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1. INTRODUCTION

1.1 Background

1.1.1 Nuclear power has been generated at Sizewell on the Suffolk coast since the commissioning of the Sizewell A plant in 1966, which was operational until 2006. An additional Sizewell B nuclear power station was commissioned in 1995 comprising a single Pressurised Water Reactor (PWR).

1.1.2 EDF Energy is now proposing to develop a new nuclear power station at Sizewell – known as Sizewell C. The proposed Sizewell C Main Development Site would be adjacent and to the north of the existing Sizewell B station. It would comprise two UK EPR reactors with a combined electrical generating capacity of approximately 3,260 MW, along with associated supporting facilities.

1.1.3 This document forms part of EDF Energy’s Stage 1 consultation for the Sizewell C Project and is published alongside a number of other documents that set out information about the proposed development.

1.1.4 This document, entitled Transport Strategy and Supporting Information, provides additional information on issues relevant to the transport impacts of the construction and operation of Sizewell C, the transport-related work conducted to date and additional work planned prior to submitting an application for a Development Consent Order (DCO) for the construction and operation of Sizewell C and its associated development.

1.2 Purpose and Content of the Transport Strategy and Supporting Information

1.2.1 During the construction of Sizewell C there would be significant movement of freight and people to support the construction programme. It is currently estimated that the construction workforce would peak at around 5,600 people and very large volumes of material would require transportation to and from the construction site. Following commissioning of both reactors, it is anticipated that an operational workforce of around 900 personnel would be required. Sizewell C is therefore unusual, when compared to most major residential or commercial developments, in that the greater traffic impact would occur during the period of construction, rather than operation.

1.2.2 EDF Energy is aware that the transport of construction workers and freight during the construction phase may be of concern to local residents both around the construction site and along the main transport corridors to the site. The main purpose of the Transport Strategy and Supporting Information is to provide additional information on a range of relevant issues and thus help consultees respond to EDF Energy’s proposals and options as set out in the Consultation Document. Specifically the document aims to set out:

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1 NNB Generation Company Limited, whose registered office is at 40 Grosvenor Place, London, SW1X 7EN (referred to in this document as “EDF Energy”)

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the main transport-related planning policy context relevant to any transport impacts arising from the Sizewell C Project;

the existing transport context relevant to the Sizewell C Project;

the transport work EDF Energy has conducted to date, including information on the development of a traffic model which will be used to examine the likely traffic impacts associated with the construction and operation of Sizewell C;

the main assumptions which are currently being used to consider the potential traffic impacts of Sizewell C, along with an indication of areas where further work may be required;

EDF Energy’s current thinking and proposals regarding the transport strategy for the movement of the construction workforce and the movement of freight;

EDF Energy’s current view of the main areas of potential traffic impact arising from the construction of Sizewell C – and potential options for mitigation; and

the further work that will be undertaken on transport issues through the consultation process and leading up to an application for a development consent to build and operate Sizewell C and its associated development.

1.2.3 By necessity the Transport Strategy and Supporting Information repeats some information which is contained in the Consultation Document. However additional detail is provided on the process that is being followed, the work undertaken to date, the basis for EDF Energy’s proposals and the further work planned.

1.2.4 Overall the document aims to demonstrate that EDF Energy is following a robust and evidence-based process for assessing the likely traffic impacts of the Sizewell C Project. EDF Energy will not be able to remove all the traffic impacts associated with a project of this scale, and planning policy is clear that it should not be held responsible for addressing existing traffic problems or issues faced by the local transport network. Nonetheless, EDF Energy has identified a range of major proposals which would significantly reduce and manage the traffic generated during the construction and operation of Sizewell C. In line with planning guidance, EDF Energy would also bring forward plans for additional mitigation if impacts cannot be reduced to acceptable levels.

1.2.5 Further information on EDF Energy’s proposals on transport, and assessment of transport related impacts, will be provided at later stages of consultation.

1.3 How to Respond

1.3.1 The Transport Strategy and Supporting Information is one of the suite of documents being published by EDF Energy as part of the Stage 1 consultation for Sizewell C. The other documents are:

- Consultation Document
- Consultation Document: Summary
- Environmental Report

1.3.2 These documents can be downloaded from the Project website http://sizewell.edfenergyconsultation.info/. Alternatively hard copies of the documents are available to view at the Sizewell C Information office (48-50 High Street, Leiston, IP16 4EW); in the offices of Suffolk County Council, Suffolk Coastal District, Waveney District and Ipswich Borough Councils; in a number of local public libraries.
and at the public exhibitions and events that will be held during the consultation period.

1.3.3 EDF Energy welcomes feedback on the proposals. Individuals and organisations wishing to do so can:

- E-mail comments to: sizewell@edfconsultation.info;
- Send written responses to: Sizewell Nuclear New Build, FREEPOST LON20574, London, W1E 3EZ;
- Submit comments via the freephone number 0800 197 6102 (9am-5.30pm Monday-Friday); or

1.3.4 Members of the public can also respond via the public questionnaire which can be found in the Consultation Document: Summary and online at http://sizewell.edfenergyconsultation.info/
2. POLICY CONTEXT

2.1 Introduction

This section sets out the policy and guidance framework that will be used to steer and inform the assessment of Sizewell C transport impacts and any mitigation proposals.

2.2 National Legislation

2.2.1 The Planning Act 2008 created a new system of development consent for Nationally Significant Infrastructure Projects (NSIPs) - including nuclear power stations. Under the Planning Act 2008, the Infrastructure Planning Commission (IPC) was established to determine such applications. On 1 April 2012, under the Localism Act 2011, the IPC was abolished and its functions transferred to the Secretary of State. The Planning Inspectorate, acting on behalf of the Secretary of State, will now examine NSIP applications and then submit its recommendations to the Secretary of State, who will make the final decision on the application. The Secretary of State will make a decision in accordance with national policy (specifically any relevant National Policy Statements (NPSs), taking into account the identified local impacts of the proposals and all representations made.

2.3 National Policy Statements

2.3.1 The Overarching National Policy Statement for Energy (EN-1) and the National Policy Statement for Nuclear Power Generation (EN-6), both of which were designated by Parliament in July 2011, form the primary basis for decision-making on nuclear power station NSIPs. In particular, NPS EN-1 sets out that the Secretary of State should start with a presumption in favour of granting consent to applications for energy NSIPs unless any more specific and relevant policies set out in the relevant NPSs clearly indicate that consent should be refused.

2.3.2 Other policies which the Secretary of State may consider important and relevant to their decision-making may include Development Plan Documents, but paragraph 4.1.5 of NPS EN-1 makes clear that in the event of any conflict between the relevant NPS and any other document, the NPS prevails for the purpose of decision-making given the national significance of the infrastructure.

a) Requirement for a Transport Assessment

2.3.3 NPS EN-1 provides guidance on the comprehensive process of Environmental Impact Assessment (EIA) which must be followed by the applicant for any project that is subject to the European EIA Directive\(^2\). An environmental statement must be submitted as part of the application for development consent for all such EIA development projects. EDF Energy will follow this process for Sizewell C.

2.3.4 The issue of transport is dealt with in section 5.13 of the NPS EN-1. This provides 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.

2.3.5 WebTAG is a framework used to appraise transport projects and proposals in the United Kingdom. It provides a tool for ensuring 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

2.3.6 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 NSIP. Paragraph 5.13.4 states that:

“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.”

2.3.7 Paragraph 5.13.6 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 in paragraph 5.13.8 as follows:

“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.”

2.3.8 It goes on to state in paragraph 5.13.9:

“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.”

2.3.9 Paragraph 5.13.10 states that:

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

2.3.10 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.

2.3.11 When referring to transport impacts the policy states at paragraph 5.13.7 that:

“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
The thrust of policy, therefore, is that the applicant should take reasonable steps to provide mitigation so as to reduce impacts, but that limited weight should be applied to residual impacts.

EDF Energy will prepare a transport assessment for the Sizewell C Project in line with the requirements of EN-1 and the Department for Transport’s WebTAG and Transport Assessment guidance and this will be submitted as part of the DCO application. This assessment will aim to demonstrate that the application of demand management techniques have been fully considered (and linked to the travel plan) to mitigate potentially intensive demand for travel to site but will also take account of how operationally reasonable and cost-effective such measures are in relation to the delivery of the project.

Other National Policy

As explained above, more limited weight should be applied to other policies given the primacy of the NPSs and given that the energy NPSs were drafted taking account of relevant national planning policies. Nevertheless a brief summary of other potentially relevant policies is set out below.

a) National Planning Policy Framework, March 2012

The National Planning Policy Framework (NPPF) was adopted in March 2012 and sets out the Government’s planning policies. The NPPF, therefore, is the most up to date and authoritative statement of national planning policy. Annex 3 of the NPPF includes a list of documents replaced by the NPPF, including Planning Policy Guidance 13: Transport.

