain water flow and ecological connectivity.

iii. Potential closure of the existing A12 into Farnham

11.7.27. As shown on masterplan Option 3A (refer to **Figure 11.7**), one of the possible opportunities created by the Farnham bypass is that it could allow for the closure and stopping up of the existing A12 into Farnham at the south-western end. In this option all vehicles entering or exiting Farnham would use the signalised junction at the north-eastern end of the bypass. The existing A12

Figure 11.8 Masterplan for Option 3B: Farnham bypass



would no longer be a through road and a turning head would be created at the south-western end of Farnham to allow vehicles to turn safely (refer to **Figure 11.11**).

11.7.28. At the northern end of Option 3A the existing A12 would be realigned and a crossroad junction with traffic lights would provide access to Farnham (refer to **Figure 11.12**).

11.7.29. Option 3B would retain a connection into Farnham at the south-western end (refer to **Figure 11.8**).

In this design option, a short stretch of new connecting road, also on a raised embankment, would be made between Farnham and the bypass at the south-western end (refer to **Figure 11.13**). The road would connect into the bypass at a ghost-island priority junction. All vehicles entering or exiting Farnham would use this junction.

11.7.30. EDF Energy considers that providing a single point of access into the village, at the northern end of the bypass in Option 3A or at the southern end in Option 3B, could potentially provide a relatively secluded feel

Figure 11.9 Indicative illustration of Option 3B: Farnham bypass



Figure 11.10 Indicative illustration of the bridge over the River Alde

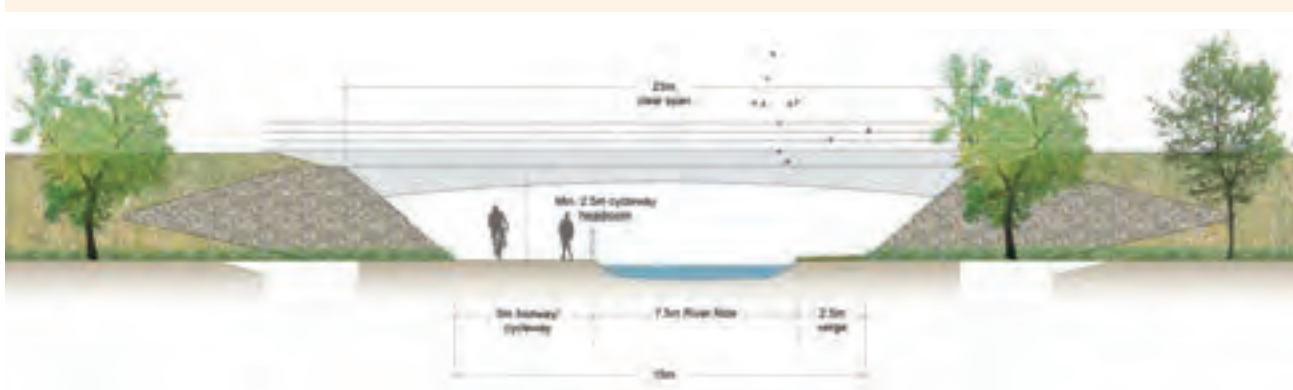


Figure 11.11 Indicative design of Option 3A: closure of the existing A12 into Farnham



Figure 11.12 Indicative design of Option 3A: junction with the existing A12 north of Farnham



and intimacy to the village. EDF Energy is consulting on both Options 3A and 3B and will consider all views and issues raised in any further design work on the bypass.

iv. Landscaping

11.7.31. EDF Energy has developed an initial landscape strategy for both design options of the Farnham bypass, informed by the Suffolk Landscape Character Assessment (Ref. 9.2) and field study. This assessment notes that any new buildings or structures on the valley-side landscape are likely to have an exaggerated visual impact. It states that opportunities should be sought to increase design sensitivity and/or provide mitigation. It also notes that any development proposals should seek to restore, maintain and enhance the network of tree belts and woodland.

11.7.32. The existing and retained landscape features, such as tree planting along the valley floor and the undulating landform, would help to contain views of the bypass from the wider landscape. It is proposed to provide native tree and shrub planting of the bypass embankments to enhance the screening and visual containment of the bypass, including where the bypass would run closest to the Riverside Centre (refer to **Figure 11.7** and **Figure 11.8**). The planting, together with an appropriate lighting scheme, would also help to minimise disturbance to wildlife.

11.7.33. At the northern end of the bypass, where the alignment would rise to meet the existing A12 to the north of Farnham, the embankments would be planted with wildflower/meadow grassland and scrub. This would provide habitat for invertebrates, reptiles and birds.

11.7.34. Other features in relation to the bypass would include culverts through the embankment where the route crosses drainage ditches, which would also provide connectivity for wildlife.

11.7.35. An additional area of amenity land to the east of the bypass at the south-western end, on land partly occupied by the existing A12, would be provided. This is intended to help mitigate the loss of some existing amenity land to the east of the Riverside Centre. The scope for enhancement in this area is potentially greater in Option 3A where the existing A12 into Farnham at the south-western end is closed. The amenity area in combination with the existing Riverside Centre would assist in providing separation between the bypass and the Grade II* listed Church of St Andrew. However, there is potential for indirect impacts to the settings of various designated heritage assets in Stratford St Andrew. Further details will be provided and consulted on prior to the submission of an application for development consent.

11.7.36. The landscaping scheme in this part of the site would include the provision of a new pedestrian and cycle footpath between the Riverside Centre and Farnham. This path would run under the new bridge provided over the River Alde and then over the existing Stratford Bridge crossing of the River Alde, which would be retained for pedestrians and cyclists only.

11.7.37. **Figure 11.15** illustrates an indicative view of the proposed bypass and new River Alde bridge from the amenity space to the east of the Riverside Centre grounds, once the screen planting has matured.

v. Floodplain compensatory storage areas

11.7.38. The bypass and its embankment structure would sit within land that currently forms part of the River Alde floodplain. There may be a requirement to provide some areas of flood compensatory storage land in the vicinity of the bypass, so not to increase existing levels of flood risk.

11.7.39. Potential areas of flood compensatory storage land are shown in the masterplans at **Figure 11.7** and **Figure 11.8**. The precise extent of the flood compensatory storage area would be subject to further work. It is dependent on the final design details of the bypass, the findings of ongoing flood risk assessment work and discussions with the Environment Agency and land owners. Based on work conducted to date, an initial estimate suggests that up to around 12,500m³ of flood compensatory storage could be required, which could require approximately 5ha of land.

11.7.40. To be effective, the areas of compensatory storage would be needed upstream (north) of the proposed bypass. The compensatory storage areas would be excavated to depths of between around 0.25m and 1m. The spoil removed from these areas would need to be moved outside the floodplain. Once excavated, there are likely to be opportunities for landscape and ecological restoration to mitigate any construction phase impacts and provide enhancements through a mixture of woodland planting and wetland habitat creation.

11.7.41. Arrangements would be put in place to retain the compensatory storage areas long-term as part of the floodplain. The details of these would be subject to further discussion with the Environment Agency. Further details will be provided and consulted on prior to submission of an application for development consent.

vi. Drainage

11.7.42. Surface water from the impermeable areas of the proposed bypass (carriageway and adjacent 1m hard strips)

Figure 11.13 Indicative design of Option 3B: retains a connection with the existing A12



Figure 11.14 Indicative design of Option 3B: design of junction with the existing A12 north of Farnham



would be routed to swales running along the length of the bypass within the verge behind the hard strip. The edge of the hard strip would be retained by a flush channel block, as opposed to a kerb, so that water can run-off into the swales.

11.7.43. The proposed swales would be constructed of a granular material above a perforated pipe, which would be laid on a concrete bed. The granular material would filter the surface water run-off, improving the quality of the discharge. There would be catchpit inspection chambers, intermittently located along the length of the swale, to allow for maintenance of the perforated pipe by jetting.

11.7.44. The surface water run-off from the existing fields crossed by the bypass discharges into five watercourses, which ultimately discharge into the River Alde. The discharges arising from the bypass would mimic the existing situation with sections of the bypass discharging into the nearest adjacent watercourse.

vii. Construction

11.7.45. Construction of the Farnham bypass would take approximately 12-18 months, with approximately six months of this period being largely inactive while the embankment settles.

11.7.46. The masterplans for the one village bypass (**Figure 11.7** and **Figure 11.8**) show an area adjacent and to the west of Sweffling Road which has been identified as a potential area for a temporary contractor's compound for materials and equipment storage during bypass construction. This area would be accessed via Sweffling Road, although this may require some initial improvements to Sweffling Road and modification of the existing A12 junction.

11.7.47. Bypass construction would involve importing significant volumes of fill material for construction of the embankments. This material would arrive by road and this could give rise to approximately an additional 100 HGV movements per day over a six month period. HGV movements related to the bypass construction would be subject to any agreed construction traffic management arrangements.

11.7.48. Construction of the bypass would result in some disturbance of soils, a decrease in infiltration to groundwater along the line of the road and the need to manage surface water run-off. Appropriate soil management would reduce impacts on soil quality during construction; detailed arrangements will be developed in consultation with relevant stakeholders. Following construction, the construction compound would be removed and land restored in accordance with a landscape strategy that would be developed and agreed at the appropriate time.

11.7.49. Further details of the construction programme and associated issues with construction of the bypass will be developed as the detailed design evolves.

c) Preliminary environmental information

11.7.50. **Table 11.3** details the key environmental considerations arising from the construction and operation of a bypass of Farnham, as well as potential measures which may be required to avoid or mitigate potential impacts. This includes identification of any different effects and/or mitigation measures between Options 3A and 3B.

Figure 11.15 Indicative illustration of the proposed bypass and River Alde bridge from the amenity space to the east of the Riverside Centre



Table 11.3 Farnham bypass preliminary environmental information

Topic	Key considerations
Noise and vibration	<p>Construction</p> <ul style="list-style-type: none"> Occupiers of nearby dwellings (such as those in the eastern part of Stratford St Andrew) and other sensitive receptors (such as the recreation land/community space at the Riverside Centre) may experience noise impacts during construction of the bypass. <p>Operation</p> <ul style="list-style-type: none"> Preliminary noise modelling indicates a large beneficial noise effect for properties in the village of Farnham given that through traffic through Farnham on the existing A12 would be removed. However, there may be a small increase in noise levels for some properties located in the eastern part of Stratford St Andrew, closest to the bypass, and other sensitive receptors (such as the recreation land/community space at the Riverside Centre). <p>Mitigation measures</p> <ul style="list-style-type: none"> Mitigation options could include sound absorbent road surfaces and screening where necessary and technically feasible. The small increase in noise levels at some properties located in the eastern part of Stratford St Andrews could be mitigated through the provision of acoustic fencing, if appropriate. The requirement for screening would be investigated further once detailed modelling has been undertaken with the updated traffic data. <p>Options 3A and 3B: Traffic-related noise levels could differ between the options, with slightly higher levels at the points where the existing A12 would link into the Farnham bypass. However, it is unlikely to be a significant difference. More significant would be the overall reduction in noise levels through the village of Farnham given that traffic would be redirected down the bypass instead of through the village.</p>
Air quality	<p>Construction</p> <ul style="list-style-type: none"> Additional HGVs (e.g. materials deliveries) and light goods vehicles (e.g. construction workers) would need to access the area. Dust could be generated from site clearance and levelling, as well as material stockpiling and management activities. <p>Operation</p> <ul style="list-style-type: none"> The removal of through traffic from the village of Farnham on the existing A12 is likely to improve local air quality in the vicinity of most residential properties in Farnham. This would be subject to further detailed assessment. Once established, the routing of existing and Sizewell C traffic along the bypass would increase vehicle emissions in the vicinity of the route. However, preliminary modelling indicates that this would not give rise to significant local air quality impacts, and levels would be below the air quality objective. <p>Mitigation measures</p> <ul style="list-style-type: none"> Site specific dust management measures would be implemented during construction to control dust generated from construction activities. <p>Options 3A and 3B: There are no significant differences between the options.</p>

Table 11.3 Farnham bypass preliminary environmental information

Terrestrial ecology and ornithology

Construction

- There would be a loss of valuable grassland, wetland and hedgerow habitat, with the potential to impact upon water quality (and quantity) within the River Alde and ditches. This loss could have consequential impacts upon species such as bats, great crested newts, reptiles and birds, which would be subject to further assessment.
- There is the potential for construction dust, noise and light spill to impact some species.

Operation

- There is the potential for fragmentation effects (e.g. the severance of bat commuting routes to foraging areas) and a risk of road traffic mortality, especially for bats, birds and otters.

Mitigation measures

- Land take would be minimised to reduce habitat loss and fragmentation.
- Lighting, bridges and culverts would be designed to enable bats, birds, otters and watervoles to continue to use the River Alde corridor for commuting and foraging.
- Bridges and culverts would be designed to allow for the passage of eels along the River Alde.
- An appropriate ecology management plan would be implemented.

Options 3A and 3B: There are no significant differences between the two options.

Landscape and visual

Construction

- There would be changes to views from areas of settlement and transport routes in close proximity, namely the A12, Low Street, Low Road, the Riverside Centre, surrounding footpaths and areas of open space.
- There would be changes to the landscape character associated with the introduction of the bypass construction works into existing low lying agricultural land and the loss of established vegetation.

Operation

- Existing views across the river valley and of existing tree/woodland planting would be altered by the embankment for the bypass. Taller elements such as acoustic fencing (if required), signage and lighting may also be visible along the road corridor. However, views of the bypass would be partially screened by retained and proposed vegetation.
- The landscape character would also be altered from an area of agricultural land to a new transport corridor. However, retained and proposed vegetation would help integrate the bypass into the landscape.

Mitigation measures

- Native tree and shrub planting is proposed on the bypass embankments to enhance screening and visual containment. This would be established at the earliest reasonable opportunity.
- Appropriate lux levels or directional lighting would be used during construction and operation to minimise the potential impact on ecological receptors and neighbouring residential occupiers.
- The footprint of the development would be minimised, as far as reasonably practicable, to minimise land take.

Options 3A and 3B: Option 3A would be located primarily within an existing agricultural field, and with the exception of some boundary vegetation with gaps in, it would not cause any loss of key landscape features.

Option 3B would be located within the river valley and would result in the loss of mature trees and require the realignment of a section of an existing watercourse.

Table 11.3 Farnham bypass preliminary environmental information**Amenity and recreation****Construction**

- The site boundary adjoins a PRoW (E-502/006/0) and uses some recreation land/community space at the Riverside Centre. It is considered that there could be potential visual, noise and air quality effects on these receptors.

Operation

- The PRoW (E-502/006/0) could be more susceptible to flooding due to the construction of the bypass in the floodplain. The location of any flood compensation areas would be considered in the context of existing rights of way.

Mitigation measures

- A new access route is proposed under the bypass, connecting the PRoW (E-502/006/0) and Farnham.
- The PRoW already lies within an area of flood risk. It is anticipated that the frequency of flooding would not change as a result of the proposals. Measures such as elevating the footpath could reduce the existing risk of flooding.
- The existing community land east of the Community Centre would be integrated within a new area of recreational and amenity space on the eastern side of the bypass, on land partly occupied by the existing A12. A new footpath and cycleway would connect these two areas. The design and integration of this area would be developed further as part of the progression of the masterplan.

Terrestrial historic environment**Construction**

- There is some potential for archaeological features to be present within the site, which would have to be managed during construction.
- Any surviving organic waterlogged material within the River Alde floodplain may be affected. For example, earthmoving associated with construction would potentially remove any surviving archaeological remains on the valley side (i.e. the north-eastern section of the proposed route).
- Indirect effects on the settings of designated heritage assets in Stratford St Andrew may arise. However, the Grade II* listed Church of St Andrew would be separated from the bypass by the existing Riverside Centre and car parks.

Operation

- The settings of designated heritage assets in the vicinity of the site may be affected.

Mitigation measures

- For buried archaeological remains, mitigation would likely entail preservation by record.
- Existing boundary vegetation would be retained and new planting, bunding and/or fencing would be established as appropriate. The design of the landscape scheme would take into account the historic landscape character and potential indirect impacts to the setting of heritage assets.

Options 3A and 3B: There is very little difference between Options 3A and 3B. Whilst Option 3A would result in a slightly greater extent of intrusive groundwork on ground where stratified archaeological remains are more likely to be present, Option 3B would result in a slightly greater extent of intrusive groundwork where waterlogged or geoarchaeologically significant deposits are more likely to be present.

Table 11.3 Farnham bypass preliminary environmental information

Soils and agriculture

Construction

- Land for the proposed bypass is a mix of arable and pasture. It is likely that the land adjacent to the River Alde is of low grade (ALC Grade 4) whilst the adjacent drier ground may be a higher grade (ALC Grade 2). This land (approximately 1.2ha) would be permanently lost from agricultural production. The stripping and stockpiling of soils required for re-use could result in soil damage/loss of fertility.
- There is the potential for severance of farmland or related farm infrastructure, following consultation with relevant landowners.

Operation

- Operation would not result in any key considerations for soils and agriculture.

Mitigation measures

- Appropriate soil handling procedures would be applied in line with current guidance, developed in consultation with relevant stakeholders.
- The inclusion of agricultural access points beneath the embankment would minimise severance impacts on the relevant farm businesses. Should other issues be identified, such as disruption to livestock drinking water supplies, measures would be included to address these.
- Following construction, agricultural land required temporarily for construction would be restored in accordance with a landscape strategy and other environmental management plans that would be developed and agreed at the appropriate time.

Options 3A and 3B: There are no significant differences between the options.

Geology and land quality

Construction and operation

- There may potentially be sources of contamination along the bypass route associated with soil/spoil handling procedures and re-use of spoil to balance the earthworks. This gives rise to potential risks to controlled waters, users of adjacent sites, future and existing services/infrastructure, construction workers and vegetation, without mitigation.

Mitigation measures

- Construction materials may be reused where suitable and would not cause harm to the environment.
- During construction the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with appropriate management plans.
- Potential risks to construction workers would be managed through standard health and safety and risk assessment procedures.

Options 3A and 3B: There are no significant differences between the options.

Table 11.3 Farnham bypass preliminary environmental information**Groundwater****Construction**

- There may be potential sources of contamination present in the vicinity of the site which could be disturbed by construction activities, giving rise to potential risks to controlled waters, users of adjacent sites, future and existing services/infrastructure, construction workers and vegetation.
- There is the potential for contamination of the soils to occur during construction works (e.g. from escape of fuels and oils from plant and storage tanks).