Paragraph 3 of the document confirms that the NPPF does not contain specific policies for NSIPs which are to be determined in accordance with the decision making framework set by the Planning Act 2008 and relevant NPSs for major infrastructure, as well as other matters which are important and relevant (which may include the NPPF). As such, in respect of the application for development consent for Sizewell C, the most relevant policy tests in terms of transport are those set out in NPS EN-1 above.

However, it is worth noting the emphasis of the NPPF in promoting sustainable transport. Specifically, paragraph 32 states:

“Plans and decisions should take account of whether:

- the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure,

- safe and suitable access to the site can be achieved for all people; and

- improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.”
2.4.5 This policy provides consistency with paragraph 5.13.7 of NPS EN-1 which recognises that some residual impacts may remain unmitigated.

b) Highways Agency Guidance

2.4.6 It is anticipated that most of the traffic impacts associated with Sizewell C would occur away from the Strategic Road Network (SRN) for which the Highways Agency (HA) is responsible. However EDF Energy will work closely with the HA in relation to any potential impacts on the SRN (in particular in relation to the A14 south of Ipswich) arising from the construction or operation of Sizewell C or its any associated development in the vicinity of the A14. This work will take account of any relevant HA policies and guidance.

2.5 Local Policy and Guidance

2.5.1 As explained above, it is at the discretion of the Secretary of State to determine the weight attributable to local policies given the primacy of the NPS. Local policies, which may be relevant, are identified below.

a) Suffolk Local Transport Plan (2011-31)

2.5.2 Suffolk County Council’s Local Transport Plan (LTP) sets out a programme of transport improvements for the period 2011-2031.

2.5.3 The LTP has been developed in accordance with national and regional strategies and in response to the key transport issues identified for Suffolk. The LTP looks to improve access to jobs and services, achieve development and regeneration, as well as improve the quality of urban and rural environments.

2.5.4 The LTP objectives have been developed to support the Government’s transport priorities, namely accessibility, congestion, safety and air quality. The overarching objective for Suffolk County Council (SCC) is to provide an efficient and sustainable transport system that meets the travel demands of the people of Suffolk, whilst protecting quality of life and Suffolk’s unique environment.

2.5.5 The LTP’s Implementation Programme sets out a number of planned developments of potential relevance to the Sizewell C transport assessment. These include the Beccles southern relief road and the Beccles rail loop, the latter development will allow increased frequency of trains between Ipswich and Lowestoft.

2.5.6 In relation to traffic on the part of the A12 through Farnham, Stratford St. Andrew, Little Glemham and Marlesford the LTP states the following:

“There are long standing issues of traffic volume through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham on the A12. Suffolk County Council strongly supports the provision of proper relief for these communities by the provision of a relief road and will work with the nuclear industry to secure its provision alongside any new power station at Sizewell.”

2.5.7 The A12 route would provide access for vehicles approaching the Sizewell C development site from the south and represents a likely route for the transport of construction personnel and materials. Therefore, within the overall assessment of the traffic impacts of the development, it will be important to take account of the work undertaken by SCC in this area and to consider the additional impacts of the Sizewell
C Project relative to the existing situation and anticipated trends. This is discussed further in section 7.

b) Suffolk Coastal Local Plan (1st Alteration), 2001 and Local Development Framework

2.5.8 The adopted local planning policies for Suffolk Coastal are set out in the Suffolk Coastal Local Plan (1st Alteration) 2001 which was adopted prior to designation of the NPS. A number of the policies have been “saved” until they are replaced by policies in the Local Development Framework (LDF).

2.5.9 Chapter 5 of the Local Plan details transport and communication policies all of which have been saved. Specifically, these include the following relevant adopted policies:

- AP77 – Improvements to the A12;
- AP80 – Car Parking Standards;
- AP81 – Cycle Routes;
- AP82 – Provision for Cyclists;
- AP83 – Provision for Pedestrians;
- AP84 – Rail Services;
- AP85 – Bus Services;
- AP86 – Interchange Facilities; and
- AP107 – Footpaths and Bridleways.

2.5.10 The LDF Core Strategy will in time replace most policies in the Local Plan. The pre-Submission Core Strategy and Development Management Policies DPD was published for consultation in December 2011 and was formally submitted to the Secretary of State for independent examination in May 2012. EDF Energy has subsequently agreed with Suffolk Coastal District Council further modifications to the plan, including recognition that any transportation impacts associated with Sizewell C will be assessed in accordance with National Policy Statements EN-1 and EN-6 (Main Modification 19). The document is undergoing Examination during Autumn 2012 and subject to the Inspector finding the plan sound, it is likely to be adopted in Spring 2013.
3. **EXISTING TRANSPORT CONTEXT**

3.1 **Introduction**

3.1.1 This section provides a brief summary of the existing local transport context close to the proposed Sizewell C Main Development Site – focussing on the areas of greatest likely relevance to the construction programme and the assessment of transport impacts.

3.2 **Location of Sizewell C**

3.2.1 It is proposed to construct Sizewell C on land to the north of the existing Sizewell B power station. The existing Sizewell site is located around 3km to the north-east of the town of Leiston. The small coastal village of Sizewell lies to the south of Sizewell A power station; other nearby towns include Thorpeness and Aldeburgh to the south, Saxmundham to the west and 10km further north along the coast, Southwold. The major towns of Ipswich and Lowestoft are some 40km to the south-west and north respectively.

3.3 **Local Road Network**

3.3.1 The major road for reaching the Sizewell site from more distant locations is the A12, which extends beyond the south-east of Ipswich (where it adjoins the A14) through Lowestoft. The A14 runs from the Port of Felixstowe and northwest towards Cambridge, bypassing Ipswich.

3.3.2 Parts of the A12 are dual carriageway with some single carriageway sections, including through the four villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham as well as Yoxford.

3.3.3 From the A12 the existing Sizewell site can be reached either via the B1122 (travelling through Theberton and then on to Lover’s Lane), the B1119 through Saxmundham and then Leiston or via the A1094 and then the B1069 through Leiston. Of these routes, the B1122 was the approved Heavy Goods Vehicle (HGV) route during the construction of Sizewell B.

3.3.4 The A12 experiences some congestion at peak hours (e.g. in areas to the east of Ipswich). Other parts of the road network close to the Sizewell site generally experience relatively modest existing traffic flows and few if any significant congestion problems, consistent with the relatively rural character of the surrounding area.

3.3.5 **Figure 3.1** shows the location of Sizewell (marked as a star) in the context of the local road network.
Figure 3.1: The Suffolk Road Network between Lowestoft and Ipswich
3.4 Local Rail Network

3.4.1 The East Suffolk Line is an un-electrified railway line running between Ipswich and Lowestoft. The line is double-track from Ipswich to Woodbridge and from Saxmundham to Halesworth, with the rest of the route being single track.

3.4.2 Currently there is an hourly passenger train service between Ipswich and Saxmundham on this line and a service once every two hours between Saxmundham and Lowestoft. Resignalling and the development of a new passing loop at Beccles will shortly enable the service to become hourly between Ipswich and Lowestoft. From Ipswich and Lowestoft there are connections into the wider regional and national rail network.

3.4.3 A single track branch line runs between Saxmundham and Leiston but is not currently used for any public rail passenger services. The line is used for occasional movements of spent fuel associated with the decommissioning of the Sizewell A nuclear power station. There are five level crossings on the branch line which are crew operated and the line terminates in a small siding south of King George’s Avenue in Leiston. The branch line was used for the delivery of cement and other construction materials by rail during the construction of Sizewell B.

3.5 Local Bus Services

3.5.1 A number of local bus services serve the town of Leiston and surrounding towns and villages in the Suffolk Coastal District. The main services of relevance are shown in the table below and timetables for these services are available from www.suffolkonboard.com.

<table>
<thead>
<tr>
<th>Service</th>
<th>Route</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>Ipswich – Woodbridge – Saxmundham – Aldeburgh</td>
<td>First in Norfolk &amp; Suffolk</td>
</tr>
<tr>
<td>165</td>
<td>Ipswich – Woodbridge – Rendlesham – Aldeburgh</td>
<td>Anglian Buses</td>
</tr>
<tr>
<td>196</td>
<td>Saxmundham – Yoxford – Westleton – Leiston</td>
<td>Minibus &amp; Coach Hire (East Anglia)</td>
</tr>
<tr>
<td>521</td>
<td>Aldeburgh – Leiston – Saxmundham – Halesworth</td>
<td>Anglian, Minibus &amp; Coach Hire, Nightingales</td>
</tr>
</tbody>
</table>

3.6 Walking and Cycling

3.6.1 The relatively rural and flat character of the landscape in the vicinity of the Sizewell site provides opportunities for walking and cycling, both for leisure pursuits and for the daily journey to work.

3.6.2 There are a range of existing rights of way and cycle paths in the neighbouring towns and villages close to Sizewell. Suffolk’s public rights of way website: http://publicrightsofway.onesuffolk.net/ provides information on rights of way in Suffolk.

3.7 Port Infrastructure

3.7.1 The nearest commercial port facilities are located at Lowestoft, Ipswich and Felixstowe, approximately 40-50km from the site. Lowestoft and Ipswich ports are owned and operated by Associated British Ports and provide a range of facilities for container, bulk and general cargo handling. The port of Lowestoft is a centre for servicing the offshore oil and gas industry, and more recently for the offshore wind energy industry. The port of Felixstowe is operated by the Felixstowe Dock and Railway Company and handles container cargo.

3.7.2 In principle, the ports of Lowestoft and Ipswich could provide locations for the storage and transhipment of Abnormal Indivisible Loads (AILs) and bulk materials required for the construction of Sizewell C. At this stage it is envisaged that this could be achieved via the use of existing facilities as opposed to any significant new development at the ports.
4. TRAFFIC MODEL DEVELOPMENT

4.1 Purpose of a Traffic Model

4.1.1 One of the key elements of the process of assessing the likely traffic impacts of a major development is the preparation of a traffic model of the local road network which is likely to be affected by the development.

4.1.2 The process begins with the preparation of a “base model” which aims to accurately replicate the existing conditions on the local road network in question. A process of calibration and validation is undertaken so that the model reflects observed traffic conditions. Traffic growth and committed developments and transport improvements are then included to estimate the future conditions which would apply on the road network in the absence of the development (in this case Sizewell C). This is known as the “reference case” model.

4.1.3 The third stage of the process is to add estimates of traffic generated by the development to the reference case model. This “with-development” model can then be used to examine the likely future impacts of the development on the road network. A benefit of a modelling process of this kind is that it can be used to test different scenarios and thus ensure that the conclusions reached about potential traffic impacts are robust to the range of plausible outcomes that may occur.

4.1.4 EDF Energy is in the process of developing a traffic model for the Sizewell C Project. This section sets out the status of the model development to date, the data sources being used and the future work which will be conducted to refine and enhance the modelling through the process of consultation on Sizewell C.

4.1.5 Through the consultation and pre-application process, EDF Energy will work closely with SCC in relation to the development and refinement of the traffic model. SCC and the Highways Agency are the relevant highway authorities for the development. EDF Energy will aim to agree “base”, “reference case” and “with-development” models with SCC, such that there is an agreed position on the additional traffic that Sizewell C is likely to generate during construction and operation.

4.2 Nature of the Traffic Model

4.2.1 The traffic model being developed is a VISUM model. VISUM is one of a number of industry standard software packages used for traffic modelling and is widely used for the purposes of transport assessment.

4.2.2 The VISUM modelling will be compliant with WebTAG and the Design Manual for Roads and Bridges (DMRB) and will provide outputs that can be readily used in the transport assessment and for associated air quality and noise assessments in the environmental statement. VISUM also provides a direct means of easily developing a more detailed micro-simulation model of particular areas of the highway network, should this prove to be necessary.

4.3 Study Area and Model Network

4.3.1 The study area and modelled network for the VISUM model extends to Lowestoft to the north, Ipswich to the south and the A140 to the west. The geographic extent of
4.3.2 EDF Energy is confident that the geographic extent of the model accurately reflects all areas of the road network where there is any potential for material traffic impacts associated with Sizewell C. Nonetheless, if further work suggests that there is a good case for extending the geographic scope of the model, this can be done at a future date.

Figure 4.1: Geographic Extent of the Sizewell C VISUM Traffic Model

4.4 Status of Model Development and Data Sources

4.4.1 An initial VISUM base model has been developed using the following data sources:
A wide range of Manual Classified and Automatic Traffic Counts (ATC) on the local road network were commissioned by EDF Energy and conducted in May and June 2011. The full list of locations where traffic counts were undertaken is set out in Appendix 1A.

Count information from the Highways Agency Traffic Flow Data System which holds information on traffic flows at sites on the motorway and trunk road network.

### 4.4.2 Reference Case Model

A reference case model has then been developed for the period of peak construction – this model includes assumptions on background traffic growth and the additional traffic associated with major items of "committed development", i.e. projects with planning consent but not yet built. This reference case specifically includes traffic associated with the SnOasis ski, leisure and tourism development in Great Blakenham to the northwest of Ipswich. For robustness it also assumes that the first stage of the Adastral Park housing and commercial development in Martlesham to the east of Ipswich has received planning permission and been developed by the time of peak construction of Sizewell C.

This model has then been used to make an initial assessment of the potential impacts of Sizewell C related traffic during the period of peak construction. This has been done by adding estimates of Sizewell C related traffic to the reference case model. The main project assumptions used to generate traffic assumptions are set out in sections 5 and 6 of this document. This modelling has informed EDF Energy’s initial position on the likely traffic impacts of the development as set out in the Consultation Document and later sections of this paper.

### 4.5 Modelled Periods

The traffic modelling conducted to date has considered:

- the peak period of Sizewell C construction; and
- traffic conditions on a Friday afternoon on the local road network.

The reason for the choice of modelling using Friday base flows is that analysis of the May 2011 survey data suggests Friday is typically the busiest day of the week on the relevant road network. On Fridays the period 3-4pm has been identified as a period which combines high existing flows with high forecasted development flows and this has therefore been chosen as an initial modelled period.

The combination of modelling the peak period of Sizewell C construction alongside the peak period of existing traffic flows means that the outputs of the model represent a robust assessment of the likely traffic impacts of Sizewell C. On most days during the construction of Sizewell C, both existing traffic flows and those related to Sizewell C can be expected to be lower than have been modelled.

Nonetheless, EDF Energy recognises that further modelling of other time periods is likely to prove desirable or necessary through further stages of the pre-application process. Such additional modelling will include morning and evening network peaks and could, for example, include:

- analysis of other modelling hours including the “shoulder peak” periods on the local road network – i.e. those periods before and after the main network peak;
- analysis of summer peak periods on the local road network; and
- analysis of other periods in the construction programme.
Decisions on the modelling of other periods will be made in consultation with SCC and the HA and linked to the potential for there to be materially worse or different traffic impacts than have been identified in the modelling conducted to date.

**Further Development and Refinement of the VISUM Traffic Model**

EDF Energy recognises that further work can be done to refine the VISUM traffic modelling and enhance its robustness and comprehensiveness. This work should improve the level of confidence in the preliminary output from the work conducted to date.

This additional work is planned and comprises the following elements:

- A programme of model validation working with SCC to ensure that the base model reflects existing network conditions as accurately as possible.
- Enhancement of the model to include data from additional traffic counts which have been conducted in Autumn 2012. This data will provide additional detail to the model and allow an outer region of traffic count information to be used in conjunction with the already comprehensive information collected in the areas of the road network closer to the Sizewell C Development Site. A list of the additional survey locations is in Appendix 1A.
- The addition of some traffic flow data from the existing East of England Regional Model (EERM).
- Consideration of ATC information from SCC from a range of permanent count sites for May and August 2011 to address the question of the extent of seasonality of the existing road network.

The outputs from the Sizewell C VISUM traffic model will be used to assess the traffic impacts of the project against a range of criteria which will include:

- Link flow differences (i.e. the change in the absolute additional number of vehicles and the percentage increase on any given stretch of road);
- Impacts on journey times;
- Ratio of Flow to Capacity on links; and
- Junction ‘Level of Service’.

Ratio of Flow to Capacity and Junction Level of Service are industry standard means of assessing the impact of additional traffic on the capacity of the road network and the operation of junctions.

Outputs from the traffic model can also be used to assess individual junction performance using industry standard software packages such as ARCADY, PICADY, or LinSig as appropriate.

Following Stage 1 consultation, the traffic model will also be developed to assess the likely traffic impacts of Sizewell C once the construction programme is complete and the power station is operational.
5. MOVEMENT OF THE CONSTRUCTION WORKFORCE

5.1 Introduction

5.1.1 This section sets out EDF Energy’s current thinking and strategy as regards the movement of the construction workforce for Sizewell C – with a particular focus on proposals for the peak years of construction when the workforce will be at its highest.