Operation

- No significant impacts are anticipated during operation as pollution prevention measures for vehicles using the park and ride would be built into the design.

Mitigation measures

- A risk assessment would be undertaken, and if contamination is present, the adoption of standard good practice measures would ensure that any contamination is segregated at source and remediated for re-use where suitable, or removed from site for disposal.
- During construction, the management of any spills or leaks would be treated in accordance with the Environment Agency Pollution Prevention Guidelines and implemented in line with the appropriate management plans and agreed pursuant to an approved Code of Construction Practice.
- Potential risks to construction workers would be managed through standard health and safety and risk assessment procedures.

Options 3A and 3B: There are no significant differences between the options.

Surface water**Construction**

- Much of the site is in the floodplain of the River Alde, comprising predominantly Flood Zone 3 and some Flood Zone 2 land.
- Construction of the bypass over the River Alde could lead to changes in hydrology and the potential for pollution associated with surface run-off from construction activities (including water, sediment and construction materials) and accidental spills.

Operation

- There could be permanent changes to the hydrology of the River Alde.
- Vehicle use of the road could lead to run-off containing pollutants.

Mitigation measures

- Control measures would be adopted, requiring consideration of the drainage implications of the works, in order to remove any potential risks associated with hydrocarbon contamination from vehicles and accidental spillages. Such measures would be implemented in line with appropriate management plans.
- The culvert design would have regard to surface water flows and water quality as well as geomorphology.
- As the bypass would sit within part of the River Alde floodplain, there could be a requirement to provide some areas of flood compensatory storage. The precise extent would be subject to further work and is dependent on the final design details of the bypass, the findings of ongoing flood risk assessment work and discussions with the Environment Agency.

Options 3A and 3B: There are no significant differences between the options.

11.8. Option 4 – Stratford St Andrew and Farnham bypass (a two-village bypass)

11.8.1. Many respondents to the Stage 1 consultation suggested that EDF Energy should provide a more extensive bypass for the villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford. This proposal is known locally as the Four Village Bypass. As discussed above, the local authorities are seeking to progress proposals for a Four Village Bypass. EDF Energy considers that a Four Village Bypass would be a disproportionate intervention to mitigate the effects of Sizewell C traffic and therefore it could not be included within its application for development consent for the Sizewell C Project. However, the Councils have expressed a view that a two-village bypass (of Farnham and Stratford St Andrew) may be an appropriate mitigation for EDF Energy to propose as part of its application for development consent. EDF Energy has therefore included this option as part of this Stage 2 consultation.

11.8.2. The proposals for a two-village bypass and the supporting environmental information that is presented here have been drawn from the work commissioned by SCC. The two-village bypass route presented here is set out as the blue route in 'The A12 Four Villages Study', which was commissioned by SCC and carried out by Aecom. The preliminary environmental information presented here has been drawn from this study. The information does not necessarily represent the views of EDF Energy's advisors. As a result, the level of detail provided here is different to that presented for the other highway options, because EDF Energy has not developed its own proposals for a two village bypass. However, the information is considered to be of a sufficient level of detail to allow consultees to make an informed response as to the proposal's merits when compared to Options 1-3. Should the proposals for a two-village bypass progress further following this consultation, EDF Energy would undertake further work to refine the proposals, including reviewing the alignment of the route. It would also carry out environmental assessments to inform the design development of any such proposals and inform any subsequent stage of consultation.

a) Proposals for a two-village bypass

11.8.3. The two-village bypass would bypass the villages of Farnham and Stratford St Andrew with a new single carriageway road to the south. Once operational, the bypass would form a new section of the A12. The proposed route runs approximately 2.4km across predominantly agricultural land to the south of the existing A12, departing the A12 to the west of Stratford St Andrew

via a new five arm roundabout near Parkgate Farm and re-joining the A12 with a second roundabout to the east of Farnham at the A12/A1094 Friday Street junction. The bypass would be a single carriageway 7.3m wide with 3.5m verges. The side roads would be approximately 6m in width. SCC's alignment is shown in **Figure 11.16**.

11.8.4. The proposed route would cross the River Alde, through Nuttery Belt, clip Pond Wood and skirt around Foxburrow Wood. This route would run through the floodplain. Culverts would be built where the route crosses drains, and a new river bridge would be required where the route crosses the River Alde. In order to protect the River Alde, a diversion of the river under the structure would be necessary.

11.8.5. Where a bypass would cross existing local roads these would be retained where possible. For example, the current proposals include a side road overbridge at the access road to Pond Barn Cottages to allow its continued use. An agricultural underpass and local connections are identified to minimise severance at Farnham Hall. It would be necessary in some cases to divert or terminate routes which would be intercepted by a bypass. For example, the proposals include the termination of a private road for Park Gate Farm and a private footpath and road to Foxburrow Wood.

11.8.6. The proposed route would require some earthworks to suit existing ground levels. Based on the current design, there is a deficit in fill material that would require additional fill material to be brought on-site. Two drainage retention areas are proposed. It is expected that the existing drainage system would be used and improved, subject to further investigation.

11.8.7. The bypass would be designed in accordance with the DMRB so that it could be adopted and maintained by SCC once constructed.

11.8.8. Verge widening is proposed on some curves to provide adequate forward visibility. Fence lines would be positioned to allow for increased visibility. The woodland, known as Pond Wood, may need to be partially cleared to provide appropriate forward visibility.

11.8.9. **Figure 11.17** shows an indicative view of the new five arm roundabout near Parkgate Farm to allow access to the two-village bypass west of Stratford St Andrew.

b) Construction

11.8.10. SCC estimate that construction of the two-village bypass would take approximately three years.

Figure 11.16 Option 4: Stratford St Andrew and Farnham bypass

c) Preliminary environmental information

11.8.11. SCC has provided some preliminary environmental information for the two-village bypass proposals. This information is set out in full in 'The A12 Four Villages Study' commissioned by SCC. A summary of this environmental information, as presented in the study, is set out here to provide stakeholders to this Stage 2 consultation with an understanding of what SCC expects the likely environmental effects of the two-village bypass to be, and what mitigation measures could potentially be used to address those effects. The following environmental information has been extracted directly from 'The A12 Four Villages Study'.

Air quality

11.8.12. The main air quality impact during construction of the bypass would be airborne dust generated during demolition and construction activities. This could result in dust deposition resulting in the soiling of surfaces; visible dust plumes, which are evidence of dust emissions; elevated PM₁₀ concentrations as a result of dust-generating activities on-site; and an increase in the concentration of airborne particles and NO₂ resulting from exhaust emissions of diesel-powered vehicles and equipment on-site.

11.8.13. The bypass would reduce traffic on the A12 between Stratford St Andrew and Farnham, and as a result, it would be likely to improve air quality overall

Figure 11.17 Indicative illustration of Option 4: proposed roundabout and route of the two-village bypass near Parkgate Farm



and remove existing exceedances on this stretch of the A12. The scheme would be likely to result in an improvement in both NO₂ and PM₁₀ concentrations.

11.8.14. The bypass would also be likely to result in an increase in NO_x (oxides of nitrogen) and carbon emissions in 2035.

11.8.15. Mitigation measures to manage dust during the construction phase would be enforced through a dust management plan. At this stage, no mitigation measures are identified for the operational phase of the bypass.

Noise and vibration

11.8.16. Noise and vibration impacts relating to the construction phase of the bypass were not assessed as part of the SCC's preliminary environmental assessments.

11.8.17. Once operational, the bypass would be likely to reduce daytime noise levels for 159 properties that are located close to the existing A12 through Stratford St Andrew and Farnham, as the bypass would reroute the majority of traffic away from this stretch of the A12. The routing is expected to increase daytime noise levels for 58 other properties that are located along the proposed bypass route. No significant adverse noise and vibration impacts are expected to result from the bypass at night.

11.8.18. Mitigation measures would be required to avoid noise exceedances. Where practicable, the bypass would be routed as far away as possible from populated areas. Careful consideration would be given to the vertical

alignment and the use of cuttings in order to maximise the potential for screening of the bypass. The use of acoustic barriers and bunds would also be considered.

Biodiversity

11.8.19. There would be a small potential for the bypass to have indirect effects to hydrologically linked designated sites. Much of the bypass route would run through coastal and floodplain grazing marsh habitat, which would cause some loss and fragmentation of this habitat. The crossing of the River Alde and its tributaries would have an impact on the ecological value of these features. As currently routed, it would be likely to cause direct habitat loss to the north-western corner of Foxburrow Woodland Ancient Woodland, resulting in habitat loss, fragmentation, disturbance and overall reduction in quality of the habitat. The Pond Wood and Nuttery Belt woodlands would also be affected by habitat loss and fragmentation, and ten other named woodlands would be indirectly affected.

11.8.20. In total, seventeen ponds are in the vicinity of the route. Although no ponds would be directly affected by the bypass, substantial areas of great crested newt terrestrial habitat would be lost, and connectivity between the ponds would be fragmented. Multiple tributaries and closely positioned ponds, which may support water voles, may be culverted or lost as a result of the bypass. This would result in habitat loss and fragmentation of habitats for water voles, if present.

11.8.21. Mitigation measures may be required to prevent run-off or sedimentation into connected drainage ditches

and rivers during construction of the bypass. Consideration would be given to a bridge crossing of the River Alde to minimise habitat loss and fragmentation. Should culverts be used, they should be suitable for the safe passage of otters, water voles and bats. Passage points over the road would also be created via roadside planting to encourage bats and birds up and over the road.

11.8.22. Ancient woodland is not replaceable. Effects upon this habitat, including indirect impacts, should be avoided. Underpasses in the vicinity of Pond Wood and Nuttery Belt would be considered.

11.8.23. Pre-construction surveys of the chosen route would be required to evaluate whether great crested newts or water voles would be likely to be affected. This would allow for suitable underpasses, replacement breeding and terrestrial habitat, and/or translocation to be provided if appropriate.

Landscape

11.8.24. The bypass would result in the fragmentation of the landscape and the direct loss of important features including historic parkland landscape, boundary vegetation, mature woodland and riparian vegetation. This assessment is based upon the sensitive routing of the road corridor to avoid large swathes of Pond Wood. Should the route cross Pond Wood, resulting in the removal of large sections of woodland, effects would increase.

11.8.25. The proposed bypass would be likely to have an adverse impact on the visual amenity of properties to the south of Farnham that have close views of the route corridor and the associated bridge crossings. Properties within the villages of Farnham and Stratford St Andrew would experience a less significant reduction of visual amenity due to their increased distance from the bypass and intervening screening elements.

11.8.26. Road users along the existing A12 corridor, and passengers travelling along the railway line, may experience transitory views of the bypass. In addition, a number of PRow are likely to be crossed by the bypass, which would negatively affect the visual amenity of users of sections of these routes.

11.8.27. It is unlikely that mitigation planting would substantially reduce the degree of effect on the overall character of the landscape. However, mitigation planting would help to integrate the road corridor into the wider landscape with the potential to reduce some of the visual effects in the long-term (about 15 years).

Heritage

11.8.28. Construction of the bypass would potentially lead to permanent, partial loss of the remains of a former field system that survives as cropmarks. This asset is considered to be of low archaeological value.

11.8.29. The bypass would result in the part or complete loss of some other heritage assets, including an old field system, two flint scatter and a lithic scatter. These assets are considered to be of low archaeological value. The current route would also impact upon the setting of the listed Farnham Manor, which would have an adverse impact on this heritage asset.

11.8.30. The bypass would likely result in an improved setting for historic features in the villages of Farnham and Stratford St Andrew, including eight listed buildings, due to reduced traffic flows through these villages, resulting in a drop in emissions, noise and pollution.

11.8.31. Further assessment would be required to determine whether any mitigation measures should be undertaken in respect of the heritage assets which would be partly or completely lost. Depending on the results of the evaluation, mitigation measures during construction could include archaeological excavation, strip, map and record, or archaeological watching briefs. Where identified features could not be avoided, they would be fully excavated and recorded in advance of the road construction to allow preservation by record.

Water environment

11.8.32. It is expected that construction of the bypass would generate silt-laden run-off, which would cause short-term, temporary pollution of surface waters without appropriate treatment. Construction could also result in contaminated run-off containing pollutants which are used or stored on-site (e.g. cement, paints, sealant), as well as localised erosion of the bed and banks of the River Alde.

11.8.33. The use of box culverts would be likely to have long-term morphological effects on the receiving watercourses. The bypass could result in the loss of adjacent ponds, which may have implications for drainage.

11.8.34. A management plan would be developed to reduce and manage silt-laden and contaminated run-off. A management plan would include measures to control chemical contamination, spillages or leaks.

11.8.35. At watercourse crossings, open span structures would be used where possible. Where this is

not possible, environmentally sensitive culverts would be designed to minimise erosion. A 'treatment train' would be provided to treat run-off from the operational bypass, including features such as swales, surface flow wetlands, balancing ponds or sedimentation ponds.

11.8.36. Morphological effects from new outfalls would be softened where possible through the use of sensitive design, or off-set by habitat improvements locally around them. Routing of the bypass would avoid ponds where possible. If the route were to result in the loss of any nearby ponds, replacement ponds would be considered.

d) Next steps

11.8.37. EDF Energy recognises that the information presented here for Option 4, in terms of the detail of the scheme proposals and the preliminary environmental information, is not of the same level as that presented for Options 1-3. However, the information that is available at this stage is sufficient to allow stakeholders to inform and express their views about Option 4 as a potential alternative to Options 1–3.

11.8.38. If EDF Energy were to progress this option beyond the Stage 2 consultation there are a number of design issues to investigate and related environmental assessments to undertake, which could result in a revised proposal. These include:

- investigating the potential to create an at-grade crossing of the road running south from Farnham between Nuttery Belt and Pond Wood in lieu of an overbridge;
- considering the realignment of the route to avoid damage or removal of landscape features, such as woodland, where possible;
- repositioning the roundabouts at each end of the bypass off the existing carriageway to reduce the traffic management and disruption during their construction;
- investigating the amount of flood compensation land required, so that existing flooding is not exacerbated;
- identifying suitable embankment and cutting side slope gradients through geotechnical investigation; and
- defining an area for the contractor's compound.

11.8.39. If the proposals for a two-village bypass are taken forward following this Stage 2 consultation, a further stage of consultation would include detailed design proposals and preliminary environmental

information on which feedback would be sought.

11.9. Next steps

11.9.1. At present, EDF Energy has not identified a preference between any of the options, nor determined the extent to which any of them would form part of the application for development consent for the Sizewell C Project.

11.9.2. The 'no change' option remains a possibility pending further work on traffic and environmental issues. The road widening scheme would be a relatively limited intervention when compared to the bypass options. Whilst it would not remove traffic from Farnham, it would ease the pinch-point and improve the flow of traffic through the village. However, its environmental effects must be carefully considered, notably the demolition of a listed building and the passage of Sizewell C traffic through the village. Conversely, it is recognised that both the one and two-village bypass options have the benefit of removing A12 traffic through Farnham and providing a more direct alignment of the A12 in this area. However, as with the road widening scheme, the impacts of both bypass options would be significant and need to be fully considered.

11.9.3. This Stage 2 consultation provides the opportunity to seek views of the local authorities, other consultees and the local community. Following this consultation, EDF Energy will decide how to progress, having regard to feedback from consultation and the outputs of further environmental and technical studies, in the context of the Project objectives (refer to **Section 2 Vision and Objectives**) and planning policy (refer to **Section 3 Planning Policy Context**).

11.10. Highway improvements along the B1122

a) Stage 1 consultation

11.10.1. At the Stage 1 consultation, EDF Energy proposed that the B1122 would be the designated HGV route for traffic between the A12 and the Sizewell C main development site. The B1122 was the approved HGV route during the construction of Sizewell B and it avoids vehicles travelling through Leiston, Saxmundham and other local towns and villages along the B1119. The B1122 would also be the route taken by some cars, as well as buses serving the park and ride facilities and those travelling directly to the main development site. It is recognised that additional Sizewell C construction traffic would be significant relative

to current flows and result in a proportionally greater increase on the B1122 than on the A12 or other local roads.

11.10.2. EDF Energy recognises that some respondents to the Stage 1 consultation considered that the B1122 is an inappropriate road to use to access the main development site. Some respondents stated that the scale of additional traffic associated with the construction of Sizewell C should require the provision of a new direct road from the A12. EDF Energy is also aware that such a new direct road was considered at the time of Sizewell B construction and when earlier proposals for additional nuclear power stations at Sizewell were under development. EDF Energy does not currently consider it necessary or appropriate to construct a new direct road from the A12 to serve Sizewell C during construction and operation for the following reasons:

- the traffic modelling work undertaken to date identifies that even after taking into account the additional traffic movements associated with Sizewell C construction, there is no likelihood of congestion or delay on the B1122. Traffic should continue to flow freely throughout the day, including at peak hours and times of worker changeover;
- the B1122 was the approved HGV route for Sizewell B construction and remains an approved HGV route, which continues to experience regular daily HGV movements, albeit at lower levels than would apply during Sizewell C construction phase. EDF Energy is not aware of evidence to suggest that either previous or current HGV usage of the B1122 has given rise to significant problems in terms of congestion or accidents;
- since the construction of Sizewell B, the balance of planning policy has shifted to some degree away from the provision of new highways infrastructure and more in favour of measures to reduce traffic demand. This policy shift is reflected in the guidance on transport impacts, as contained in NPS EN-1 which encourages applicants to consider and implement traffic demand management measures before considering requirements for the provision of new inland transport infrastructure. EDF Energy's proposals for a major role for sea and rail deliveries, an accommodation campus sited at the main development site and park and ride facilities are examples of demand management measures. These would reduce traffic on the B1122, in line with national planning policy. Park and ride facilities, for example, were not a feature of Sizewell B construction;
- any new direct road from the A12 to the Sizewell C site would be likely to give rise to a range of adverse environmental impacts, would be costly to develop

and would in itself require significant additional HGV movements on the local road network to deliver the necessary materials for construction of the road. Delivery of a new road may also require compulsory acquisition of land; and

- once the main construction phase is complete, the long-term additional traffic flows and HGV movements on the B1122 associated with the operational phase of Sizewell C would be considerably lower than during the construction phase. This, therefore, reduces the justification for a major new permanent road development in the form of a new direct road to the Sizewell C site from the A12.

11.10.3. EDF Energy is also aware that some residents are concerned about the condition of the B1122 and issues of emergency access. EDF Energy anticipates entering into agreements with SCC so that the condition of the road would be assessed prior to the start of construction, maintained throughout Sizewell C construction and improvements implemented if appropriate or necessary. With respect to issues of emergency access, it can be noted that, in the event of an incident or accident preventing the free flow of traffic on the B1122, other routes are available for both Sizewell C-related and other traffic.

b) Transport analysis and traffic modelling

11.10.4. Following further development of the Project proposals, EDF Energy has been able to estimate the scale of additional traffic on the B1122 at peak construction. Current weekday all-vehicle daily traffic flows on the section of the B1122 between the junction with the A12 at Yoxford and the Sizewell C main development site range between around 3,350 and 4,950 vehicle movements per day. The lower end of this range (from 3,350 vehicles per day) is characteristic of the north-western section of the B1122, running between Yoxford and the road's junction with the B1125, which is less busy. The higher end of this range (up to 4,950 vehicles per day) is characteristic of the south-eastern section of the B1122, running from the junction with the B1125 through Theberton and towards the Sizewell site.

11.10.5. Future flows by the time of Sizewell C peak construction (but without Sizewell C-related traffic) are predicted to rise to between around 3,750 and 5,550 vehicle movements per day. This is an expected increase of approximately 400-600 vehicles per day. It is estimated that Sizewell C traffic at peak construction could add approximately a further 1,300 (at the north-western end) to 2,050 (at the south-eastern end) daily vehicle movements along the B1122. This will lead to a total of

between 5,050 (at the north-western end) and around 7,600 (at the south-eastern end) vehicle movements per day. During the peak construction phase (expected to last 1-2 years), this represents an increase in vehicle movements of around 36% along the length of the B1122.

11.10.6. The volume of Sizewell C vehicle movements would vary along the length of the B1122 between Yoxford and Sizewell, because some site-related traffic would access or leave the B1122 further east of Yoxford. Around 350 vehicles are likely to use the B1125 through Westleton and a further 350 vehicles are expected to come from local roads connecting to the B1122. This means that Sizewell C-related traffic volumes would be lowest nearest to Yoxford and would increase as the B1122 gets closer to the Sizewell C site. Although the volume of Sizewell C-related trips is expected to vary along the length of the B1122, the percentage increase would be fairly consistent along the B1122 as increases in traffic due to Sizewell C are expected to be relatively proportional to the levels of existing traffic along the length of the B1122.

11.10.7. An indicative breakdown of the additional 2,050 vehicle movements is detailed in **Table 11.4**, which provides estimated current and future traffic flows through the village of Theberton.

11.10.8. The figures in **Table 11.4** assume that all direct and park and ride buses serving the main development site would use the A12 and the B1122. EDF Energy considers that this is the most suitable route for these buses, whilst local buses could, for example, reach the site via local

roads through Leiston to pick-up workers living there.

11.10.9. The estimate of additional car traffic on the B1122 comprises a number of elements, including commuting journeys by construction workers residing east of the A12, daily visitors to the main development site, and non-work related trips from non-home-based workers and residents of the accommodation campus.

11.10.10. It is recognised that Sizewell C construction traffic on the B1122 would result in a disproportionate increase in larger vehicles compared to the increase in all traffic. At present, HGV and bus traffic flows on the B1122 at Theberton represent around 5% of all traffic, approximately 230 HGV and bus movements per day. This number is estimated to rise to around 240 HGV and bus movements per day before Sizewell C peak construction (an increase of 10 HGVs or buses per day).

11.10.11. During the peak construction phase, Sizewell C traffic would increase the number of HGVs along the B1122 by approximately 450 movements per day on a typical day. The number of buses would increase by about 400 movements. On the busiest day during the construction phase, HGV movements for Sizewell C could be up to a maximum of 900 movements.

11.10.12. EDF Energy has undertaken initial high-level analysis of traffic-related noise impacts on the B1122 and recognises that the additional HGV and other traffic movements are likely to lead to major new adverse noise and amenity impacts for residents living very

Table 11.4: Indicative weekday 24 hour traffic change on the B1122 through Theberton

Traffic flow component	Two way daily vehicle traffic flows
Current daily base year all vehicle traffic flows	Around 4,950 movements
Estimated future reference case (2024) all vehicle daily traffic flows (without Sizewell C)	Around 5,550 movements
Additional Sizewell C traffic: HGVs	Average of 450 movements
Additional Sizewell C traffic: Buses	Up to around 400 movements
Additional Sizewell C traffic: Light goods vehicles	Around 150 movements
Additional Sizewell C traffic: Cars	Around 1,050 movements
Total additional Sizewell C Traffic	Around 2,050 vehicles
Indicative total daily traffic flows including Sizewell C peak construction traffic	Around 7,600 movements
% increase arising from Sizewell C construction	Around 37%

close or adjacent to the B1122. Impacts are likely to be particularly significant during noise sensitive hours, given low existing traffic flows at these times of day. Refer to **Section 6 Transport** for details. More detailed baseline noise surveys have been recently undertaken and will inform the progression of a more detailed noise assessment in this area, with further information to be provided at a subsequent stage of consultation.

11.10.13. EDF Energy acknowledges the concerns of those residents who live adjacent or very close to the B1122. EDF Energy continues to undertake assessments to understand which properties may be significantly impacted (e.g. in terms of their amenity) as a result of Sizewell C-related vehicle movements. Once these assessments have been concluded EDF Energy intends to identify and consult on measures that could be adopted to mitigate those impacts.

c) Overview of highway improvements

11.10.14. EDF Energy has conducted a review of the B1122 which has identified a number of measures which could be implemented to help mitigate the impacts of

Sizewell C construction traffic on residents and road users. These include options to improve road safety for vehicles and pedestrians. It is assumed that all works would be undertaken within a period of approximately 6 months. The measures identified are as follows (as illustrated on **Figure 11.18**), and are described in the proceeding sections:

- an improvement to the junction of the A12/B1122 at Yoxford (**Section 11.11**);
- speed limit reductions on various sections of the B1122 (**Section 11.12**);
- an improvement of the B1122 to the west of the junction with Mill Street (**Section 11.13**);
- options for enhancing the pedestrian environment in Theberton (**Section 11.14**); and
- an improvement to the alignment of the B1122 between Theberton and the Sizewell C construction site entrance (**Section 11.15**).

Figure 11.18: Overview of B1122 proposals



11.11. A12/B1122 Junction

11.11.1. At the Stage 1 consultation EDF Energy indicated that the junction of the A12 with the B1122 at Yoxford was likely to require improvement and that a roundabout could be required. Subsequent analysis has identified that improvements to this junction would be required even if the Project did not come forward.

11.11.2. A 2015 Base Year micro-simulation (VISSIM) traffic model was developed, calibrated and validated against recent junction queue lengths and journey time data to represent prevailing traffic conditions in 2015. The study area extended from just north of the A144 junction with the A12 south-west through

Darsham, ending just south of Yoxford. Three time periods were modelled: 8-9am, 3-4pm and 5-6pm.

11.11.3. Background traffic growth to 2024, the modelled peak construction year, was extracted from the strategic highway model (VISUM) and added to the validated 2015 base model. The resulting Reference Case model predicts the operation of the highway network with forecast population and employment growth, but no Sizewell C construction activity.

11.11.4. Peak construction traffic movements were taken from the VISUM model and added to the 2024 Reference Case model. The resulting model predicts the operation of the highway network under forecast population and employment growth, with Sizewell C peak construction

Figure 11.19 Option A: A12/B1122 roundabout



phase traffic also added, and tests the A12/B1122 junction with two options: traffic signals and roundabout.

11.11.5. The micro-simulation (VISSIM) modelling provided a basis to assess the performance of the local road network in 2024 with and without Sizewell C construction traffic. The modelling concluded that:

- even without Sizewell C construction traffic, the existing A12/B1122 junction has insufficient capacity in 2024 during peak times, with long queues on the B1122 extending back through the B1122 level crossing;
- Sizewell C construction traffic would result in lengthening of queues at the existing A12/B1122 junction;
- mitigation is required at the A12/B1122 junction by 2024 irrespective of whether the Sizewell C construction traffic is present or not;
- both the proposed A12/B1122 options (roundabout and traffic signals) would provide sufficient capacity at the junction in 2024 with Sizewell C construction traffic;
- the roundabout performs better than the traffic signals: generally, the roundabout has shorter queues, and imposes less delay on A12 and B1122 traffic flows; and
- the performance of the A12/B1122 junction options are not affected by the Darsham level crossing or park and ride facility, as they are too far away.

11.11.6. Generic accident rates for different junction types suggest that signalled junctions experience more accidents than roundabouts for the same traffic

flows and that the proportion of slight accidents at a signalled junction (circa 87%) is somewhat lower than at a roundabout (circa 92%). Road safety audits during the design and construction of either junction improvement would minimise the accident risk.

11.11.7. Both the roundabout and the traffic signals options would accommodate the Sizewell C traffic and any increases in traffic flows, and neither would result in traffic queuing, including back to the junction of the A12 with the A1120. Both options would also reduce accident risk, and accommodate Abnormal Indivisible Loads (AILs) to/from the A12 north of the B1122.

a) Option A: Roundabout junction

11.11.8. In order to maximise capacity for the A12 northbound traffic, and optimise the distances to the A1120 junction and the Satis House access, the roundabout option would be positioned about 100m north of the existing A12/B1122 junction (refer to **Figure 11.19**). The roundabout would be off-set to the east of the existing A12 in order to minimise any potential impact on the trees screening Satis House, also enabling the roundabout to be built off-line to minimise traffic disruption during construction. To accommodate the AIL movements, part of the central island would be removable. Any scheme would be designed in accordance with the required standards, including the design of lighting.

11.11.9. Alternative design solutions, including a roundabout at the existing junction location or a roundabout with a segregated left turn lane for A12 northbound flows, raised capacity and/or safety concerns and were not progressed.

Figure 11.20 Indicative illustration of Option A: A12/B1122 roundabout



Figure 11.21 Option B: A12/B1122 signalised junction



Figure 11.22 Indicative illustration of Option B: A12/B1122 signalised junction



b) Option B: Signalised junction

11.11.10. The layout of the proposed signalised junction option is shown in **Figure 11.21**. It includes a separate bypass lane for the AIL vehicles. If required, pedestrian and cycle crossing facilities could be accommodated.

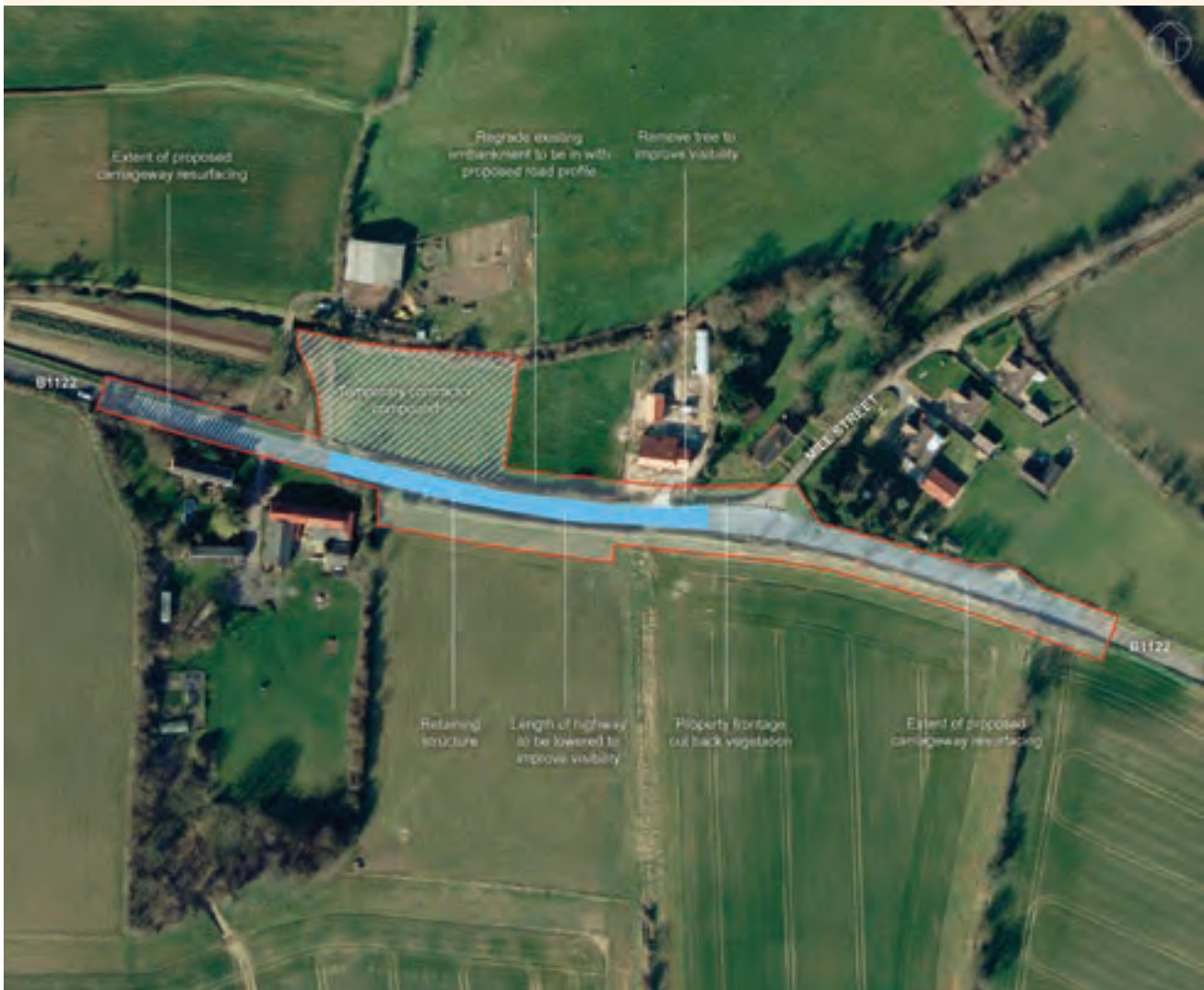
c) Preliminary environmental information

11.11.11. Option B (a signalised junction) would generally be contained within the existing highway land, and would therefore require less land-take than Option A (a roundabout). The proposals are not anticipated to give rise to any significant

environmental effects either during construction or operation, irrespective of which option is progressed. In summary, the potential effects would be limited to:

- a minor loss of verge and individual trees due to creation of the AIL vehicle bypass lane (largely within an existing verge). Footway and kerb-line realignment would arise as a result of Option B, whereas Option A would result in the loss of grassland around the existing sewage treatment works and tree planting along a short section of the A12. However, this section of A12 road corridor is relatively well enclosed by surrounding woodland and is not readily visible from the edge of Yoxford or nearby roads and footpaths;

Figure 11.23 Proposed improvement to the B1122 to the west of the junction with Mill Street



- a minor loss of agricultural land as a result of Option A, but this would not arise in respect of Option B;
 - the potential for protection to great crested newts being required in Option A, if they are found in the nearby ponds; this would not be necessary in respect of Option B;
 - the potential (albeit limited) for disturbance to archaeological remains where there are groundworks, irrespective of which option was progressed;
 - construction of the roundabout is likely to give rise to adverse change to the character of the Yoxford Conservation Area during construction, but these effects would lessen on completion of the works, and as landscaping at the roundabout matures. The bypass lane with Option B would present limited perceived change to the character of the Conservation Area. The potential for adverse impacts on the settings of the Grade II listed White Lodge for both options is limited; and
 - the potential for the mobilisation of contamination (if present), as well as dust and noise impacts arising from any works (e.g. site clearance, levelling and material stockpiling), irrespective of which option were progressed.
- 11.11.12.** During construction, measures would be adopted to ensure satisfactory levels of environmental protection, whilst minimising the potential for disturbance from construction activities, as far as reasonably practicable.

Figure 11.24 Proposed pedestrian crossing and footpath at Pump Cottages



11.12. Speed limit reductions

11.12.1. The current speed limit on the B1122 between the A12 at Yoxford and the proposed access road to Sizewell C varies along the road between 30 miles per hour (mph), 40mph and 60mph zones. EDF Energy considers that it would be appropriate to reduce the speed limit of 60mph, which currently applies between the level crossing over the East Suffolk Line and Middleton Moor, Middleton Moor and Theberton, and between Theberton and the construction site entrance. A reduction to a maximum of 40mph on the stretch between Middleton Moor and Theberton would be more in keeping with the characteristics of the road in this location. It would also help to improve safety and reduce the noise arising from vehicle movements along this stretch. A reduction to 30mph between Theberton and the

construction site entrance would also reduce the extent of land needed to meet visibility requirements at this location.

11.12.2. EDF Energy is also aware that compliance with existing speed limits is a concern for residents on the B1122. It is willing to support measures to help improve compliance with current and any future amended speed limits.

11.12.3. Such reductions in speed limit cannot be delivered or enforced by EDF Energy; it would require the support and sponsorship of SCC as the highway authority. EDF Energy will continue to discuss speed limits along the B1122 with SCC, the police and other interested parties and invites comments on reducing the 60mph speed limit on sections of the B1122.

Figure 11.25 Proposed pedestrian crossing near the Church of St Peter



11.13. West of the junction with Mill Street

11.13.1. The B1122 has poor vertical alignment to the west of the junction with Mill Street. As a result, B1122 drivers have difficulty seeing traffic at the Mill Street junction and traffic leaving Mill Street is not able to see B1122 traffic approaching from the west until it is near the junction. It is proposed to improve the vertical alignment by reducing the road level west of the junction. This would improve forward visibility for traffic on the

B1122 and help traffic exiting Mill Street. This relatively minor improvement would involve reconstruction of this part of the B1122, as illustrated in **Figure 11.23**.

11.13.2. There would be no significant environmental effects as a result of those works. Notwithstanding, during construction, measures would be adopted to ensure satisfactory levels of environmental protection, whilst minimising the potential for disturbance from construction activities, as far as reasonably practicable.

Figure 11.26 Improvement to the alignment of the B1122 between Theberton and the Sizewell C construction site entrance



Figure 11.27 Proposed improvements to cycling infrastructure in the local area



11.14. Pedestrian enhancements in Theberton

11.14.1. A number of respondents to the Stage 1 consultation stated that there are shortcomings in the current provision for pedestrians in Theberton, with some seeking additional crossings in this area. EDF Energy has since considered the scope for enhancing pedestrian provision through Theberton and is therefore consulting on a proposed enhancement for pedestrians near Pump Cottages. Pump Cottages are located just to the north of the main section of the village. Whilst there is a short section of existing footway on the western side of the B1122 at this location, there is no connection to pavements or footways within the main village of Theberton. It is, therefore, proposed to create a new pedestrian crossing south of Pump Cottages and also a footpath on the eastern side of the B1122 to connect to the existing footway outside Ivy Cottages (refer to **Figure 11.24**).