5.1.2 There are a range of areas where further work will be done to develop and refine the transport strategy for the workforce, which are set out within this section. For these reasons the proposals, assumptions and information contained in this section should be considered as provisional at this stage. They are initial proposals which may be subject to change. They should not be viewed as firm plans which will definitively form part of EDF Energy’s final proposals in the Development Consent Order application for Sizewell C.

5.2 The Peak Construction Workforce

5.2.1 The peak construction workforce for Sizewell C is estimated to be around 5,600 workers. This section sets out the approach anticipated for the daily journey to and from the Sizewell C site at peak construction and the associated assumptions which have been used in the initial traffic modelling.

5.3 Location of the Construction Workforce

a) Sizewell C Gravity Model

5.3.1 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 will 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 will find accommodation in the area during the construction period. Many of these workers will be resident in an accommodation campus provided by EDF Energy. Others will find their own accommodation in the local area – for example private-rented, tourist or caravan accommodation.

5.3.2 In order to model 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. This is a model which predicts the likely distribution of construction workers, taking account of the key factors that will influence the residential location of the workforce.

5.3.3 The “gravity” element of the model essentially takes account of the principles that, on average, the workforce will tend to choose to locate itself closer to the construction site rather than further away (subject to the availability of accommodation) and that more workers will tend to be located in towns and regions with larger populations rather than small villages and areas of lower population.
5.3.4 In addition, development of the Sizewell C gravity model has been informed by a number of other assumptions and information sources, as follows:

- At peak construction, home-based workers are estimated to represent 34% of the Sizewell C construction workforce and non-home-based workers to represent 66%. The greater proportion of non-home-based workers at peak construction reflects both the scale of labour demand at this point in the project and the range of specific skills required – not all of which can fully be met locally.

- Home-based workers will be willing to commute up to 90 minutes each way on a daily basis.

- Non-home-based workers will tend to locate themselves closer to the construction site, and will, therefore, be willing to commute up to 60 minutes each way on a daily basis.

- At peak construction, at least 2,000 non-home based workers will be resident at an EDF Energy accommodation campus located at or close to the construction site (see section 5.4).

5.3.5 The gravity model has also been informed by an assessment of the availability and affordability of other sources of potential accommodation for non-home-based workers. This assessment has relied on publicly available datasets, information from the East of England Tourist Board, consultation with local authority partners and research into the costs of tourist accommodation in Suffolk. Further information on the socio-economic inputs to the gravity model is in Chapter 3 of the Environmental Report.

5.3.6 By definition, a gravity model of this kind cannot precisely predict the future location of all Sizewell C construction workers, or take full account of all of the factors which may influence accommodation and employment decisions that are still many years away. That said, EDF Energy considers that the gravity model which has been developed provides a reasonable prediction of likely worker locations and is the best estimate that can be made at the present time.

5.3.7 The details of the gravity model will be discussed with the relevant local authorities and updated through further stages of the pre-application process (e.g. to take account of new population data from the 2011 Census or to reflect any changes to EDF Energy’s proposals). The model can also be used to examine the impact of changes to the main assumptions or scenarios.

b) Outputs from the Initial Sizewell C Gravity Model

5.3.8 The following figures illustrate the outputs from the initial Sizewell C gravity model, which have been used in associated traffic modelling.

5.3.9 **Figure 5.1** shows a visual representation of the estimated distribution of home-based workers at peak construction. The Figure indicates concentrations of workers in Ipswich and Lowestoft and to a lesser extent, locations such as Felixstowe, Colchester, Great Yarmouth and Norwich, which are closer to the edge of the 90 minute catchment zone for this category of workers.

5.3.10 **Figure 5.2** shows a visual representation of the estimated distribution of non-home-based workers at peak construction (excluding those in the EDF Energy-provided campus accommodation). This encompasses a smaller catchment area, reflecting the 60-minute commuting assumption for this category of workers. As with the home-
based workforce, there are concentrations of workers in the Ipswich and Lowestoft areas. However, compared to the home-based distribution, more workers are located relatively close to site in the coastal areas of Suffolk Coastal District. This principally reflects the assumption that there will be some up-take of local tourist and caravan accommodation by this category of workers.

5.3.11 In terms of the transport strategy adopted for the movement of the Sizewell C peak construction workforce, a number of conclusions can be drawn from the gravity modelling conducted to date:

- Workers are likely to be travelling from a wide range of locations.
- A significant proportion of workers are likely to be travelling to the site from both the north and from the south, with a relatively even distribution between northern and southern residential locations. If travelling by car, the majority of these workers would use the A12 for a significant proportion of their journey.
- There will also be a significant number of workers (initially estimated at around 1,200) who, in addition to those in campus accommodation, would be resident in locations closer to the site and east of the A12.

5.3.12 These considerations have helped influence the proposed transport strategy for the Sizewell C construction workforce. This is set out in the following sections.
Figure 5.1: Estimated Geographic Distribution of Sizewell C Home-based Workforce at Peak Construction
Figure 5.2: Estimated Geographic Distribution of Sizewell C Non-home-based Workforce at Peak Construction
5.4 Transport Strategy for the Peak Construction Workforce

5.4.1 The following sections describe EDF Energy’s proposals for the movement of the Sizewell C workforce at peak construction. These proposals are not final or fixed and are subject to consultation and wider project development. Nonetheless they indicate the current thinking and the assumptions that have been used to date.

a) Accommodation Campus

5.4.2 As set out in the Consultation Document, EDF Energy is proposing to build a temporary accommodation campus next to, or near to, the Sizewell C construction site. Between 2,000 and 3,000 people could be accommodated at such a campus and a range of location options are presented in the Consultation Document.

5.4.3 This would mean that those 2,000-3,000 workers – approximately 36-54% of the total workforce at its peak – could reach the site every day on foot, by bicycle or via a very short bus journey. A large accommodation campus of this scale would deliver a very significant reduction in the daily traffic movements associated with the peak years of Sizewell C construction. It is one of the most significant practical measures that can be implemented to reduce traffic impacts.

5.4.4 The accommodation campus would have its own dedicated car park that would be limited to the use of residents of the campus and staff working at the accommodation campus e.g. cleaning staff / restaurant staff.

5.4.5 For the purposes of initial traffic modelling a 2,000 bed accommodation campus has been assumed – this is the low end of the range of campus size proposed. Any increase in the campus size would serve to further reduce traffic impacts compared to those which have been modelled.

b) Car Usage, Site Parking and Car Sharing

5.4.6 The relatively rural character of the Suffolk area and the widely dispersed pattern of the workforce mean that the scope for cost-effective interventions to promote non-car modes will be constrained and private car usage is likely to play a significant role for many construction workers.

5.4.7 Some employees would therefore drive directly to the construction site. This would include those who, for operational reasons, would be allowed to bring their car to the site to assist in carrying out their duties. It would also include people resident in the towns and villages east of the A12 for whom the provision of alternative transport modes is not likely to be viable or cost effective and for whom travel to a more distant park and ride location would be unattractive as it would involve them driving away from the site.

5.4.8 Taking account of these considerations, EDF Energy is proposing a construction site car park of 1,000 spaces. A permit system would operate for the car park and a priority system would be defined for the allocation of these permits. Car sharing to the site car park would be encouraged. EDF Energy anticipates including a range of car sharing measures in the travel plan which will be developed for the construction phase and will form part of the development consent application for Sizewell C.
5.4.9 EDF Energy’s approach will be to have the construction site car park used as much as possible throughout the construction phase. This car park will also be the sole destination for car drivers in the early and latter phases of the construction programme when EDF Energy’s park and ride facilities are under development or being removed.

5.4.10 During the peak construction years, it is anticipated that construction workers who are not in possession of a parking permit for the on-site car park (or car sharing with a permit holder) would have the choice of driving to their closest park and ride site, using a direct bus service, or using a bus pick-up service from a local rail station.

c) Park and Ride

5.4.11 EDF Energy considers that park and ride facilities could play an important role during the peak years of construction, acting to significantly reduce the amount of construction-worker traffic on local roads and through local villages.

5.4.12 As set out previously, the gravity model provides an assessment of where the peak construction workforce is likely to be resident. This work indicates that there are likely to be substantial numbers of workers travelling from both the north and the south of the site on the A12.

5.4.13 EDF Energy is therefore proposing to build two temporary park and ride facilities adjacent to the A12 – one for drivers approaching Sizewell from the north and the other for drivers approaching from the south.

5.4.14 A number of site options for a northern and a southern park and ride development are set out in the Consultation Document. The locations have been chosen with the aim of intercepting construction-related traffic at strategic locations to reduce traffic through the towns and villages closer to the site. Further work will be undertaken on the required size of any park and ride developments but it is currently envisaged that both the northern and southern park and ride sites could accommodate up to around 1,000 car parking spaces, as well as parking provision for cyclists and motorcyclists.

5.4.15 Bus transfer movements linked to EDF Energy’s park and ride proposals will be included in the traffic modelling of the development. These will assume regular movements to coincide with shift changeover times and a skeleton service outside these hours. Park and ride buses will be required to follow fixed routes to site; these are anticipated to be the same as the HGV routes identified in chapter 6.

d) Direct Buses

5.4.16 Dedicated direct buses would be provided from a small number of locations where there are enough workers to justify regular services. This is expected to include services from central Ipswich and Lowestoft. Again, direct buses will be required to follow fixed routes.

5.4.17 In the initial traffic modelling it has been assumed that 200 workers at peak construction are brought to and from the site by direct buses from Ipswich and Lowestoft. EDF Energy considers that this is a conservative assumption which ensures that traffic impacts from Sizewell C are not under-estimated. In practice it may be possible to move more workers in this way.
e) Rail

5.4.18 EDF Energy would provide bus pick up services from the nearest railway stations on the East Suffolk line to the Sizewell C construction site. These stations are at Darsham and Saxmundham. This would encourage the use of local rail services on the East Suffolk line. The bus service from Darsham station could be integrated into the northern park and ride bus services. It is expected that the service from Saxmundham station would also be available for site employees resident in Saxmundham and able to walk or cycle to the station.

5.4.19 In the initial traffic modelling it has been estimated that, at peak construction, 100 workers per day would travel by rail on the East Suffolk line and then by an EDF Energy bus from Darsham or Saxmundham station to the construction site. The relatively small role envisaged for rail in the movement of the construction workforce is explained by the following considerations:

- Based on the gravity model work described in section 5.2, it is estimated that only a relatively modest proportion (less than 15%) of the total peak construction workforce would be resident near a rail station on the East Suffolk line.
- The attractiveness of using rail for workers would be further limited by the constrained (hourly) frequency of services on the East Suffolk line – and the relatively slow journey time by rail from many locations - compared to travel by car or bus.
- The local rail infrastructure is constrained in a variety of ways, limiting the scope for additional passenger services.
- Anticipated start and finish times of the main shift patterns would not always coincide with regular rail services.

5.4.20 However, although the scope for moving workers by rail is anticipated to be limited, EDF Energy does envisage that rail can play a significant role in the movement of freight for the construction of Sizewell C. Proposals to allow substantial quantities of freight to travel by rail, which would reduce HGV movements on the local road network and provide a useful legacy in terms of enhanced local rail infrastructure, are discussed further in section 6.

f) Walking, Cycling and Motorcycling

5.4.21 People living close to the Sizewell C site (for example in surrounding towns and villages such as Leiston) would be encouraged to walk or cycle where practicable. EDF Energy plans in further stages of transport work to explore in more detail the scope to encourage cycling and walking – this could include, for example, by improving footpaths, cycle routes, signage and cycle parking provision.

5.4.22 At this stage in the assessment process, aside from workers resident at the accommodation campus, no construction workers have been assumed to walk or cycle to the Sizewell C construction site or to relevant park and ride sites. EDF Energy plans to encourage use of these modes but this assumption has been made for the purposes of adding robustness to the initial traffic impact assessment. In practice, some use of these non-car modes would occur with a resulting beneficial impact on the level of traffic generated by Sizewell C.
5.4.23 In future stages of assessment assumptions will be made on the number of construction workers likely to walk, cycle and motorcycle. These assumptions will be made taking account of national travel-to-work patterns for comparable geographic locations, the specific locations of the Sizewell C construction site and associated development sites, as well as any EDF Energy proposals and travel plan measures to encourage and facilitate the use of non-car modes.

5.4.24 Based on adoption of the above transport strategy proposals for the movement of the construction workforce, EDF Energy anticipates that the proposed strategy would achieve a good degree of modal shift relative to existing journey to work patterns in the local area. This would arise in particular from the significant proposals by EDF Energy for an accommodation campus and park and ride developments.

5.5 Other Assumptions Relevant to Construction Workforce Movements

5.5.1 A number of other assumptions have been used in the initial traffic modelling to ensure a robust assessment of the likely traffic impacts of Sizewell C. These are summarised as follows:

a) Car Sharing

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

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

5.5.4 The car sharing assumptions set out above 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.

b) Non-work-related Travel by Non-home-based Workers

5.5.5 Where appropriate, assumptions have been and will be made in the modelling to include other non-work related trips made by the construction workforce, whether to and from the accommodation campus or from other locations. These assumptions will take account of EDF Energy’s proposed shift patterns.

c) Shift Patterns

5.5.6 In the traffic modelling conducted to date, it has been assumed that EDF Energy would operate shift patterns at Sizewell C which are the same as those proposed at the Hinkley Point C Project in Somerset.

5.5.7 On this basis a range of shifts are expected to operate during construction of Sizewell C including:

- first construction shift (of a double shift operation);
- second construction shift (of a double shift operation);
night working shift;

single construction shift; and

office shift.

5.5.8 The start and end windows for each shift (weekdays only) which have been proposed at Hinkley Point C are shown at Table 5.1.

<table>
<thead>
<tr>
<th>Shift</th>
<th>Start Window</th>
<th>End Window</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Shift</td>
<td>From 06:00-07:30</td>
<td>From 14:00-16:00 or after 17:30</td>
</tr>
<tr>
<td>Second Shift</td>
<td>From 13:30-15:00</td>
<td>From 22:00-00:00</td>
</tr>
<tr>
<td>Night Working Shift</td>
<td>From 20:30-22:00</td>
<td>From 06:00-08:00</td>
</tr>
<tr>
<td>Single Shift</td>
<td>From 07:00-08:30</td>
<td>From 16:30-18:30</td>
</tr>
<tr>
<td>Office Shift</td>
<td>From 07:30-09:00</td>
<td>From 17:30-19:00</td>
</tr>
</tbody>
</table>

5.5.9 These shift patterns have been derived by EDF Energy to provide defined windows within which contractors have the flexibility they need to adapt their organisation for the works to be undertaken. In addition to providing flexibility to the contractors, the start and end windows for each shift aim to reduce development traffic coinciding with the AM and PM network peak hours. The majority of workers (approximately 75-80%) are expected to be working on either the first, second or single construction shift, with most of the remaining employees working an office shift. Night working would involve smaller numbers of workers and less noisy activity.

5.5.10 At weekends it is anticipated that different shift patterns would apply. Some construction staff may work a Saturday morning shift. Other construction staff may be expected to work an alternating pattern (for example 11 days on, three days off, 12 days on, two days off) in which the Saturday and Sunday of one weekend is worked as a full normal shift (operating on the same times as the Monday to Friday shifts) and the following weekend is non-working. These arrangements also provide an opportunity for non-home-based workers to return home on a regular basis.

5.5.11 There would also be some occasions and activities which would require continuity of working, such as tunnelling 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.

5.5.12 Overall the different shift patterns which would operate on the project would have the benefit of spreading Sizewell C-related traffic movements across a range of times during the day and thus reducing peak traffic impacts on the local road network.

5.6 Associated Development Operational Workers

5.6.1 In addition to the construction workforce, a much smaller number of workers would be employed as operational support staff at EDF Energy’s associated development sites. The travel and shift patterns associated with these workers will be defined in further work once the location and size of EDF Energy’s preferred associated
developments have been determined following Stage 1 consultation. This will also be factored into the traffic modelling.

5.7 Further Work on the Transport Strategy for the Sizewell C Workforce

5.7.1 As noted above, there are a range of areas where further work will be undertaken to develop and refine the transport strategy to be adopted for the construction workforce. This work will also take account of responses to consultation and any changes to EDF Energy’s proposals which arise from that consultation or wider project development. Any such changes will be reflected in the modelling assumptions which are used and will be discussed with the relevant highway authorities.

5.7.2 Further work in this area will also consider the much lower level of movements associated with the operational workforce for Sizewell C.
6. MOVEMENT OF FREIGHT

6.1 Introduction

6.1.1 The construction of Sizewell C would require the movement of very substantial amounts of construction materials. This has obvious potential implications for the local transport network and public amenity.

6.1.2 This section sets out the current position in relation to the anticipated volume and nature of the materials which would need to be moved and EDF Energy’s current thinking and strategy as regards the management of freight during the construction phase of the development.