11.14.2. In order to extend the existing footpath near Ivy Cottages and to connect with existing footpaths further

south within Theberton, the design of a new pedestrian crossing and extension to the footpath near the Church of St Peter, Theberton, have been considered. EDF Energy proposes a new pedestrian crossing on the B1122 at the point where the road meets the existing footpath through the addition of a short new section of footpath on the western side of the B1122, as illustrated in **Figure 11.25**.

11.14.3. Implementation of both the enhancement near Pump Cottages (**Figure 11.24**) and the proposed pedestrian crossing near the Church of St Peter (**Figure 11.25**) would, in-combination with existing footpaths, create a pedestrian footpath connection along the length of the village, removing the need to walk in the road at any stage. It is considered that these works would improve pedestrian access through Theberton.

11.14.4. There would be no significant environmental effects as a result of those works. Notwithstanding, during construction, measures would be adopted to ensure satisfactory levels of environmental protection, whilst minimising the potential for disturbance from construction activities, as far as reasonably practicable.

Table 11.5 Proposed improvements to cycle routes and infrastructure

Map reference	Location	Issue to be resolved	Proposed improvement
1	Main development site entrance	New access junction would be designed to cater for the needs of all road users	The proposed roundabout design allows pedestrians, cyclists and equestrians to move safely between the different arms of the junction. A signalised toucan crossing on the B1122 northern arm would be provided.
2	B1122 Abbey Road from Sizewell C site entrance to Lover's Lane	Traffic speeds can be high along stretches of Abbey Road, and the footway provision is incomplete	A shared footway and cycleway is proposed alongside the B1122, with a signalised toucan crossing north of the level crossing to allow safe passage between the two sides.
3	Lover's Lane	Increased vehicular traffic, including during the early years' use of the existing rail terminal	Construction of a new off-road cycle track and bridleway running within and adjacent to the SSSI compensation land in Aldhurst Farm.
4	Sandy Lane (western end)	There are busy roads at either end of this off-road cycle route	New signalised toucan crossing at the north-western end, near the junction with Lover's Lane, connecting with the new off-road route through Aldhurst Farm.
5	Lover's Lane	Currently no dedicated cycling route alongside the carriageway, and likely HGV traffic would increase	Creation of dedicated shared footway/cycleway alongside Lover's Lane.
6	Sizewell Gap	Currently no designated point for crossing Sizewell Gap close to Lover's Lane junction	New informal crossing point to be provided.
7	Buckleswood Road	Proposed green rail route cuts across this existing road used by cyclists	A pedestrian and cycle bridge would be provided to maintain route continuity and allow the railway to be crossed safely.

11.15. Alignment of the B1122 between Theberton and the Sizewell C construction site entrance

11.15.1. The existing horizontal and vertical alignment of the B1122 immediately east of the Onner's Lane/ Moat Road provides poor forward visibility for 60mph. The visibility would remain poor, even if EDF Energy's proposal to reduce the speed limit to 40mph on this stretch of the B1122 were implemented. There has been one serious accident at this location in recent years. EDF Energy is therefore proposing to modify the alignment of the B1122 at this location to improve forward visibility for motorists (refer to **Figure 11.26**). Implementation of the scheme would require some earthworks and probably the loss of a small number of existing trees from Fishpond Grove. The land area shown in red is an indicative location for a temporary contractor's compound to deliver these and the other proposed improvements; no permanent development would occur at this location.

11.15.2. There would be no significant environmental effects as a result of those works. Notwithstanding, during construction, measures would be adopted to ensure satisfactory levels of environmental protection, whilst minimising the potential for disturbance from construction activities, as far as reasonably practicable.

11.15.3. EDF Energy's proposal for a new roundabout junction at the Sizewell C construction site entrance with the B1122 is detailed in **Section 7 Main Development Site**.

11.16. Cycling

a) Introduction

11.16.1. Cycling enjoys great popularity in Suffolk amongst both locals and visitors. EDF Energy is committed to maintaining the appeal of cycling throughout the construction and operational phases of Sizewell C, as well as finding ways of encouraging new workers living in the area to travel by bicycle. EDF Energy is continuing to progress its plans for both the new off-road cycle route and more localised upgrades, which will be informed by feedback to this Stage 2 consultation.

b) Existing cycling and Sizewell C construction traffic routes

11.16.2. During the construction of Sizewell C there would be additional heavy vehicles using several key roads in the area, in particular the designated freight routes (A12 and

B1122), as detailed in **Section 6 Transport**. These roads would be used by HGVs and other light goods vehicles transporting materials to and from the main development site, along with buses and cars taking workers to the site.

11.16.3. The traffic modelling assessments have taken a robust approach, with no trips assigned to cycling. However, in practice it is expected that some workers living within cycling distance of the main development site would choose to ride to work.

11.16.4. A study has been undertaken by EDF Energy identifying the existing cycle routes in the area around Sizewell C, including both on- and off-road, with and without signposting. This has also been informed by input from local cycling groups who have provided details of existing facilities and locations where improvements may be desirable. The cycle routes identified have been compared against the parts of the highway network that are likely to experience the most significant traffic impacts during the construction of Sizewell C. At locations where potential disruption to cycling routes by construction traffic is identified, appropriate diversions and infrastructure improvements will be identified and consulted upon prior to the submission of an application for development consent. In this consultation, only the most local cycling proposals are considered.

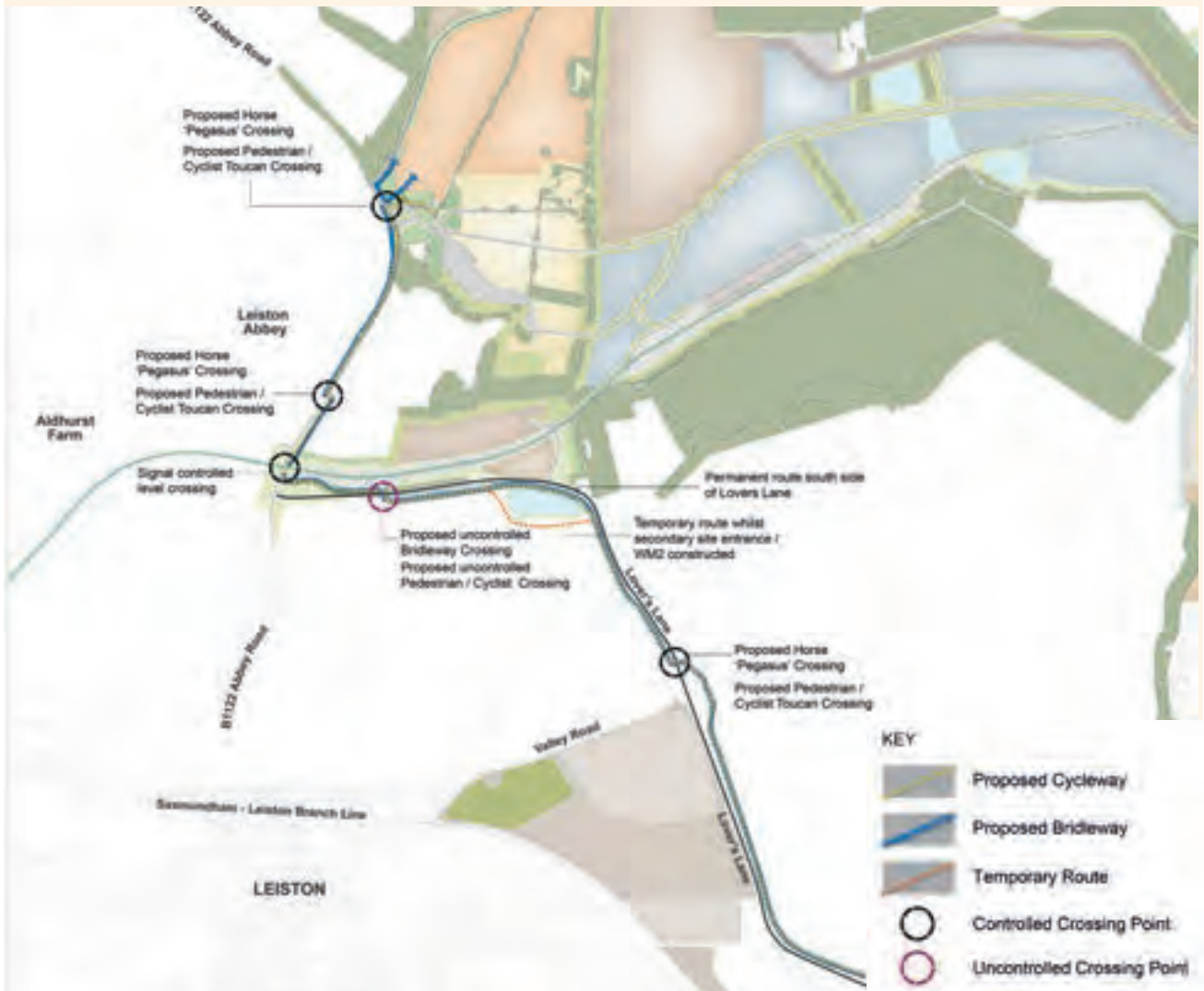
c) Proposed improvements to cycling infrastructure

11.16.5. The construction of Sizewell C and the off-site associated infrastructure works represent an opportunity to enhance cycle infrastructure. **Figure 11.27** illustrates the existing cycling routes in the area, together with the principal routes that Sizewell C construction vehicles would use. Where a potential overlap exists, a series of measures have been proposed to seek to minimise the potential conflict between cyclists and motor vehicles. Locations where upgrades to cycling infrastructure are proposed are numbered on **Figure 11.27**, with further details provided in **Table 11.5**.

d) Proposed new cycle route

11.16.6. EDF Energy proposes to create a new off-road cycle route, which it intends to put in place in the early stages of the Sizewell C construction phase. This route (shown in blue in **Figure 11.27**) would involve the creation of a new off-road cycle track from Sizewell Gap to the construction site entrance, which would then tie into the existing cycle route from Aldeburgh and Thorpeness, utilising quiet on- and off-road sections. The overall proposals for the new off-road route are illustrated on **Figure 11.28**.

Figure 11.28 Proposed off-road cycle route



11.16.7. Starting from a point just east of the junction of Sizewell Gap and King George’s Avenue, the new shared cycleway/footway/bridleway would run northwards along the eastern side of Lover’s Lane, separated from the carriageway and behind the hedgerow, as shown in **Figure 11.28**. As part of the plans for the land north of King George’s Avenue (refer to **Section 8 Rail**), a new access into the proposed freight laydown area would be constructed off Lover’s Lane, with another access off Valley Road also present. By routing the cycleway east of Lover’s Lane until a point north of its junction with Valley Road, these accesses can be avoided.

11.16.8. North of the junction with Valley Road, adjacent toucan and pedestrian crossings would be provided across Lover’s Lane. This would allow equestrians using the bridleway running along Sandy Lane to cross the road in safety alongside pedestrians and cyclists. The shared cycleway/footway would be joined by a soft-surfaced bridleway to provide adjacent routes, for cyclists and equestrians respectively, within the Aldhurst Farm Habitat Creation Scheme (refer to **Section 4 Project Overview** for details of the scheme). This would run through landscaped areas and away from Lover’s Lane; the alignment through Aldhurst Farm would also avoid the proposed secondary site access off Lover’s Lane.

11.16.9. An informal crossing point would also be located on Lover's Lane, close to where the old and new alignments of Lover's Lane diverge. Cyclists and equestrians would be able to make use of the original alignment and reach the B1122 without needing to share the road with vehicles.

11.16.10. The level crossing where the B1122 would meet the green rail route would require the existing alignment of Lover's Lane to be slightly modified to provide the necessary waiting areas either side of the railway for pedestrians, cyclists and equestrians. The separate routes for these non-motorised users would run along the eastern side of Abbey Road. On this side of the road, areas would be provided on both the north and south sides of the railway for cyclists and equestrians to wait when the barriers are closed to allow trains to pass. Pedestrians, cyclists and equestrians would be able to cross the B1122 at a signalised toucan and pegasus crossing. This would be sited to the north of the Abbey Lane junction in order to provide the necessary spacing from the level crossing.

11.16.11. The shared footway/cycleway and bridleway would run northwards to the west of the B1122. To achieve the required width for these off-road routes, whilst minimising the impact on existing hedgerows, the equestrian and cycle routes would run west of the B1122 hedgerow, which also screens Leiston Abbey from B1122 traffic.

11.16.12. The proposed construction site access would take the form of a roundabout on the B1122. The proposed design includes signalised toucan and pegasus crossings on the B1122 northern arm. Cyclists would be able to use the old alignment of the B1122, avoiding the need to use the roundabout. For cyclists wishing to travel north towards Eastbridge and Westleton Walks, a cycleway to the north of the roundabout would connect into the realigned Eastbridge Road. **Section 7 Main Development Site** includes further details on the proposed site access arrangements.

11.17. Rights of way strategy

a) Introduction

11.17.1. A number of existing rights of way extend across the EDF Energy Estate, including the main development site, which are illustrated in **Figure 11.29**.

11.17.2. EDF Energy is currently developing an access strategy based on the following principles, which are illustrated in **Figures 11.29** and **11.30**:

- Operation:
 - to restore any rights of way that were closed or diverted during construction and seek opportunities for enhancement and/or betterment;
 - to improve the amenity of the rights of way network across the EDF Energy Estate;
 - to improve connectivity and linkages from Sizewell C to the wider area, especially north-south connectivity;
 - to improve provision of circular routes within the EDF Energy Estate; and
 - to improve site signage.
- Construction:
 - to minimise physical disturbance of existing rights of way;
 - to retain connectivity, where possible, especially north-south connectivity;
 - to minimise disturbance to the Suffolk Coast Path and Sandlings Walk;
 - to provide appropriate diversion routes where disturbance or physical closure of routes cannot be avoided; and
 - to provide mitigation to rights of way to minimise affects on their amenity.

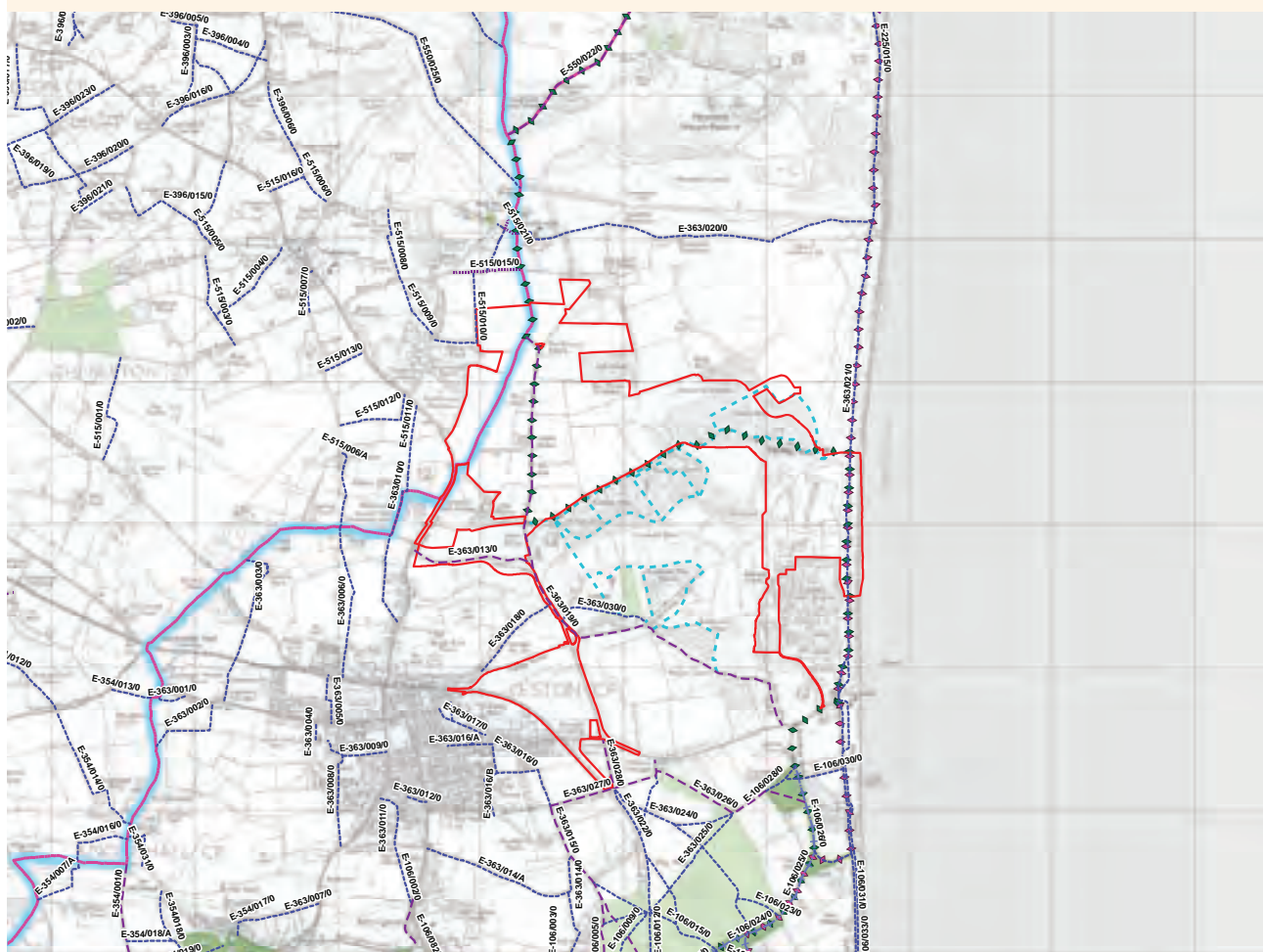
b) Construction phase

11.17.3. The Suffolk Coast Path and Sandlings Walk extend along the foreshore to the east of Sizewell A and B stations and the main development site. The route would be subject to disturbance and change as a result of the construction of new sea defences and cross shore infrastructure (refer to **Section 7 Main Development Site**). Therefore, it is proposed that the existing right of way would be realigned during early stages of construction to the east and seaward of the existing low embankment to accommodate some sea defence works. For the remainder of the construction phase, the path would be moved west to extend parallel to a temporary screening bund/embankment (refer to **Figure 7.30**).