6.2 Material Quantities

6.2.1 EDF Energy is continuing to work to refine estimates of the volume of materials which would require transportation to and from the site during the construction of Sizewell C.

6.2.2 In broad terms these material movements can be divided into four general categories:

- The materials which would be required to be brought to the construction site for the construction of the two proposed UK EPR reactors and all associated elements of the power station 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, any accommodation campus adjacent to the construction site, sea defences, the jetty (see section 6.7) and temporary and permanent bridges etc.

- Material movements associated with the bulk earthworks phase of the construction programme, during which it is currently anticipated that there would be a requirement for substantial movement of surplus excavated material from the site and import of fill material to the site.

- Material movements associated with the construction and decommissioning of any associated development (e.g. park and ride sites).

6.2.3 These different categories are set out and explained in more detail in the following sections.

6.3 Material Quantities for Construction of two UK EPRs and all Ancillary Buildings

6.3.1 The material quantities required for the main construction of two UK EPR reactors have been considered carefully as part of the development of EDF Energy’s Hinkley Point C Project. The Sizewell C design is essentially the same as that of Hinkley Point C and, as such, the material quantities estimates for this element of the Sizewell C Project are the same at this stage.
6.3.2 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 civils works. 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.

6.4 Material Quantities for Sizewell C Specific Elements of the Construction Programme

6.4.1 There are a range of elements of the Sizewell C construction which are specific to the Sizewell C Project and site. Sizewell C specific designs are therefore required, together with specific material quantities estimates.

6.4.2 The main items which fall into this category are as follows:

- Site set up and infrastructure (including access road, temporary and permanent bridges, utilities and fencing).
- Any accommodation campus located at the Sizewell C Main Development Site or nearby.
- Any Visitor Centre.
- Any new rail-head at Leiston or within the construction plot plan (see section 6.7).
- The jetty required to bring materials to and from the construction site by sea (see section 6.7).
- The cut off wall (which would be required to support the earthworks/excavation phase)
- Sea protection for the permanent Sizewell C site.

6.4.3 Many of these elements of the Sizewell C construction are much less well defined as they are in the design development phase and their size, location and design will be the subject of consultation. Any material quantities estimates for these elements of the Project are, therefore, more provisional at this stage.

6.4.4 However, for the purposes of ensuring a robust approach to the material quantities which may be generated by the Project – and the associated transportation requirements – initial materials estimates for these elements of the Project have been made. In total it is currently estimated that these elements of the Project will add approximately a further 1 million tonnes to the total material quantities requirements. As with the main construction, the main requirements will be for concrete materials and other building construction materials.

6.5 Material Quantities Movements During the Earthworks Phase

6.5.1 During the early phase of construction of Sizewell C, a large area would need to be excavated to provide the foundations for the new power station and associated buildings.
6.5.2 A significant proportion of the excavated material would be peat, or peat mixed with clay. This material is largely unsuitable for use as engineering fill material and is also considered to be unsuitable for wider landscaping within the construction area or EDF Energy estate. As such, it is currently anticipated that this material may well require re-use off-site and EDF Energy is actively exploring the option of providing this material to the Wallasea Island Wild Coast RSPB nature reserve project in the Crouch Estuary in Essex. Other re-use options are also under consideration.

6.5.3 The precise volume of excavated material which is likely to be unusable is subject to further geotechnical study and engineering assessment. At the present time it is estimated that around 6 million tonnes of excavated material in total may be generated during the excavation phase. This figure remains subject to some uncertainty linked, in particular, to decisions on the final platform height and the precise location of the cut off wall to be adopted for the development.

6.5.4 Of this approximate 6 million tonnes, it is estimated that:

- around one third (approximately 2 million tonnes) would almost certainly be unusable; and
- about another third of this material is very likely to be re-usable as fill material or for site landscaping.

6.5.5 Much higher levels of uncertainty currently surround the last third of excavated material and this is the subject of further detailed study and assessment with the objective of securing higher levels of confidence in the relative proportions of usable and unusable material.

6.5.6 Closely linked to the volume of unusable excavated material is the volume of engineering fill material which would need to be imported during the earthworks and early phases of main construction. In simple terms, the more excavated material that is deemed unusable, the greater the potential requirement to import engineering fill material. Based on conservative assumptions around the volume of excavated material which may be found to be unusable, up to around 3-4 million tonnes of engineering fill material could require importation. This figure is felt to be conservative and there are considered to be good prospects that the figure will fall once more detailed geotechnical characterisation of the excavated material has been made.

6.5.7 It is also being explored whether a borrow pit or pits could be created within the construction area to help source engineering fill material for the Sizewell C Main Development Site. If feasible, this would help reduce the amount of fill that would need to be transported by sea, rail and/or road. Any borrow pit(s) would be of a temporary nature and would not be left open but restored to the level of the construction area.

6.5.8 Further information on material quantities movements during the earthworks phase will be provided at a later stage of consultation. At a high level, EDF Energy’s strategy for the earthworks phase will be to seek to reduce, as far as is cost-effective,

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3 The EDF Energy estate means all the land EDF Energy owns in the area – some 650 hectares in all.
technically practicable and environmentally sustainable, the volume of excavated material which is unusable. This will reduce the likely transportation requirements for both excavated material and imported engineering fill.

6.5.9 Nonetheless, given the overall scale of earthworks movements, there is likely to be a remaining requirement to import and export significant volumes of material. EDF Energy will seek to ensure that the large majority of this material is moved by sea or rail where practical and cost-effective, in line with relevant policy.

6.6 Material Quantities Arising from Associated Development

6.6.1 In addition to the above, there will be some material movements associated with the construction and deconstruction of any associated development for the Sizewell C Project – e.g. any park and ride developments, freight management facilities, induction centre etc.

6.6.2 The material quantities for these developments will be very small relative to those required for the main construction of Sizewell C and listed in the previous sections. HGV movements for their construction and de-construction would also be likely to occur outside the peak years of Sizewell C construction. Once the size, location and design of EDF Energy’s proposed associated developments have been more precisely determined, estimates of the material quantities required will be made and factored into any relevant traffic modelling where appropriate.

6.7 EDF Energy’s Transport Strategy for the Movement of Freight

6.7.1 EDF Energy’s transport strategy envisages that both sea and rail would play significant roles in the delivery of construction materials to the site. A number of substantial proposals for new infrastructure to achieve this are set out below. These proposals could secure very large reductions in the volumes of freight which would otherwise need to be delivered by road.

a) Freight by Sea

6.7.2 Construction of Sizewell C would require the delivery of a significant number of very large items (known as Abnormal Indivisible Loads or AILs) such as steam generators, transformers and alternators. Some of these items are substantially longer, wider or heavier than can easily be moved on the local road network.

6.7.3 EDF Energy therefore plans to build a temporary jetty at the construction site. It is envisaged that this facility would not only be used for the delivery of all of the largest AILs during the construction programme but also for:

- the sea export of surplus excavated material; and
- the sea import of bulk, containerised or pre-fabricated construction materials.

6.7.4 The jetty would be a significant development in its own right. EDF Energy is working on its design to ensure that it is optimised to facilitate the import and export of materials during the construction programme.

6.7.5 At this stage it can be identified that the jetty would:

- be in part a piled structure;
• have multiple berths to ensure that it can play a full role in the delivery of AILs and other freight for the Project, as well as facilitating export of excavated material;
• be designed to allow roll-on roll-off (Ro-Ro) operations; and
• be designed to reduce impacts on the foreshore.

6.7.6 Once Sizewell C is operational, AILs would occasionally need to be brought to site: e.g. during planned periodic replacement of large items such as turbine rotors. Facilitating this may require permanent retention of some elements of the jetty structure. This, along with alternative options for AIL delivery during operation, is currently being examined and further information on this will be provided at Stage 2 consultation.

b) Freight by Rail

6.7.7 EDF Energy considers that rail would also play an important role in the delivery of freight during construction, offering an alternative non-road option to the jetty for delivery of many kinds of construction materials and potentially for the export of un-usable excavated material. This would offer flexibility for the freight strategy and secure a freight mode that would be operational all through the year with much less risk of weather disruption. Use of rail would further reduce the number of HGV movements likely to be required on the local road network.

i. Existing Rail Infrastructure

6.7.8 EDF Energy considers that the existing rail terminal at Leiston (south of King George’s Avenue) could, with a modest amount of refurbishment, be used to bring freight deliveries close to site by rail during the early stages of the Project – with onward HGV transfer to the construction site via Lover’s Lane. Figure 6.1 shows the existing rail terminal.