11.17.4. The phasing and programme for the construction of the new sea defences has been carefully explored to minimise periods of closure to public access along the shoreline, as this would require an inland diversion route. EDF Energy has also sought to minimise the visibility of the works along the coastline through careful positioning of screen mounding.

11.17.5. A temporary jetty is proposed to enable large vessels to dock and deliver materials into the main development site (refer to **Section 7 Main Development**

Figure 11.29 Existing rights of way across the EDF Energy Estate



Site). The design of the jetty and sea defences has taken into account clearance heights for pedestrians walking along the coastal path, and emergency vehicles that patrol the shore. A diversion would be provided for the Suffolk Coast Path and Sandlings Walk to allow for its closure during essential construction works.

11.17.6. A Beach Landing Facility is also proposed to enable boats to dock for the delivery of Abnormal Indivisible Loads (AILs) (refer to **Section 7 Main Development Site**). A diversion would be provided for the Suffolk Coast Path and Sandlings Walk to allow for its closure during essential construction works and for the delivery of AILs. EDF Energy would seek to minimise the period of these closures. The proposed diversion route would extend inland from Sizewell village to the south to re-join the coast at the Minsmere Sluice to the north. The initial portion of the diversion route would extend along Sandy Lane. At the junction of Sandy Lane with Lover’s Lane a crossing is proposed over the road to allow for the connection of the diverted Suffolk Coast Path and

Sandlings Walk along a new north–south (off-road) route. It would be designated as a combined bridleway, cycleway and footpath. The route would extend parallel to Lover’s Lane, and towards and parallel to the B1122 to connect to the north. The route includes provision for controlled and uncontrolled road crossings suitable for horses, cyclists and pedestrians. A level crossing would be provided in connection with the construction phase rail route. The level crossing would be removed following the construction of Sizewell C and the removal of the temporary rail line.

11.17.7. As described in **Section 7 Main Development Site**, there are currently two main options for the layout of the accommodation campus. These options would result in different route connections to the north from the new north-south right of way, as follows:

- Option 1: The southern portion of Eastbridge Road and the Sustrans route designated along it would be closed during the construction phase. A new Eastbridge Road to the west would reconnect to the existing Eastbridge

Road in the vicinity of the access track to Potter’s Farm. The bridleway, cycleway and footpath would run along the new Eastbridge Road.

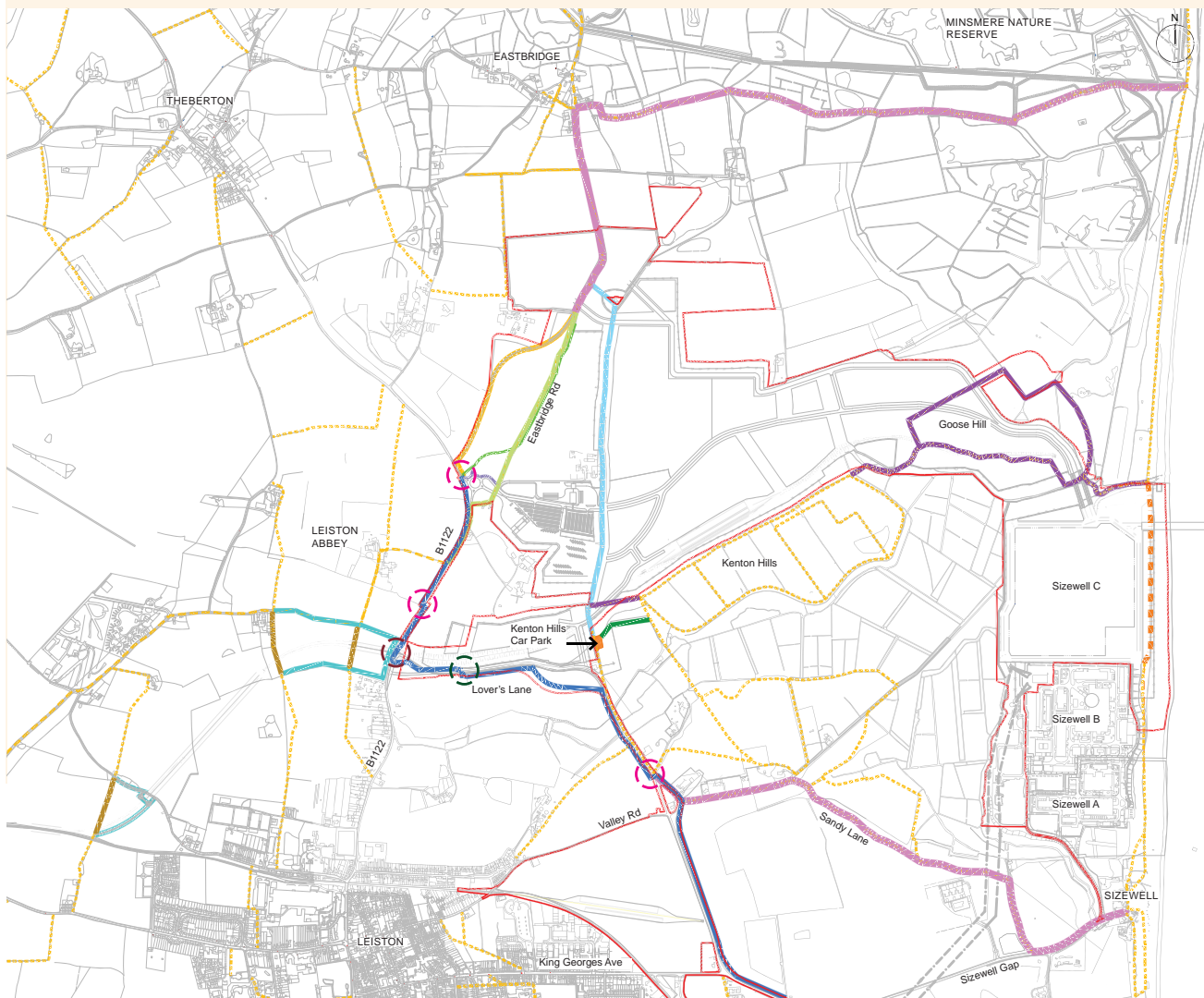
- Option 2: The existing Eastbridge Road would remain open during the construction phase, along with the Sustrans route, but with the addition of an off-road bridleway running parallel to it. This off-road route would allow for the closure and diversion of Bridleway 19 during the construction phase.

11.17.8. Bridleway 19 currently extends through the middle of the main development site. The majority of this bridleway would be closed during the construction phase. During this time the route would be diverted along the proposed combined bridleway, footpath and cycleway

extending parallel to Lover’s Lane and the B1122 and along the existing or new Eastbridge Road (subject to which accommodation campus option is progressed).

11.17.9. The southern end of Bridleway 19 would remain open to the public during the construction phase, enabling access to the existing Kenton Hills’ car park and the extensive permissive footpath routes within Kenton Hills. A new permissive footpath is proposed from the car park to link to the existing network of paths in Kenton Hills, formalising an existing informal route. A short, normally gated, permissive right of way that connects Bridleway 19 to the Kenton Hills would be closed during the construction phase but re-opened following the completion of the construction phase of Sizewell C.

Figure 11.30 Construction phase access strategy



11.17.10. The Sandlings Walk is a footpath route that extends through the main development site, along definitive and permissive rights of way. The route extends along the coast (that portion is described above along with the Suffolk Coast Path) and through the Kenton Hills to connect to Bridleway 19. A portion of the Sandlings Walk that extends along a permissive right of way from the coast to the Kenton Hills would be closed during the construction phase along with an additional permissive right of way loop. The Sandlings Walk would be diverted along the existing right of way that extends from the Minsmere Sluice to Eastbridge to reconnect inland with the existing route of the Sandlings Walk extending north-south.

11.17.11. The proposed construction phase includes the provision of a rail line into the main development site (refer to **Section 7 Main Development Site**). This would sever three footpaths to the west of the B1122. One footpath to the far west near Buckleswood Road would be reconnected by a new temporary footbridge. The two rights of way more immediately west of the B1122 would be diverted parallel to the rail corridor and reconnect to the rights of way via Abbey Lane after crossing a proposed controlled level crossing on the B1122.

c) Operational phase strategy

11.17.12. The operational phase would allow all existing permissive and definitive rights of way to substantially revert to their original alignment and condition. New rights of way are also proposed. The status of these (e.g. definitive rights of way, permissive rights of way or works within the adopted highway boundary) will be explored with the relevant stakeholders.

11.17.13. The Sandlings Walk would be reinstated on its original alignment. A portion of the Sandlings Walk on a permissive route through the EDF Energy Estate, in the vicinity of the proposed access road to Sizewell C and crossing over the SSSI marshes, would be realigned. This would allow the existing looped permissive route through Goose Hill to provide connectivity to the coast.

11.17.14. The Suffolk Coast Path and Sandlings Walk would be reinstated on a slightly realigned route fronting the power station and east of the new sea defences once constructed. It would extend through a newly formed coastal grassland area.

11.17.15. An additional informal route would also be provided on the lower slopes of the main new sea defence embankment. **Figure 7.20** illustrates the conceptual arrangement for the new sea defences with an indicative

routing of the path on the eastern slope of the 10m mound. The new sea defences (refer to **Section 7 Main Development Site**) would establish an attractive new setting for the path, in a naturalistic coastal grassland/ dune setting, similar to that already experienced.

11.17.16. Should the new Eastbridge Road option be progressed, the long-term proposal for the existing Eastbridge Road would be to reopen it as a bridleway, footpath and cycle route, with vehicles using the new Eastbridge Road. Should the existing Eastbridge Road remain open during construction the long-term proposal would be to retain the proposed new off-road bridleway as a right of way, with the Sustrans route and pedestrian use of Eastbridge Road remaining.

11.17.17. The proposed north-south, combined bridleway, cycleway and footpath, created during the construction phase, would be retained for the operational phase. This route would provide an improvement to the right of way network. As part of this improvement the route would be extended south from Sandy Lane, to run parallel with the eastern side of Lover's Lane through the EDF Energy Estate. This would allow for improved connections to the existing Bridleway 28, south of Lover's Lane.

11.17.18. The new formalised link from the Kenton Hills car park, linking to the extensive rights of way network in the woodland, would be retained for the operational phase. The permissive route connection to Bridleway 19 would be reopened.

d) Next Steps

11.17.19. In terms of developing the principles, EDF Energy will undertake the following in consultation with the relevant stakeholders:

- refine the initial access strategy, with further consideration given to wider off-site connectivity and development of proposals to allow public access to the Aldhurst Farm habitat creation area;
- develop the network of rights of way across the EDF Energy Estate, including the possible provision of circular routes;
- identify the status of rights of way and signage strategies;
- develop the detail of the measures (e.g. route dimensions and surface finishes) and programme of works.

12. Related Assessments and Approaches

12.1. Introduction

12.1.1. In addition to the evolution of the strategies and proposals, EDF Energy has been making progress on the assessments that are subject to their own regulations and requirements. EDF Energy is using an integrated approach whereby strategies and proposals are developed to enable early progress of the related assessments described in this section. This also allows for a coordinated approach to achieving the Project Vision and objectives, as set out in **Section 2 Vision and Objectives**.

12.1.2. The first part of this section provides an overview of the outputs of the related assessments, describing the approach, progress to date and next steps as follows:

- **Section 12.2** the Environmental Impact Assessment (EIA);
- **Section 12.3** the Habitats Regulations Assessment (HRA);
- **Section 12.4** the Flood Risk Assessment (FRA); and
- **Section 12.5** the Water Framework Directive (WFD) compliance strategy.

12.1.3. The second part of this section describes the approach being taken on project-wide matters as follows:

- **Section 12.6** the conventional waste strategy and related assessment; and
- **Section 12.7** sustainability.

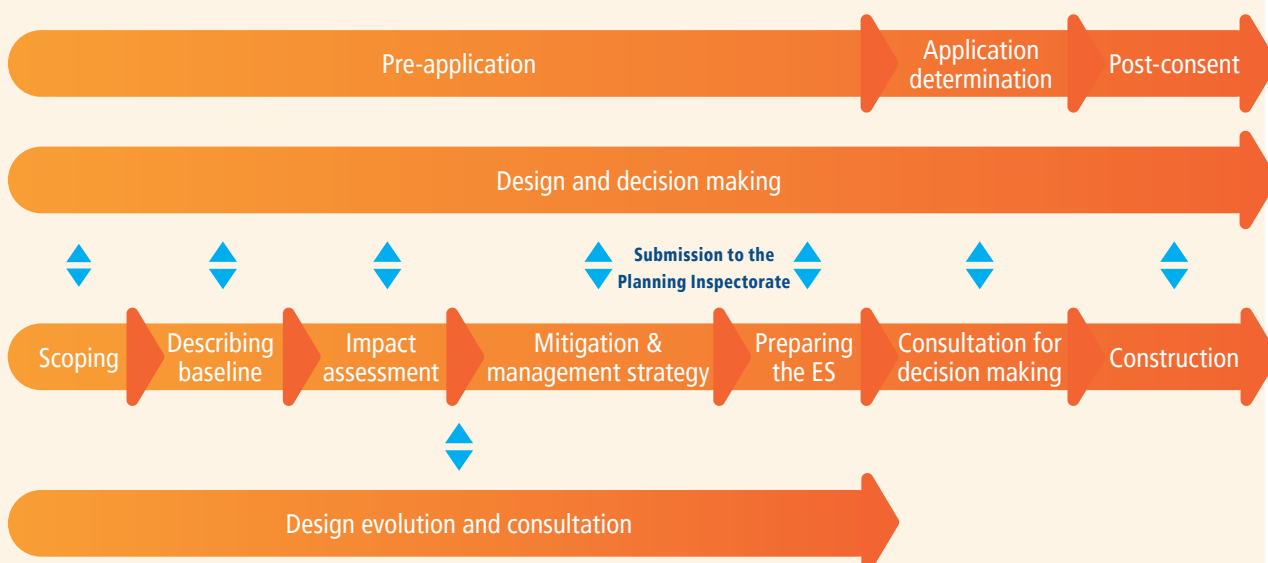
12.2. Environmental Impact Assessment

a) Introduction

12.2.1. The EIA is an iterative process that examines the potential effects on the environment resulting from a proposed development. It is an inherent part of the evolution of a project, identifying constraints and opportunities and informing the design so that any potentially significant environmental effects are mitigated. **Figure 12.1** illustrates the process that EDF Energy is undertaking in its EIA for the Sizewell C Project (the Project).

12.2.2. The EIA will consider the potential significant effects on the environment resulting from the construction and operational phases of the Project. In accordance with the Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999 (as amended) (Ref. 7.2), a separate EIA will be undertaken at the end of the operational phase prior to decommissioning works commencing.

Figure 12.1 EIA process for the Project



b) EIA screening

12.2.3. The first step is to determine whether an EIA is required to be undertaken for a proposed development, known as EIA screening. This step is undertaken in accordance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended) (the EIA Regulations) (Ref. 12.1).

c) EIA scoping

12.2.4. Once it has been determined that an EIA is required, a scoping process may be undertaken in order to identify the environmental topics and issues that require assessment and the proposed scope and methodology of those assessments. The matters that are scoped into the EIA are those that are considered likely, without effective mitigation, to have the potential to cause a significant effect. The matters that are scoped out of the EIA are those that are considered not likely to lead to a significant effect, regardless of the need for mitigation.

12.2.5. EDF Energy submitted an EIA Scoping Report to the Secretary of State in April 2014 (Ref. 12.2). The Secretary of State considered the EIA Scoping Report and, after consulting various bodies, set out in its Scoping Opinion (Ref. 12.3) what information should be included in the Environmental Statement (ES) to be submitted in support of an application for development consent for the Project. The Scoping Opinion identified that the consultation bodies were generally satisfied with the proposed approach, stating that it reflected the ongoing discussions between the parties.

12.2.6. EDF Energy will address any specific issues throughout the EIA process, liaising with stakeholders as appropriate. The ES will detail how regard has been given to the Scoping Opinion, as well as including all of the information required to comply with the EIA Regulations.

d) Current status and next steps

12.2.7. Since the Stage 1 consultation, EDF Energy has continued to collect preliminary environmental information to identify any significant environmental effects that may arise in connection with the Project. In doing so it has started to consider how these effects may be addressed, for example through the identification of mitigation measures. **Section 1 Introduction** describes how preliminary environmental information is included within this document, namely in **Section 5–Section 11**.

12.2.8. Feedback from this Stage 2 consultation will inform the scope and detail of the preliminary environmental information to be presented at

any further stage of consultation, and ultimately the ES submitted in support of an application for development consent. This information will include:

- a description of the proposals;
- an indication of any difficulties (e.g. technical deficiencies) encountered in compiling the required information;
- an outline of the main alternatives considered and the main reasons for the choices made, taking into account potential environmental effects;
- a description of the aspects of the environment likely to be affected by the proposals;
- a description of the likely significant effects of the proposals on the environment;
- a description of the measures envisaged to prevent, reduce and, where possible, off-set any significant adverse effects on the environment; and
- a non-technical summary.

12.3. Habitats Regulations Assessment

a) Introduction

12.3.1. The Habitats Directive (Ref. 3.3) was transposed into national law and provides stringent legal protection to sites designated as being of European (or international) importance for nature conservation. It takes effect in addition to other forms of protection that may apply, such as in relation to Sites of Special Scientific Interest (SSSI), or through protected species legislation.

12.3.2. The nearest European sites to the main development site are:

- the Minsmere to Walberswick Heaths and Marshes Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar Site, located adjacent and to the north of the main development site;
- the Outer Thames Estuary SPA, the immediate offshore marine environment inside and outside of the Sizewell bank; and
- the Sandlings SPA, located to the south of the main development site.

12.3.3. Potential effects on other European sites located further afield are also being investigated.

12.3.4. The assessment (referred to as a Habitats Regulations Assessment (HRA)) is a two stage process. The first stage considers whether the proposals (either acting alone or in-combination with other plans and projects) have the potential to cause a significant effect. This is called Likely Significant Effect (LSE) screening, which is a high-level review of all potential cause-effect impact pathways on European sites.

12.3.5. Potential cause-effect impact pathways are considered in relation to the specific interest features of the designated site that make it special (i.e. particular types of habitat or species). The assessment also considers potential effects on habitats outside of the designated site where these habitats support the special interest features of the designated site, for example birds which may forage over a large area.

12.3.6. A further stage of the process considers areas of potential LSE that are subject to detailed investigation in order to establish if effects are likely to occur and, if they are, how significant the effects would be. This stage is termed 'Appropriate Assessment', and considers the likely effects of the proposals (alone and in-combination with other plans and projects) on the interest features of the site. 'Significance' in this context is a measure of whether the proposals have the potential to compromise the site's conservation objectives (i.e. whether the effect has the potential to undermine the designated criteria of the European site). Where significant effects are predicted, mitigation needs to be considered.

12.3.7. An important principle of the HRA is that it is carried out on a 'precautionary' basis. This means that it must be established beyond reasonable scientific doubt that significant adverse effects on European sites would not occur as a result of the proposals. It follows that robust evidence (i.e. project information, baseline data, published evidence on likely receptor responses to impacts) is required to inform the assessment.

b) Evidence Plan

12.3.8. Preparation of an Evidence Plan is a new, voluntary and developer-led process. It aims to facilitate early, effective and sustained pre-application consultation between developers and relevant nature conservation stakeholders to agree the evidence that needs to be provided to inform the HRA.

12.3.9. Since March 2014, EDF Energy has been working with a wide range of statutory and non-statutory stakeholders to develop an Evidence Plan for the HRA. These stakeholders include: Natural England (in their capacity as the Lead Statutory Nature Conservation Body); the Environment Agency; the Marine Management Organisation (MMO); Suffolk Coastal District Council (SCDC); Suffolk County Council (SCC); the Planning Inspectorate (in their capacity as advisors to the Secretary of State); the Major Infrastructure Environment Unit; Suffolk Wildlife Trust; and the Royal Society for the Protection of Birds (RSPB).

12.3.10. The Evidence Plan has been published on the Planning Inspectorate's website (Ref. 12.4). It sets out an agreed position with the stakeholders on areas of potential impact in relation to European sites, as well as specifying the environmental information that needs to be provided to inform the impact assessment. This was based on the best available information available at the time and will be kept under review.

12.3.11. Since publication of the Evidence Plan, EDF Energy has held a number of workshops with the stakeholders to examine aspects of the HRA. This has included potential effects on groundwater and surface water resources and consequential effects on ecology in the site's vicinity and potential disturbance effects on breeding marsh harriers at Minsmere. It also included potential recreational disturbance on European sites caused by the presence of construction workers and the displacement of a proportion of existing recreational users from Sizewell Beach into sensitive and protected habitats, with a particular focus on dog walkers.

c) Next steps

12.3.12. EDF Energy will continue to implement the Evidence Plan and hold discussions with stakeholders on key aspects of the developing HRA. EDF Energy will present and consult on its draft shadow HRA prior to submitting an application for development consent.

12.4. Flood Risk Assessment

a) Introduction

12.4.1. As detailed in NPS EN-1 (Ref. 1.1), applications for energy projects of one hectare or greater in Flood Zone 1 (in England), and all proposals for energy projects located in Flood Zones 2 and 3, should be accompanied by a Flood Risk Assessment (FRA).

12.4.2. The FRA will be undertaken in accordance with the Office for Nuclear Regulations' (ONR) and the Environment Agency's joint advice note (Ref. 12.5); NPS EN-1 and NPS EN-6 (Ref. 1.2); the National Planning Policy Framework (NPPF) (Ref. 3.5); and the technical guidance to the NPPF (Ref. 12.6).

12.4.3. A FRA will be undertaken for the Project given that part of the main development site is located in Flood Zone 3, the site area is over one hectare and some of the off-site associated developments (e.g. some of the options for highway improvements) are anticipated to have impacts on flooding. The assessment will consider flood risk both to, and as a result of, the proposed developments over the lifetime of the Project. Effects on flood risk arising from climate change and coastal geomorphological change will be considered in the FRA. EDF Energy will consult on its draft FRA at a further stage of consultation, prior to submitting its application for development consent.

b) Process

12.4.4. EDF Energy has undertaken an exercise to agree the scope of the assessment with relevant statutory stakeholders, including the Environment Agency, the East Suffolk Internal Drainage Board, SCC and SCDC. These consultees will continue to be involved in the evolution of the assessment work, including discussion on the assumptions and review of the modelling work. The scoping phase identified potential sources of flood risk, flood pathways and receptors. It also identified the relevant information that exists, as well as that required, and set out broadly the methodology to be used, including numerical models, to inform the assessment.

12.4.5. EDF Energy is in the process of developing numerical models in order to investigate flood risk. In some instances, early versions of these models have been used to inform initial stages of design. At the same time, work has been undertaken to generate the input parameters into those models (e.g. sea levels, wave heights and river flows). This process is ongoing.

12.4.6. As far as possible, the FRA will be aligned with the Nuclear Safety Case in terms of data and methodologies used. The ONR has been, and will continue to be, engaged during the consultation process.

c) Key considerations

12.4.7. The following sources of flooding, which were identified during scoping, will be considered in the FRA: coastal, fluvial, groundwater, surface water due to intense

rainfall (pluvial) events, sewers (due to intense pluvial events) and non-natural water bodies (i.e. canals and reservoirs). The most significant types of flood risk for the Project are considered to be coastal, fluvial and surface water.

i. Coastal flooding

12.4.8. The single most significant source of flood risk to the main development site is from the sea. Wave-overtopping of the main platform sea defences and tidal inundation around the western edge of the main platform, via breaching at various points along the coastline, have been identified as potential flood pathways. Numerical models will help assess coastal flood risk and extensive data sets have been collected in order to construct these models and provide the input parameters into them.

Data

12.4.9. Data sets have been used to predict extreme sea-levels. Tide-gauge data from Lowestoft (1964-present) and Sizewell (2009-2012) have both been used. Data captured during the December 2013 tidal surge was used to update extreme sea level predictions, as was data that pre-dated (and therefore effectively extends) the tide-gauge record at Lowestoft. A range of statistical methods have been used to estimate the required return periods. These have been presented to, and agreed by, the key statutory stakeholders.

12.4.10. Climate change is likely to increase coastal flood risk over the lifetime of the Project through rising sea levels, changes in surge tide levels and changes to the nearshore wave regime. The FRA assesses potential climate change impacts using work carried out by the UK Climate Impacts Programme (UKCIP), other relevant guidance and studies commissioned by EDF Energy. EDF Energy has consulted with the Environment Agency and ONR with respect to the climate change allowances to be used for the FRA. The climate allowances cover the lifetime of the site and include scenarios for reasonably foreseeable climate change effects, as well as more extreme cases up to what are termed 'credible maximum scenarios'. This allows EDF Energy to take a managed adaptive approach to the design of the sea defences. Here, the initial design would provide immediate protection against a reasonably foreseeable sea-level rise, as well as the ability to raise the crest height as and when deemed necessary. Implicit within a managed adaptive approach is a long-term monitoring programme.

12.4.11. Coastal geomorphological change also has the potential to increase flood risk and the FRA has drawn upon parallel work undertaken by CEFAS (the Centre for Environment, Fisheries and Aquaculture Science, a specialist

advisor in relation to marine science matters) on coastal processes. Coastal erosion and tidal breaching are being considered, as well as any potential future change in the morphology of the Sizewell-Dunwich offshore banks.

Modelling

12.4.12. In order to assess coastal flooding it is necessary to establish nearshore wave and tidal conditions. Typically waves dissipate energy as they travel from offshore towards the coastline. A numerical offshore-wave model has been developed in order to simulate this wave dissipation in the seas immediately around Sizewell. Met Office offshore-wave data was used as input data for the model, whilst wave data gathered inshore of the Sizewell-Dunwich banks was used to calibrate and validate the model. The set-up and calibration of this model has been shared with the statutory stakeholders. Their feedback has been incorporated into the ongoing assessment work.

12.4.13. The offshore model has provided a set of nearshore wave heights and concurrent seawater levels, including scenarios accounting for climate change and geomorphological change. These results are being taken forward into a wave-overtopping assessment and a numerical model is currently being used to assess the risk to the site.

12.4.14. Numerical modelling is also being carried out to assess any potential risks to and from the site caused by tidal breaching. Modelling has already informed the selection of an appropriate and safe platform height level for the site (+7.3m Above Ordnance Datum (AOD)) and informed a comparative assessment of the options for crossing the SSSI (refer to **Section 7 Main Development Site**).

12.4.15. With all modelling work allowances must be made for uncertainty and therefore sensitivity tests will be included in the assessment. A number of conservative assumptions have been adopted and these will be set out in the FRA.

ii. Fluvial flooding

12.4.16. The Sizewell C power station site development would encroach upon a natural floodplain. The FRA is assessing whether this would result in any demonstrable increase in flood risk in the surrounding local area. If an increased flood risk is found there may be a requirement to find compensatory flood storage and/or to provide alternative mitigation. If any storage was identified as necessary this would be identified and consulted upon.

12.4.17. In order to assess changes in fluvial flood risk, a numerical model is being developed to represent the

Sizewell Belts, Sizewell Marshes and Minsmere River. This model is an updated version of an existing Environment Agency model, however extensive topographic and river channel survey work has been undertaken to enhance that model. In parallel to the model build, a detailed hydrological analysis is being undertaken to generate the inputs into the model, including allowances for climate change.

12.4.18. Key features of the Sizewell C development will be represented in the model to assess the impact on flood risk that these features and the overall development may have. The model outputs will include flood water levels, flood extent, flow velocities and flood hazard ratings for a range of different flood return periods and scenarios. The results of the modelling will be compared against the baseline conditions to establish whether a change in flood risk occurs as a result of the development.

iii. Surface water flooding

12.4.19. Environment Agency maps show that the existing surface water flood risk in the areas proposed for the Project is generally low. However, the FRA will need to demonstrate that there is no increase in flood risk off-site through changes in surface water run-off volumes.

12.4.20. An initial drainage strategy has been produced for each of the proposed developments, as described in the site specific sections of this document (**Sections 7–11**). In summary, for the main development site, Sustainable Urban Drainage Systems (SUDS) would be used during construction, where possible, to infiltrate rainfall where it falls, together with an engineered drainage solution to capture and route rainwater to water management zones. Once within the water management zones, water would either be infiltrated to ground or discharged to watercourse at greenfield run-off rates. During operation there would be an engineered drainage system to route rainfall out to sea via the cooling water infrastructure. For the off-site associated developments, a combination of engineered drainage solutions and SUDS would be used to control surface water to greenfield run-off rates.

d) Next steps

12.4.21. Results of the modelling work and any proposed mitigation will be presented and discussed with relevant statutory stakeholders. It is intended that EDF Energy will present and consult on its findings (including the outputs of the modelling and any mitigation proposals) prior to submitting an application for development consent.

12.5. Water Framework Directive

a) Introduction

12.5.1. Directive 2000/60/EC of the European Parliament and of the Council, referred to as the Water Framework Directive (WFD) (2000) (Ref. 12.7), was transposed into law in England and Wales by the Water Environment (Water Framework Directive) (England and Wales) Regulations 2003 (Ref. 12.8). Two daughter directives (Ref. 12.9 and 12.10), aimed at protecting groundwater, and at reducing the pollution of surface water (rivers, lakes, estuaries and coastal waters) by pollutants on a list of priority substances, have also been adopted at the European level.

12.5.2. The requirements of the WFD need to be taken into account in the planning of all new activities that may impact on any aspect of the water environment. To meet the requirements of the WFD, the competent authority (the Environment Agency) has set environmental objectives for each water body. A default objective for all water bodies is to prevent deterioration and to ensure no change in either the 'Ecological Status' (for natural water bodies) or the 'Ecological Potential' (for heavily modified or artificial water bodies). A WFD compliance assessment for the proposed development will be prepared, in consultation with the Environment Agency, to meet the requirements of the WFD.

b) Process

12.5.3. A strategy has been developed which sets out the approach to undertaking a project-level WFD compliance assessment. This involves the following four stages.

i. Stage 1: Collation of baseline information to inform the assessment

12.5.4. The collation of available baseline data, including information on the Project, the baseline environment, and the water bodies which potentially could be impacted.

ii. Stage 2: Scoping

12.5.5. The identification of whether there is potential for deterioration in water body status or failure to comply with WFD objectives in any of the water bodies identified in Stage 1. If effects are predicted, a detailed compliance assessment is required, as described in the following section.

iii. Stage 3: Detailed compliance assessment

12.5.6. Assessment of whether the activities and/or components of the Project could cause deterioration,

and whether this deterioration would have a significant non-temporary effect on the status of one or more WFD quality elements at water body level. The test determines whether the activity is likely to affect a quality element to an extent that would lower its existing status, or prevent the status objectives being achieved in another water body. If it is established that an activity and/or component of the Project is likely to affect water status at water body level, or that an opportunity may exist to contribute to improving status at a water body level, potential measures to avoid the affect, or achieve improvement, would be investigated.

iv. Stage 4: Summary of mitigation, improvements and monitoring

12.5.7. A summary strategy would set out the preceding stages, including an overview of the results of the assessment and whether proposed activities have been screened out, assessed in detail, or mitigated against. Details of any identified improvements and any monitoring required would also be described.

c) Key considerations

12.5.8. Stage 1 has been completed and work continues in respect of Stage 2. The work completed to date has identified that the following water bodies have the potential to be impacted by either construction and/or operational activities:

- Leiston Beck (GB105035046271) (river): Activities associated with initial site preparation, earthworks for platform development, the groundwater cut-off wall and the permanent SSSI crossing have the potential to impact upon the status of this water body. In particular, these activities could affect the hydromorphological, physico-chemical and biological quality elements.
- Suffolk (GB650503520002) (coastal): Activities associated with the marine structures and beach landing facility, discharge of commissioning water, discharge of foul water, intake of cooling water, and the discharge of trade effluent have the potential to impact upon the status of this water body. In particular, these activities could affect the physico-chemical and biological quality elements.
- Walberswick Marshes (GB610050076000) (coastal lagoon): Activities associated with the marine structures and beach landing facility, discharge of commissioning water, discharge of foul water, and the discharge of trade effluent have the potential to impact upon the status of this water body. In particular, these activities could affect the physico-chemical and biological quality elements.

- Alde and Ore (GB520503503800) (transitional): Activities associated with the marine structures and beach landing facility, discharge of commissioning water, discharge of foul water, and the intake of cooling water have the potential to impact upon the status of this water body. In particular, these activities could affect the biological quality elements.
- Blyth (S) (GB510503503700) (transitional): Activities associated with the marine structures and beach landing facility, discharge of commissioning water, discharge of foul water, and the intake of cooling water have the potential to impact upon the status of this water body. In particular, these activities could affect the biological quality elements.
- Waveney and East Suffolk Chalk and Crag (GB40501G400600) (groundwater): Activities associated with initial site preparation, earthworks for platform development, the groundwater cut-off wall, the permanent SSSI crossing, and surface water drainage have the potential to impact upon the status of this water body. These activities could affect both the quantity and quality of groundwater.
- Alde (GB105035046060) (river): Activities associated with the Farnham Bypass have the potential to affect the hydromorphological, physico-chemical and biological quality elements of the water body.
- Alde and Ore (downstream of confluence) (GB105035045950) (river): Activities associated with Farnham Bypass have the potential to affect the hydromorphological, physico-chemical and biological quality elements of the water body.

d) Next steps

12.5.9. EDF Energy is in the process of finalising the Stage 2 assessment and undertaking the Stage 3 assessment in accordance with the methodology presented to the Environment Agency. Thereafter, mitigation and monitoring measures would be identified and discussed with the Environment Agency. It is intended that EDF Energy will present its findings (including any mitigation proposals) in support of a further stage of consultation, prior to submitting an application for development consent.

12.6. Conventional waste strategy

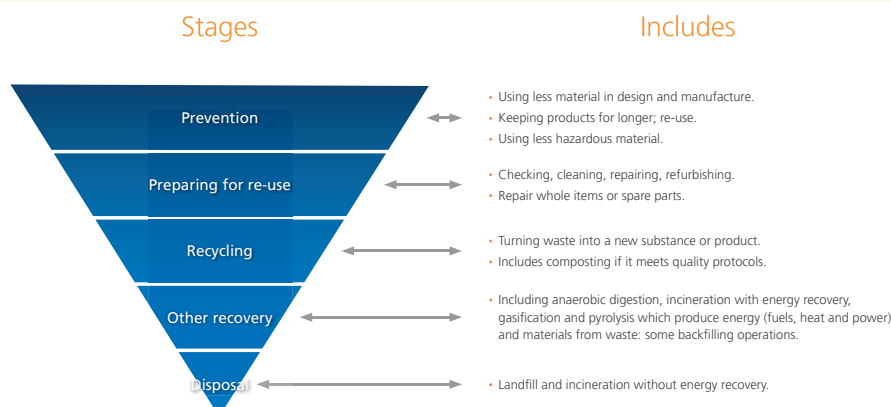
a) Introduction

12.6.1. The conventional waste strategy for the Project will consider the management of non-radioactive waste streams. The strategy relating to radioactive waste streams are discussed in **Section 7 Main Development Site**.

12.6.2. EDF Energy aims to achieve best practice in waste management and performance. Accordingly, the following objectives have been developed for the management of conventional waste (refer to **Figure 12.2**) during both the construction and operational phases:

- to prevent and reduce the volume of waste produced through the application of the waste hierarchy in both design and construction;
- to maximise re-use and recycling within the Project; and
- to minimise the impact upon the existing waste management infrastructure.

Figure 12.2 Waste hierarchy



12.6.3. In conjunction with the waste hierarchy, the proximity principle will be considered in the development of the waste strategy. The proximity principle encourages the management of waste close to its place of generation, thus reducing the effects of transporting waste over long distances and promoting management of waste within its region of origin.

12.6.4. EDF Energy will undertake an assessment to determine the potential effect of conventional waste associated with the construction and operation of the Project. The waste assessment will aim to:

- identify the main waste streams and predicted volumes likely to arise from the construction and operation of the Sizewell C, and the construction, operational and post-operational phases of the off-site associated developments, as far as reasonably practical;
- identify any potential impacts upon existing waste infrastructure; and
- identify measures that would be implemented to prevent and minimise waste generation.

12.6.5. Key international, national and local waste policies, legislation and guidance will also be considered when developing the assessment and strategy for managing conventional waste.

b) Construction waste

12.6.6. Excavated materials created to facilitate construction would be retained on-site for re-use as backfill and landscaping. This would significantly minimise the amount of material classified as waste during the site establishment and main site earthworks phases of construction.