6.7.9 However, the capacity of this terminal and the existing local rail infrastructure to support rail freight deliveries is currently limited to around one freight train per day, which would be insufficient for achieving the aim of substantially reducing road freight.

6.7.10 EDF Energy is therefore inviting views on a number of proposals which would enhance the scope for using rail for freight.

ii. New rail-head and freight laydown area north of King George’s Avenue

6.7.11 One option would be to develop a new and larger rail terminal north of King George’s Avenue. This would be located on part of the land to the north-east of Leiston industrial estate – as shown in Figure 6.2 with an indicative location of the rail-head within the site.
Figure 6.1: Location of Existing Rail-head South of King George’s Avenue

Figure 6.2: Potential Location of a New Rail-head North of King George’s Avenue
6.7.12 A new rail-head at this location would offer a number of potential benefits relative to use of the existing rail-head:

- It would provide substantial additional space for unloading and a useful location for rail and other freight to be stored prior to delivery to the construction site.
- It would provide space for longer freight trains with the capacity to unload two at once. This additional space is likely to be required if around 4-5 trains per day are delivering freight for Sizewell C.
- It would avoid the need to use the level crossing on King George’s Avenue, thereby avoiding potential delays to traffic. EDF Energy is aware that delays at this level crossing were a concern on some occasions during the construction of Sizewell B.
- It would mean that unloading operations would take place further away from residential areas of Leiston compared to use of the existing rail-head.

6.7.13 As with use of the existing rail terminal, this option would involve onward HGV transfer of rail delivered freight via a short trip on Lover’s Lane. EDF Energy is also considering this land as a temporary area for freight storage, pre-fabrication and laydown during the construction phase, irrespective of whether it becomes the location for a new rail-head.

iii. Extending the Saxmundham-Leiston branch line into the construction site

6.7.14 An alternative to the development of a new rail-head north of King George’s Avenue would be to temporarily extend the Saxmundham-Leiston branch line into the construction area.

6.7.15 This option would have some of the same advantages as a new rail-head at King George’s Avenue and in addition would maximise the efficient use of rail freight – as it would bring freight directly and efficiently to its point of use in the construction site – eliminating the need for double handling of freight and avoiding additional HGV trips on Lover’s Lane. It would also mean that any noise or dust associated with rail freight unloading or loading activities would be contained within the confines of the construction area.

6.7.16 EDF Energy considers this option would further encourage major contractors involved in the construction of Sizewell C to choose a rail option for freight deliveries over road alternatives – offering benefits for the construction programme and the potential for reduced HGV movements. For these reasons EDF Energy's preferred option is to temporarily extend the rail-line into the construction site.

6.7.17 EDF Energy has considered potential route options for such an extension and three route options (red, blue and green) are shown in Figure 6.3.
6.7.18 Two of the routes (the blue and green) would spur off the existing track west of Leiston and route through open countryside into the Sizewell C Main Development Site. The third (red) route would spur off north of Leiston industrial estate.

6.7.19 Each route has potential advantages and disadvantages. The blue and green routes would avoid trains passing residential properties in Leiston, which could be of particular benefit as some freight train movements may need to occur at night. However these routes would also have the greater landscape and visual impacts on the surrounding countryside, including potential impacts on views from Leiston Abbey. The red route is the shortest of the routes with potentially reduced visual impacts.

6.7.20 At the present time EDF Energy considers that either the green or the red route could be the preferred option but the blue route (which is the longest) is not favoured as it would have the greatest visual impact on surrounding countryside and would enter the Sizewell C Main Development Site at EDF Energy’s preferred location for campus accommodation – if progressed this route option could therefore require some redesign of the campus proposals (see the Stage 1 Consultation Document for discussion of site options for campus accommodation).
6.7.21 The routes shown on the map are indicative at this stage and it is anticipated that further work will be undertaken on the alignment and design options for the routes and how they would integrate into the construction area. The land take required for the rail-head within the construction area is expected to be relatively small and could be accommodated within the proposed boundary for the construction area – see the Stage 1 Consultation Document.

6.7.22 Further work on the route options will also take account of a wide range of factors including landscape, heritage, ecology, noise and vibration and residential amenity issues. It will also take account of consultation feedback.

iv. Passing loop at Wickham Market station

6.7.23 The final rail proposal is to provide support to Network Rail to help construct a ‘passing loop’ on the East Suffolk Line between Ipswich and Lowestoft at Wickham Market Station, near the village of Campsea Ashe. Much of the existing East Suffolk line is single track, which significantly restricts its capacity as it can only run trains in one direction at a time.

6.7.24 Adding a passing loop would enable a train running in one direction to wait while another train running in the opposite direction goes past. This would increase the freight capacity of the East Suffolk Line to at least the levels that might be required for Sizewell C (around 5 trains per day) – which would be sufficient for rail to play a major role in moving freight for the Project. The passing loop would be a permanent development and would also have a legacy benefit in improving the reliability of the East Suffolk Line services and enhancing the long-term potential for passenger and rail freight services on the East Suffolk Line.

6.7.25 EDF Energy anticipates that all the proposed work required to construct the passing loop would be on land already owned by Network Rail. Initial discussions with Network Rail suggest that they would support a development of this kind, due to its benefits for passenger services. It is currently anticipated that, were this option to be progressed, Network Rail would be responsible for managing the construction of the loop, with a financial contribution from EDF Energy. Once constructed the loop would form part of the regulated rail network managed by Network Rail.

6.7.26 A map of the location of the proposed loop is shown in Figure 6.4. It is considered that Network Rail may have permitted development rights to construct the loop and would therefore not need to apply for separate planning permission.
6.7.27 EDF Energy will also discuss with Network Rail the need for some smaller scale refurbishment of and changes to the existing branch line between Saxmundham and Leiston to ensure it is able to cope with the increased traffic. This could involve the closure or upgrading of some level crossings to deliver improved journey times for freight trains – if closure of any level crossings was proposed this would be subject to further consultation.

v. Summary of freight by rail

6.7.28 Overall EDF Energy is clear that rail should play an important role in the delivery of freight to support the construction of Sizewell C. EDF Energy’s preference is to extend the Saxmundham-Leiston branch line into the construction site as this will improve the efficiency and productivity of the construction works.

6.7.29 EDF Energy recognises that the noise impacts of rail freight movements may be a potential concern for some local residents and will take account of this, alongside other relevant considerations and other consultation feedback, as proposals in this area are developed. It is envisaged that measures to reduce noise impacts, such as limiting the speed of trains, will be implemented where practical.
6.8 Freight by Road

6.8.1 The previous sections set out the major plans that EDF Energy has to move freight off the roads and on to rail and sea transport. It is anticipated that these proposals would deliver very substantial reductions in the number of HGV movements that would otherwise occur on the local road network.

6.8.2 Despite these proposals, the very large quantities and wide variety of freight required for the Project mean that there would still be a certain amount of freight that could not practically or economically be moved other than by road.

a) Heavy Goods Vehicles

6.8.3 In order to reduce the impact on local residents EDF Energy will agree with Suffolk County Council (SCC) approved HGV routes for all construction traffic. These would avoid local or rural roads as far as is practicable.

6.8.4 It is anticipated that the main approved route to and from the Sizewell C site for HGV traffic would be the A12 and then the B1122 from Yoxford. This was the approved route during the construction of Sizewell B and it avoids vehicles having to travel through Leiston, Saxmundham and most other local towns and villages. This route is shown in Figure 6.5. While this route will apply for the majority of HGV movements, some movements may need to occur on other roads, including SCC’s designated lorry routes – for example where local companies are supplying materials to the construction site.

6.8.5 EDF Energy expects that the majority of HGV road traffic would be coming from the south on the A12 – it has been initially assumed that 85% of HGV traffic would route from the south via the A14 and then A12, with the remainder coming from the north on the A12. This assumption will be kept under review.

6.8.6 In the initial traffic modelling of Sizewell C impacts a number of scenarios of HGV movements have been considered, ranging from between 100 to 300 average HGV deliveries per day to the construction site at peak construction (representing between 200 and 600 two-way HGV movements). HGVs in this context are defined as any vehicles exceeding a maximum gross weight of 3.5 tonnes (maximum allowable total weight when loaded). This is a conservative and robust definition as it includes many vehicles which would normally be categorised as medium goods vehicles (maximum gross weight between 3.5 and 7.5 tonnes).

6.8.7 The fact that actual HGV deliveries to site are likely to fluctuate on a day to day basis will also be taken into account. The “busiest day” in any given construction period could see around 50% more HGV deliveries than the average (and, consequently, a quieter day around 50% less than the average). Therefore, the modelling will also consider scenarios where HGV deliveries are 50% higher than the average 100 to 300 deliveries per day set out above.