12.6.7. Construction waste can be generated through off-cuts from fitting materials and from spent materials. The approach to the waste strategy will be to reduce the potential to create waste.

12.6.8. Any domestic waste generated (for example by the canteen and campus), or any generated by the construction, operation or post-operational phases of the offsite associated developments, would also be managed having regard to the waste hierarchy.

c) Operational waste

12.6.9. The Sizewell C power station is proposed to be in operation for 60 years. Conventional waste produced would originate from welfare facilities, offices and activities including the maintenance of plant and equipment. Waste generated would be dealt with having regard to the waste hierarchy.

d) Decommissioning

12.6.10. The decommissioning of Sizewell C power station would be subject to a separate EIA prior to any decommissioning activities commencing. Therefore, the conventional waste strategy for the Project will not consider in detail any wastes arising from the decommissioning of the power station.

e) Next steps

12.6.11. The potential effect of waste and its management will be assessed. A review of both waste legislation and relevant planning policies will be carried out to identify appropriate waste management objectives and targets for the Project. Analysis of baseline conditions at the site, local (i.e. district), regional (i.e. Suffolk) and national (i.e. UK) levels will be conducted. The baseline assessment will include consideration of the following:

- assessment of local authority collected waste (i.e. municipal waste), commercial and industrial waste, and construction and demolition waste;
- current levels of waste generation at the site, local, regional and national levels;
- current trends in waste management practice at the site, local, regional and national levels; and
- a review of available waste management facilities likely to be affected by the Project.

12.6.12. For the construction phase, estimates of construction waste material quantities would be identified and compared to baseline levels. Operational waste arisings and associated storage requirements would be calculated in accordance with relevant guidance, standards and consultation with relevant parties (i.e. the Suffolk Waste Partnership, Joint Municipal Waste Management Strategy (Ref. 12.11) and British Standards BS5906:2005 (Ref. 12.12)). With this information, the impact of the Project would be determined. Should any potential significant effects be predicted mitigation measures would be identified in accordance with the waste hierarchy.

12.7. Sustainability

a) Introduction

12.7.1. EDF Energy’s ambition for Sizewell C is set out in **Section 2 Vision and Objectives**. It sends a clear message that sustainable development – the optimisation of social, economic and environmental outcomes – is at the heart of the Project. Given the multifaceted nature of ‘sustainability’, the principle resonates throughout the Vision and objectives both directly and indirectly. For example, the Vision calls for an approach that is consistent with the ‘highest standards of safety, reliability and sustainability’, whilst the objectives provide a further layer of detail relating to design and environment, and social and economic effects.

12.7.2. The sustainability of nuclear new build is founded on its low-carbon attributes and its contribution to a safe and secure electricity supply. A new nuclear power station would also create tangible socio-economic benefits, for example through skills creation and employment opportunities. The broader sustainability benefits would be realised through the appropriate engineering, design, build and management of the Project, having regard to the environment within which the design would function.

12.7.3. As a responsible developer and operator, EDF Energy wishes to increase the sustainability of the Project where possible. EDF Energy’s approach to sustainability has been informed by its experiences delivering and operating infrastructure assets within the UK, in particular from its recent experiences on the Hinkley Point C (HPC) Project in Somerset.

b) Next steps

12.7.4. A Sustainability Statement will be prepared and consulted upon at a further stage of consultation, prior to submission of an application for development consent. The Statement will review the proposals in respect of their ability to deliver social, economic and environmental benefits, whilst taking account of any adverse effects on the sustainability objectives. In order to undertake this review methodically, sustainability criteria have been defined (as detailed in **Table 12.1**) against which the Project will be assessed.

i. Sustainability criteria

12.7.5. The sustainability criteria have been developed to reflect a broad range of topics, informed by three principal drivers:

- national drivers, derived from the Government’s Appraisal of Sustainability (AoS) (Ref. 3.2) for the National Policy Statement for Nuclear Power Generation (NPS EN-6) (Ref.1.2);
- local drivers, identified from the Sustainability Appraisal objectives applied to the Suffolk Coastal District Local Plan (Ref. 3.6); and
- corporate drivers from EDF Energy’s own ambitions (as described in **Section 2 Vision and Objectives**).

12.7.6. An exercise has been carried out to identify the national, local and corporate drivers to define criteria for the appraisal (**Table 12.1**). For example, one of the sustainability criteria is ‘to minimise greenhouse gas emissions’. This wording directly reflects the objective in the AoS of the NPS EN-6, and takes account of the objective of the Suffolk Coastal District Local Plan ‘to reduce emissions of greenhouse gases from energy consumption’ and EDF Energy’s ambition to power society without costing the Earth (**Section 2 Vision and Objectives**).

12.7.7. Appraising sustainability is a discretionary activity for projects and there is no specific guidance to follow. The Sustainability Statement will consider how the Project performs against the sustainability criteria, having regard to the following:

- Project proposals (both Sizewell C and the off-site associated developments), including the masterplans, design briefs and other technical assessments;
- guide questions will be used to assess performance of the proposals against the criteria and a simple scoring matrix will be applied to help reduce the subjectivity of the appraisal;
- the Project’s likely performance over time;
- the creation of a balance of measures to deliver the most appropriate and effective sustainability outcomes; and
- the outcome of the assessment will inform any mitigation proposals.

Table 12.1 Sustainability criteria

Topic	Sustainability Criteria	Drivers - Policy Reference		
		National	Local	Corporate
Biodiversity	To minimise impacts on biodiversity, particularly international and nationally important sites, habitats and species, and enhance these where possible	AoS (1, 3)	SP14, DM27 SA Objective 17	
	To avoid adverse impacts on valuable ecological networks and ecosystem functionality	AoS (2)		
	To maximise opportunities for restoration, enhancement and connection of natural habitats	Fields 2 and PRoW Hill).	DM27	
Climate change adaptation	To adapt to a changing climate, including maintaining an agreed standard of flood defence and coastal protection for the site		SP1(a)	
Climate change mitigation	To minimise greenhouse gas emissions	AoS (13)	SP12 SA Objectives 15	
Coastal processes	To secure a balance between the longer term impacts of the coastal environment on the site and the impacts of the site on the environment		SP12	
	To minimise impacts on coastal processes beyond the bounds of the shores fronting the site, through appropriate engineering design and coastal management		SP12	
Communities	To minimise impacts on tourism			Project Vision
	To minimise impacts on property and land values, and limit potential for planning blight	AoS (10)		
	To minimise disruption of basic services and community infrastructure, including emergency services	AoS (9)	SP1 (d) SA Objectives 5	
	To encourage the development of sustainable communities	AoS (5)	SP (l) SA Objectives 8	
Cultural heritage and landscape	To minimise impacts on internationally and nationally important features of the historic environment	AoS (22)	SP1 (j) SA Objective 18	
	To minimise impacts on the setting and quality of built heritage, archaeology and historic landscapes	AoS (23)	SP1 (j) SA Objective 18	
	To minimise impacts on nationally important landscapes	AoS (24)		Project Vision
	To minimise impacts on landscape character, quality and tranquillity, diversity and distinctiveness	AoS (25)	SP (k) SA Objective 19	

Table 12.1 Sustainability criteria (continued)

Employment, skills and inward investment	To nurture and develop skills		SA Objective 2	
	To create employment opportunities	AoS (4)	SA Objective 6	Project Vision
	To encourage inward investment		SA Objective 23	Project Vision
Equality and engagement	To encourage equality through community participation		SA Objectives 4, 8	
Flood risk	To avoid increased flood risk (including coastal flood risk)	AoS (14)	SP12, DM28	
Human health and well-being	To minimise impacts on physical and mental health	AoS (6, 7)	SA Objective 1	
	To minimise the impact of nuisance on local communities, including from air quality, noise, vibration and lighting	AoS (12)	SA Objective 9	
	To minimise loss of access to recreational opportunities, their quality and user convenience, and to enhance these where possible	AoS (11)		
Nuclear safety	To deliver the highest standards of nuclear safety			Project Vision
Radioactive waste	To help shape the long-term solution to radioactive waste	AoS		
Resources	To promote the sustainable use of materials		SP1 (f), SP12	
	To minimise impacts on potable water supply	AoS (17)		
Soils, geology and land-use	To make most efficient use of land and minimise impacts on geological and soil resources	AoS (19)	SA Objective 11, 12	
	To avoid the use of greenfield land and to encourage the reuse of brownfield sites	AoS (20)	SP1 (e)	
	To avoid the contamination of soils and any adverse impacts on soil functions	AoS (21)		
Transport infrastructure	To minimise adverse impacts on the function and efficiency of strategic transport infrastructure and to enhance this infrastructure where feasible	AoS (8)	SP1 (d, g) SA Objective 14, 22	

Table 12.1 Sustainability criteria (continued)

	To minimise impacts on coastal and marine water quality		SP12	
Water environment	SA Objective 10		SA Objective 6	Project Vision
	To minimise impacts on surface water quality, hydrology and channel geomorphology	AoS (15, 16)		
Waste	To minimise waste and apply the principles of the waste hierarchy		SA Objective 13	
Construction	To promote the use of sustainable methods of construction, including materials, energy efficiency, water recycling, aspect etc.		SP1 (f), SP12	

13. Responding to Consultation

13.1. Introduction

13.1.1. EDF Energy is seeking views on all aspects of its strategies and proposals (including any options) presented in this document. **Sections 5–11** of this Stage 2 Consultation Document identify matters on which particular feedback is sought. EDF Energy encourages all stakeholders to respond to this Stage 2 consultation, as feedback will help to further evolve the strategies and proposals.

13.2. Finding out more

13.2.1. Copies of the consultation documents (this Stage 2 Consultation Document and the **Stage 2 Consultation Summary Document**) will be available at the exhibitions and at the Sizewell C Information Office (48–50 High Street, Leiston, IP16 4EW), which is open 09:30–17:00 Monday–Friday. The documents are also available to view during office hours in the offices of Suffolk County, Suffolk Coastal District, Waveney District and Ipswich Borough Councils and at local public libraries, and are available on the Project website (<http://sizewell.edfenergyconsultation.info>).

13.2.2. If you require this information in a different format for accessibility reasons please call (0800 197 6102) or email (sizewell@edfconsultation.info).

13.2.3. In addition to the consultation documents, other tools are available to support engagement with this consultation, including:

- **contact the team**—call the team on 0800 197 6102 during normal office hours or drop into the Sizewell C Information Office;
- **newsletters**—EDF Energy will publicise the consultation programme, including details of events and how people can respond, in its Sizewell C Newsletter;
- **local media**—EDF Energy will publicise the consultation activities in the local media;
- **public exhibitions**—EDF Energy will hold exhibitions and events.

The exhibition material will remain available for the public to view at the Sizewell C Information Office after the close of the formal consultation, as well as being available to download from the Project website;

- **presentations**—town and parish councils can request meetings and presentations during the consultation period, which EDF Energy will seek to accommodate where possible;
- **drop-in sessions**—for villages or towns which are not exhibition locations, or those communities which require greater opportunities to engage with the team, EDF Energy will seek to accommodate requests where possible. These sessions would operate like surgeries, where local people can have discussions with members of the EDF Energy team; and
- **social media**—EDF Energy has a Twitter account and followers will be updated on the latest events and news during the public consultation (@edfeszewellc).

13.3. Responding to this consultation

13.3.1. EDF Energy encourages you to respond to this Stage 2 consultation as feedback will help it to further evolve its strategies and proposals. Those wishing to respond can:

- complete a questionnaire either online (www.sizewellc.co.uk) or post a completed form to FREEPOST SZC CONSULTATION (no stamp or further address required);
- email comments to sizewell@edfconsultation.info;
- post comments to FREEPOST SZC CONSULTATION (no stamp or further address required);
- call 0800 197 6102 during normal office hours.

13.3.2. The deadline for responses to this Stage 2 consultation is **3 February 2017**.

Reference List

Reference No.	Reference
1.1	Department of Energy and Climate Change, <i>Overarching National Policy Statement for Energy (EN-1)</i> (London: The Stationery Office, 2011)
1.2	Department of Energy and Climate Change, <i>National Policy Statement for Nuclear Power Generation (EN-6)</i> (London: The Stationery Office, 2011)
1.3	EDF Energy, <i>Stage 1 Consultation Environmental Report</i> (London, 2012) Available at: < http://sizewell.edfenergyconsultation.info/wp-content/uploads/SzC-Stage-1-Environmental-Report.pdf >
1.4	Parliament of the United Kingdom, <i>The Planning Act 2008</i> (London, 2008)
1.5	Department of Communities and Local Government (DCLG), <i>Planning Act 2008: Guidance on the Pre-Application Process</i> (London, 2015)
1.6	EDF Energy, <i>Statement of Community Consultation (SoCC)</i> (2016) Available at: < sizewell.edfenergyconsultation.info >
1.7	EDF Energy, <i>Stage 1 Consultation Documents</i> (2012) Available at: < sizewell.edfenergyconsultation.info >
1.8	Parliament of the United Kingdom, <i>Nuclear Installations Act 1965</i> (London, 1965)
1.9	The European Union, <i>The Euratom Treaty 1957</i> (Rome, 1957)
1.10	Parliament of the United Kingdom, <i>The Environmental Permitting (England and Wales) Regulations 2010</i> (London, 2010)
1.11	Parliament of the United Kingdom, <i>Energy Act 2008</i> (London, 2008)
2.1	EDF Energy, <i>Our Better Energy Ambitions Report</i> (London, 2014) Available at: < www.edfenergy.com/sites/default/files/better-energy-ambitions-report-2014.pdf >
3.1	Department for Business, Enterprise and Regulatory Reform (BERR), <i>A White Paper on Nuclear Power</i> (Norwich: The Stationery Office, 2008)
3.2	Department of Energy and Climate Change, <i>Appraisal of Sustainability: Site Report for Sizewell</i> (London, 2010)
3.3	The European Commission, <i>The Habitats Directive (Directive 92/43/EEC)</i> (1992)
3.4	The Department of Energy, <i>The Sizewell B Public Inquiry: The Layfield Report</i> (London, 1987)

3.5	Department for Communities and Local Government (DCLG), <i>National Planning Policy Framework</i> (London, 2012)
3.6	Suffolk Coastal District Council (SCDC), <i>Suffolk Coastal District Local Plan: Core Strategy and Development Management Policies Development Plan Document</i> (2013)
5.1	HM Treasury, <i>National Infrastructure Plan</i> (London, 2014)
5.2	Suffolk County Council (SCC), <i>Raising the Bar 2015-2017</i> Available at: < www.suffolk.gov.uk/children-families-and-learning/raising-the-bar >
5.3	Office for National Statistics (ONS), <i>2011 Census</i> (London, 2011)
5.4	Office of National Statistics (ONS), <i>Business Register and Employment Survey (BRES)</i> (London, 2014)
5.5	Department for Work and Pensions, <i>Job-Seeker's Allowance (JSA) Claimant Count</i> (London, 2007-2016)
5.6	Office of National Statistics (ONS), <i>Annual Population Survey (APS)</i> (London, 2015/2016)
5.7	Office of National Statistics (ONS), <i>Underemployment and Overemployment in the UK</i> (London, 2014)
5.8	Office of National Statistics (ONS), <i>Sub-Regional Gross Value Added (Income Approach)</i> (London, 2014(i))
5.9	World Travel and Tourism Council, <i>Economic Impact of Tourism 2014 Results</i> (London, 2015)
5.10	HM Government, <i>Nuclear Supply Action Chain Plan</i> (London, 2012)
5.11	Union of Construction, <i>Allied Trades and Technicians, Construction Industry Joint Council: Working Rule Agreement for the Construction Industry</i> (London, 2016)
5.12	Glasson, J and Chadwick, A, <i>The Local Socio-Economic Impacts of the Sizewell B PWR Power Station Construction Project, 1987-1995</i> (Oxford Brookes University: Oxford, 1995)
6.1	European Commission, <i>European EIA Directive</i> (Brussels, 2009)
6.2	Office of National Statistics (ONS), <i>Journey-To-Work Survey</i> (London, 2001)
7.1	Coastal Management Team at Suffolk Coastal and Waveney District Councils, <i>Minsmere and Sizewell Shoreline Management Plan</i> (Suffolk) Available at: < www.suffolksmp2.co.uk >
7.2	Department of the Environment, Transport and the Regions, <i>Nuclear Reactors (Environmental Impact Assessment for Decommissioning) Regulations 1999</i> (UK: The Stationary Office Limited, 1999)
7.3	Office for Nuclear Regulation, <i>UK Regulators Confirm Acceptance of New Nuclear Reactor Design</i> (2012) Available at: < http://news.onr.org.uk/2012/12/uk-regulators-confirm-acceptance-of-new-nuclear-reactor-design/ >

9.1	Suffolk County Council, <i>Suffolk Landscape Character Assessment</i> (Ipswich, 2008)
10.1	Suffolk Coastal District Council, <i>Suffolk Coastal Local Plan Incorporating 1st and 2nd Alternations</i> (Woodbridge, 2006)
11.1	Department for Communities and Local Government (DCLG), <i>Planning Act 2008: Guidance on Associated Development Applications for Major Infrastructure Projects</i> (London, 2013)
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11.3	Aecom, <i>A12 Four Villages Study</i> (London, 2013)
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12.2	EDF Energy, <i>Sizewell C EIA Scoping Report</i> (London, 2014)
12.3	The Planning Inspectorate, <i>Scoping Opinion: Proposed Sizewell C Nuclear Development</i> (Bristol, 2014)
12.4	EDF Energy, <i>Sizewell C Evidence Plan</i> (London, 2014)
12.5	Office for Nuclear Regulation & Environment Agency, <i>Joint Advice Note Nuclear New Build - Principles for Flood and Coastal Risk Management</i> (London, 2012)
12.6	Department for Communities and Local Government (DCLG), <i>Technical Guidance to the National Planning Policy Framework</i> (London, 2012)
12.7	The European Commission, <i>Water Framework Directive (WFD)</i> (Brussels, 2000)
12.8	Parliament of the United Kingdom, <i>Water Environment (Water Framework Directive) (England and Wales) Regulations 2003</i> (London, 2003)
12.9	The European Commission, <i>Groundwater Protection in Europe: The New Groundwater Directive - Consolidating the EU Regulatory Framework</i> (Brussels, 2008)
12.10	The European Commission, <i>Directive on Environmental Quality Standards (Directive 2008/105/EC)</i> (Brussels, 2008)
12.11	Recycle for Suffolk, <i>Joint Municipal Waste Management Strategy for Suffolk</i> (Ipswich, 2013)
12.12	British Standards Institutions (BSI Group), <i>Waste Management in Buildings - Code of Practice</i> (London, 2005).

Abbreviation and Acronym List

Abbreviation/ Acronym	Meaning
AIL	Abnormal Indivisible Load
ALARP	As Low As Reasonably Possible
ALC	Agricultural Land Classification
ANPR	Automatic Number Plate Recognition
AOD	Above Ordnance Datum
AONB	Area of Outstanding Natural Beauty
AoS	Appraisal of Sustainability
APS	Annual Population Survey
AQMA	Air Quality Management Area
ATC	Automatic Traffic Counts
BEIS	Department for Business, Energy and Industrial Strategy
BGS	Business Growth Service
BLF	Beach Landing Facility
BREEAM	Building Research Establishment Environment Assessment Method
BRES	Business Register and Employment Survey
CDM	Construction Design and Management
CEFAS	Centre for Environment Fisheries and Aquaculture Science
CEIAG	Careers Education, Information, Advice and Guidance
CHP	Combined Heat and Power
CITB	Construction Industry Training Board
CSN	Construction Skills Network
CTMP	Construction Traffic Management Plan
CWS	County Wildlife Site
DAC	Design Acceptance Confirmation
DBA	Desk-based Assessment
DCLG	Department for Communities and Local Government
DCO	Development Consent Order

Abbreviation/ Acronym	Meaning
DECC	Department for Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DMO	Destination Management Organisation
DMRB	Design Manual for Roads and Bridges
DMS	Delivery Management System
DWP	Department for Work and Pensions
EDF Energy	Électricité de France Energy
EEEGR	East of England Energy Group
EERM	East of England Regional Model
EIA	Environmental Impact Assessment
EcIA	Ecological Impact Assessment
EPR™	A type of pressurised water reactor. The design has two definitions: European and Evolutionary Pressurised (water) Reactor.
ES	Environmental Statement
FDP	Funded Decommissioning Programme
FRA	Flood Risk Assessment
GDA	Generic Design Assessment
GP	General Practitioner
GRIP	Governance for Railway Investment Projects
GVA	Gross Value Added
GW	Gigawatt
HGV	Heavy Goods Vehicle
HIA	Health Impact Assessment
HPC	Hinkley Point C
HRA	Habitats Regulations Assessment
ILO	International Labour Organisation
ILW	Intermediate Level Waste
IPC	Infrastructure Planning Commission
IROPI	Imperative Reason of Overriding Public Interest

Abbreviation/ Acronym	Meaning
JSA	Jobseekers Allowance
JTW	Journey-To-Work
KM / km	Kilometre
kV	Kilovolt
LEP	Local Enterprise Partnership
LiDAR	Light Detection And Ranging
LLW	Low Level Waste
LNR	Local Nature Reserve
LSE	Likely Significant Effect
LVIA	Landscape and Visual Impact Assessment
M / m	Metre
MCC	Manual Classified Counts
MMO	Marine Management Organisation
MPH	Miles Per Hour
MW	Megawatts
NALEP	New Anglia Local Enterprise Partnership
NAMRC	Nuclear Advanced Manufacturing Research Centre
NATA	New Approach to Appraisal
NDA	Nuclear Decommissioning Authority
NEETS	Young People Not in Education, Employment or Training
NGL	Nuclear Generation Limited
NNB	Nuclear New Build
NNR	National Nature Reserve
NO	Nitric Oxide
NO2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NPS EN-1	Overarching National Policy Statement for Energy
NPS EN-6	National Policy Statement for Nuclear Power Generation

Abbreviation/ Acronym	Meaning
NSIP	Nationally Significant Infrastructure Project
NSL	Nuclear Site License
ONR	Office for Nuclear Regulation
ONS	Office for National Statistics
ORR	Office for Rail Regulation
PM (10 and 2.5)	Particulates
PRoW	Public Right of Way
PRS	Private Rented Sector
PWR	Pressurised Water Reactor
RPM / rpm	Revolutions per Minute
RSPB	Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SCC	Suffolk County Council
SCCAS	Suffolk County Council Archaeological Service
SCDC	Suffolk County District Council
SLA	Special Landscape Area
SME	Small and Medium-sized Enterprise
SMP	Shoreline Management Plan
SO2	Sulphur Dioxide
SoCC	Statement of Community Consultation
SoDA	Statement of Design Acceptability
SPA	Special Protection Area
SPZ	Source Protection Zone
SSA	Strategic Siting Assessment
SSSI	Site of Special Scientific Interest
STB	Short Term Bridge
STEM	Science, Technology, Engineering and Mathematics
SUDS	Sustainable Urban Drainage Systems
SZC	Sizewell C

Abbreviation/ Acronym	Meaning
TIMP	Traffic Incident Management Plan
TRADS	Traffic Flow Data System
UK	United Kingdom
UKCIP	United Kingdom Climate Impacts Programme
WDC	Waveney District Council
WebTAG	Transport Analysis Guidance
WFD	Water Framework Directive
WMZ	Water Management Zone

List of Defined Terms

Commonly used terms	Description (where relevant)
Abnormal Indivisible Loads (AILs)	Large loads to be delivered to the site which by their nature cannot be broken into smaller multiple deliveries. Wherever possible, AILs are to be brought in by sea, with any transport to the site by road delivered on a low loader with a police escort.
Accommodation Campus	Purpose-built accommodation campus close to the construction site to house Sizewell C employees..
Accommodation Strategy	Strategy developed by EDF Energy in partnership with local authorities to ensure an organised and robust approach to minimising effects from its workforce on community cohesion, accommodation capacity and a range of socio-economic concerns.
Agricultural Land Classification (ALC)	A classification of agricultural land in England and Wales according to its quality and agricultural versatility. The classifications range from Grade 1 (the best and most versatile), through Grades 2, 3a, 3b, 4, down to Grade 5 (the least versatile).
Appraisals	The further assessment of environmental issues or topics. Appraisals will provide more detail about the environmental conditions at the site, assess how the delivery of Sizewell C could impact upon on these conditions, and consider what measures could be used to mitigate any negative environmental impacts.
Area of Outstanding Natural Beauty (AONB)	AONBs were formally designated under the National Parks and Access to the Countryside Act 1949 to protect areas of the countryside of high scenic quality that cannot be selected for National Park status due to their lack of opportunities for outdoor recreation (an essential objective of National Parks). Further information on AONBs can be found at www.aonb.org.uk
Associated Development	Development which is associated with a Nationally Significant Infrastructure Project (NSIP), as defined in the Planning Act 2008. It should be subordinate to and necessary for the construction and/or the effective operation of the NSIP that is subject of the application.
Beach Landing Facility	The permanent facility to allow AILs to be brought to Sizewell C by sea during operation or construction
Bilateral agreement	A reciprocal arrangement between two parties where each promises to perform an act in exchange for the other party's act.
CAT 777	The CAT 777 is a 100 ton dump truck manufactured by Caterpillar Inc.
Code of Conduct	EDF Energy will develop a Code of Conduct in partnership with contractors, imposed through all main contracts, to ensure that prompt and effective action is taken to address any cases of unacceptable behaviour
Community Impact Report	A report drawing on evidence from topic areas including noise, air quality, visual and transport in order to identify the specific combined environmental effects on residential amenity in local areas and a plan for their monitoring and mitigation.
Construction phase	The period during which the contractor must complete construction, subject to the conditions of the contract.
Contractors' compound	The area in which on site contractors will manage and oversee the construction of the plant.
Cooling water infrastructure	Infrastructure located offshore that will provide a cooling mechanism for the plant via the intake and outflow of sea water.
County Wildlife Site (CWS)	Areas identified and selected for their local nature conservation value.
Delivery Management System	Measures put in place to control the flow of HGV movements to and from the main development site.

Commonly used terms	Description (where relevant)
Development Consent Order (DCO)	A DCO is the form in which the Secretary of State grants consent for development applied for under the Planning Act 2008. A DCO removes the need to obtain a range of other separate consents, such as planning permission and listed building consent.
Economically Inactive	People who are not in employment or unemployed.
EDF Energy	The UK subsidiary of EDF Group, which is one of the world's largest energy companies and safely operates the world's largest fleet of nuclear power plants.
EDF Energy Estate	Land owned by EDF Energy in the Sizewell area.
EDF Group	EDF Group is one of the world's largest energy companies and safely operates the world's largest fleet of nuclear power plants.
Environmental Impact Assessment (EIA)	A process for predicting the effects of a proposed development on the environment that informs decision-makers in relation to planning permissions, consents, licences and other statutory approvals, as required by European Union Directive 2011/92/EU (which codified Directive 85/337/EEC) (the EIA Directive).
Environmental Scoping Report	A scoping report is usually produced at an early stage in the EIA process and should contain sufficient information to support a developer's request to a regulator for a scoping opinion.
Environmental Statement (ES)	The document reporting the process and outcomes of the EIA.
Gravity Model	The Gravity Model calculates where both home-based and non-home-based workers would be likely to live across the region. It predicts the location of the permanent homes of home-based workers and temporary accommodation of non-home based workers.
Gross Value Added (GVA)	GVA measures the value of goods and services produced in a geographical area, industry or economic sector. It is a measure of economic productivity, calculated by valuing the amount of goods and services that have been produced, less the cost of all inputs and raw materials that are directly attributable to that production.
Groundwater	Water occurring below ground in natural formations (typically rocks, gravels and sands).
Habitat Regulations Assessment (HRA)	An assessment to determine compliance of a plan or project with the Habitats Directive (94/43/EEC) and Conservation of Habitats and Species Regulations 2010 (as amended).
Habitats Directive	The Habitats Directive (more formally known as Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora) is a European Union directive adopted in 1992 as a response to the Berne Convention. It is one of the EU's two directives in relation to wildlife and nature conservation (the other being the Birds Directive). It aims to protect over 200 habitats and approximately 1,000 animal and plant species listed in the Directive's Annexes. Annex I covers habitats, Annex II covers species requiring designation of special areas of conservation, Annex III covers the criteria for selecting sites eligible for identification as sites of community importance and designation as special areas of conservation, Annex IV species in need of strict protection and Annex V covers species whose taking from the wild can be restricted by European law. These are species and habitats which are considered to be of European interest, following criteria given in the Directive. The Directive led to the setting up of a network of Special Areas of Conservation which, together with the existing Special Protection Areas, form a network of protected sites across the European Union called Natura 2000.
Highways Agency	The Government agency responsible for Strategic Road Network (SRN).

Commonly used terms	Description (where relevant)
Historic Parks and Gardens	Parks and gardens identified by English Heritage as being of particular interest and quality by reasons of their historic layout, features and architectural ornaments. Like listed buildings they are graded I, II* and II.
Landscape Character	A distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse.
Landscaping	A general term used for the means by which, where appropriate, development is made to fit visually into its surroundings by control of siting and layout and use of trees, shrubs or grass (soft landscaping) and/or fences, walls or paving (hard landscaping).
Listed Buildings	Buildings and structures which have been identified as being of special architectural or historic interest and whose protection and maintenance are the subject of special legislation. Their curtilage and setting is also protected. Listed building consent is required before any works can be carried out on a listed building.
Main Power Station Platform	The area containing the principal power station buildings including the two UK EPR™ and key ancillary buildings and plant. At Sizewell C, this comprises the area adjacent to Sizewell B power station.
Mitigation	Measures recommended through the EIA process and applied through the regulatory approvals process to avoid, reduce or offset significant adverse effects on the environment.
National Grid	The organisation that runs and operates the high voltage electric power transmission network in Great Britain, connecting power stations and major sub-stations and ensuring that electricity generated anywhere in Great Britain can be used to satisfy demand elsewhere.
National Infrastructure Plan	The National Infrastructure Plan sets out the challenges facing UK infrastructure and the government's strategy for meeting the infrastructure needs of the UK economy. The plan contains major commitments for investment in important infrastructure projects and explains how new private sector investment is being attracted.
National Nature Reserve (NNR)	National Nature Reserves are designated under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended) as land primarily for nature conservation. Such a purpose covers the study, research and preservation of flora, fauna and sites with special geological or physiographical features. The NNRs were established to protect the most important areas of wildlife habitat and geological formations in Britain and as places for scientific research. All NNRs are nationally important and are best examples of a particular habitat/ecosystem.
National Policy Statement (NPS)	Policy statements that set out the Government's objectives for the development of nationally significant infrastructure. They undergo a democratic process of public consultation and parliamentary scrutiny before being designated (i.e. published). They provide the framework within which the Planning Inspectorate makes its recommendation to the Secretary of State.
NNB Generation Company Limited (NNB)	NNB Generation Company Limited, part of EDF Energy, is the Company that will be the licensee for the development at Sizewell C. NNB stands for Nuclear New Build.
Office for Nuclear Regulation (ONR)	The department responsible for regulating nuclear industry. It is an independent statutory corporation.
Operational Phase	The period during which Sizewell C nuclear power station is operational.

Commonly used terms	Description (where relevant)
Ordnance Datum (Newlyn) (OD)	The UK reference point for altitude or height. 'Above Ordnance Datum' (AOD) is a term often used to measure altitude by reference to the sea level at Newlyn, Cornwall.
Park and ride	Associated development aiming to alleviate traffic going to and from the main development site.
Piling	The installation of bored and driven piles and the effecting of ground treatments by vibratory dynamic and other methods of ground stabilisation.
Pressurised Water Reactor (PWR)	A type of nuclear power reactor.
Proposals	The works that EDF Energy is proposing to undertake as part of the Sizewell C Project. This includes all the components of the nuclear power station itself, as well as 'associated developed', which are the works required to facilitate development of the power station.
Public Access	Permitted use of land by members of the public. Access can be allowed by a variety of means including: public rights of way (i.e. footpath, bridleway, byway); Acts of Parliament; the granting of conditional access by landowners (i.e. National Trust); custom or tradition.
Public Rights of Way (PRoW)	These are designated 'highways' under the Countryside and Rights of Way [CRoW] Act 2000, which the public can use at anytime.
Ramsar Site	The Ramsar Convention on Wetlands of International Importance, especially as Waterfowl Habitat (1971) imposes a requirement on the UK Government to promote the wise use of wetlands and to protect wetlands of international importance. This includes the designation of certain areas as Ramsar Sites, where their importance for nature conservation (especially with respect to waterfowl) and environmental sustainability meet certain criteria. Further information can be found on the RAMSAR convention on wetlands website: www.ramsar.org
Scheduled Monument	A feature of national, historical or archaeological importance, either above or below the ground, which is included in the schedule of monuments as identified by the Secretary of State. Not all nationally important archaeological remains are scheduled and sites of lesser importance may still merit protection.
Shoreline Management Plan (SMP)	A non-statutory plan produced to provide sustainable coastal defence policies (to prevent erosion by the sea and flooding of low-lying coastal land) and to set objectives for the future management of the shoreline. SMPs are prepared by the Environment Agency and maritime local authorities, acting individually or as part of coastal defence groups.
Site of Special Scientific Interest (SSSI)	An area designated as being of special interest by reason of any of its flora, fauna or geological or physiographical features. SSSIs are designated by Natural England under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000.
Sizewell C Main Development Site	The site of the proposed nuclear power station development (the main development) and construction areas.
Sizewell Drain	The Sizewell Drain rises from the south of Sizewell B Power Station and joins with the Leiston Drain at the north of Sizewell B Power Station before flowing north to the coast at Minsmere Sluice, where they discharge to the sea.
Sizewell Halt	The nearest railhead to Sizewell nuclear power station, about one mile inland.
Source Protection Zones (SPZ)	Defined by the Environment Agency, these zones show the risk of contamination from any activities that might cause pollution in the area.

Commonly used terms	contamination from any activities that might cause pollution in the area."
Special Area of Conservation (SAC)	A site designated via the European Directive on the Conservation of Natural Habitats of Wild Fauna and Flora (92/43/EEC) (i.e. the Habitats Directive) to protect rare and endangered habitats and species at a European level. Together with SPAs they form a network of European sites known as Natura 2000.
Special Protection Area (SPA)	Designated under Article 4 of the European Directive on the Conservation of Wild Birds (2009/147/EC) (i.e. the Birds Directive) to protect the habitats of threatened and migratory birds.
Suffolk Coastal District Council	Local planning authority for the district including Sizewell and the associated development site options.
Suffolk County Council	County planning authority for the land area including Sizewell and the associated development site options.
Suffolk Heritage Coast	Areas of coast that are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors.
Supply Chain Portal	EDF Energy has partnered with the Suffolk Chamber of Commerce to identify and support local businesses that want to become part of the supply chain. The Chamber is the first point of contact for business and agencies wishing to engage in the construction of this proposed nuclear new build project.
Surface Water	Terrestrial water bodies that are found above ground level, such as lakes, rivers and ditches, and including fresh and inland brackish water.
Sustainable Drainage Systems (SUDS)	A sequence of management practices and control structures designed to drain surface water in a more sustainable fashion than some conventional techniques (may also be referred to as sustainable drainage techniques).
Tier 1 Contactors	Those companies at the top of the supply chain, who often manage and delegate several role-specific contractors at lower tiers.
UK EPR™	The third generation Pressurised Water Reactor design. It has been designed and developed mainly in France and Germany. In Europe this reactor design was called the European Pressurised Reactor and the international name of this reactor is Evolutionary Power Reactor, but is now referred to as EPR™.
VISSIM	Vissim is a multi-modal traffic flow simulation software package.
VISUM	Visum is a traffic analysis and forecasting software package.
Water Management Zone (WMZ)	Zone in which surface water run-off would be attenuated, treated if required and monitored before being infiltrated back into the groundwater system or discharged to local watercourses under a relevant water discharge permit.
Water Framework Directive (WFD)	European Community Directive (2000/60/EC) on integrated river basin management. The WFD sets out environmental objectives for water status based on: ecological and chemical parameters; common monitoring and assessment strategies; arrangements for river basin administration and planning; and a programme of measures in order to meet the objectives. For further detail consult the European Commission website: http://europa.eu.int
Waveney District Council	Local planning authority immediately to the north of Suffolk Coastal.
Zero Harm	Zero Harm means that EDF Energy will do no harm to its employees or the public through its operations. It will provide healthy workplaces that are safe for all, have a strong focus on wellbeing, and take positive action to ensure the public is not harmed by their operations.