6.8.8 HGV movements will be spread across the day. It is anticipated that controls on the number and timing of HGV movements through the local road network will be agreed as part of the planning process for Sizewell C, so that HGV movements are no greater than have been assessed when considering traffic and associated environmental impacts, and to avoid or reduce movements at sensitive hours.
Figure 6.5: Proposed Main HGV Route for Sizewell C Construction Traffic
6.8.9 There are a range of existing uncertainties which will impact on EDF Energy’s final estimates of the scale of HGV movements generated by Sizewell C. These include the final material quantities estimates, the precise time schedule for the sequence of construction works, the final design of the jetty and decisions on the developments which could be made to facilitate additional use of rail for freight deliveries. Further work will be undertaken in all these areas. The figures described above should therefore not be seen as definitive, but rather they represent the current range of assumptions for HGV deliveries at peak construction. EDF Energy is conscious of the strong desirability of reducing HGV movements to reduce noise, air quality and amenity impacts on affected residents and communities. Work will therefore continue on the estimates of HGV movements throughout the pre-application phase for Sizewell C, with the objective of reducing such movements to the extent possible, consistent with the wider requirement for a flexible, efficient and cost-effective construction programme.

b) Light Goods Vehicles

6.8.10 Light goods vehicles (LGVs) in this context represent vans, pickups, 4x4s and related vehicles with a maximum gross weight of up to 3.5 tonnes.

6.8.11 It has been assumed that the construction materials, plant and equipment for the Sizewell C Project will be transported by HGVs whilst LGVs will be used for transporting food and consumables, small items and specialist tools/equipment. LGVs will also include contractors’ fleet vehicles.

6.8.12 As the number of LGVs is not directly related to the tonnage/volume of material required for the Project, an estimate has been made on the number of LGVs which would be generated by the Sizewell C Project by extrapolating the number of LGVs required during the construction of Sizewell B. The figures have been adjusted to reflect that Sizewell C is a twin reactor project.

6.8.13 On this basis, the average number of LGVs arriving at site per day during the construction peak has been estimated to be 170 (340 movements), with the busiest day being some 50% higher than this, i.e. 255 (510 movements).

6.9 Freight Management Facility

6.9.1 In order to support the management of road deliveries to the Sizewell C construction site, EDF Energy is considering the construction of a lorry park which could accommodate around 50 to 100 parking spaces for HGVs. Such a lorry park is known technically as a freight management facility (FMF).

6.9.2 Such a facility could serve a variety of functions, depending on its location. It could assist in allowing a controlled pattern of deliveries to site with reduced movements during peak or sensitive hours on the network. It could provide a space where paperwork and goods can be checked prior to delivery to site, and a location where HGVs are held while they wait to enter the site or in the event of an accident on the local road network which prevented access to the site.

6.9.3 However many of these functions could potentially be achieved via automated monitoring and communication systems which do not require the construction of a dedicated new facility. At the present time, EDF Energy considers that the need for a
new dedicated facility of this kind to support the Sizewell C Project is uncertain and will in part depend on the final anticipated number of HGV movements to site, taking account of our proposals to facilitate sea and rail delivery options.

6.9.4 If a FMF is considered desirable, there are a number of potential places in which it could be located. The preferred option would be to co-locate the lorry parking with one of the southern park and ride areas. This would offer a location close to site and efficiencies associated with co-locating the development with park and ride facilities, as well as reduced environmental impact through development of a single combined site rather than two.

6.9.5 Another option is a site near the A12 junction with the A14 south-east of Ipswich. This could act to hold lorries before they travel through the A12 to the east of Ipswich but would be further from site, which could impact on the predictability of arrival times at the construction site. In relation to these latter sites, EDF Energy is aware that there could be a lasting benefit identified by SCC from the construction of additional lorry parking spaces. This would be to provide a place where container lorries could be held when procedures (known as Operation Stack) are put in place to deal with delays at Felixstowe port.

6.9.6 Site options for a FMF are set out in the Stage 1 Consultation Document.
7. TRAFFIC IMPACTS FROM SIZEWELL C

7.1 Introduction

7.1.1 Earlier sections have explained how, as part of the planning process, EDF Energy is required to assess in detail the likely traffic impacts of Sizewell C, and have summarised the work done to date in this area.

7.1.2 This section sets out the initial view that EDF Energy has reached about the likely traffic impacts of Sizewell C, based on the modelling work conducted to date. This view should be seen as preliminary, bearing in mind that:

- comprehensive traffic modelling has not been completed and a range of further work is planned to improve and refine the model and use it to test different scenarios and time periods; and
- EDF Energy has set out information on the anticipated transport strategy for the development, but this strategy is not firmly fixed and remains subject to consultation and to further project development.

7.1.3 Nonetheless, the initial traffic modelling has considered the peak period in the construction programme and has used a range of relatively conservative assumptions. The modelling is also considering the busiest current period on the local road network. For these reasons EDF Energy considers that the initial findings from the work conducted to date are likely to prove a generally robust assessment of the main potential traffic impacts of Sizewell C.

7.2 Potential Areas of Traffic Impact

7.2.1 EDF Energy recognises that some of the most likely areas of potential traffic impact during the construction of Sizewell C are on the A12 and the B1122 – as this will be the route taken by HGVs as well as many cars and buses associated with the construction workforce. Initial conclusions in relation to impacts in these areas are set out in the following sections.

7.3 The A12

7.3.1 The A12 between Ipswich and Lowestoft would be the main corridor for much Sizewell C related traffic. Much of the A12 is dual carriageway and initial analysis suggests that Sizewell C related traffic would not create capacity or congestion concerns on the large majority of the road, including both dual carriageway and single carriageway sections.

7.3.2 It is recognised that the single carriageway “four villages” section of the A12 through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham is one of the more sensitive stretches of the A12 and that it is an aspiration of many of the residents of these villages to benefit from a bypass. EDF Energy is also aware that this aspiration has support from Suffolk County Council (SCC) and has been publicly linked to the construction of Sizewell C.
7.3.3 EDF Energy is therefore carefully examining whether the traffic impacts of Sizewell C would be likely to justify or require a bypass of some or all the villages in this area. Our view at this time is that a full four village bypass is not possible to justify on this basis.

7.3.4 A key consideration in this area is that the additional traffic generated by the construction and, in due course, operation of Sizewell C would represent only a relatively modest addition to daily traffic flows on this stretch of road, even at peak construction. Current estimates are that the total traffic impact would be in the region of between a 5% and a 15% addition to all-vehicle daily traffic flows during the period of peak construction. By comparison, wider traffic growth, unrelated to the Sizewell C Project, may well prove to be of greater significance to future traffic flows on the A12.

7.3.5 While these estimates will be subject to further detailed work, it is considered that Sizewell C related traffic will not be of a scale which would be likely to cause major changes to traffic or environmental conditions on this stretch of road or justify a major intervention in the form of a bypass.

7.3.6 Similarly, it is not currently anticipated that there will be major impacts in terms of noise and air quality on the four villages or other stretches of the A12 arising from Sizewell C traffic, although this conclusion will be subject to further work.

7.3.7 It is recognised that there is a view that a bypass of the four villages should be built regardless of the Sizewell C Project. It is not for EDF Energy to promote a bypass which could not be justified by or related to the impacts of Sizewell C. But it is relevant in this context to note that the most recent technical study into bypass options, which was commissioned by SCC in 2006, concluded that the combined environmental, landscape and heritage impacts arising from the construction of a full four village bypass would be such that they would not be likely to be deemed acceptable against the tests set by planning policies at that time.

7.3.8 EDF Energy is not aware of changes to relevant planning policies since 2006 which would be likely to change this conclusion. A review of the environmental issues associated with a full bypass has highlighted that the following major considerations, which were identified in the 2006 report, remain valid today:

- Loss and severance of ancient woodland and fragmented woodland sites
- Loss and severance of ancient and species rich hedgerow network
- Severance and loss of floodplain grazing marsh habitat
- High potential for negative impacts upon populations of breeding and wintering birds, reptiles, bats, otter, water vole, brown hare and badger
- Severance and loss of floodplain capacity
- Potential for pollution of watercourses
- Impacts on views in a range of areas including from Marlesford
- Loss of tranquility and remoteness within the floodplain area
- Impacts upon a range of heritage and archaeological sites of interest

7.3.9 Although EDF Energy current views that a full four villages bypass could not be justified by Sizewell C traffic, it is seeking through the transport strategy proposals to
reduce the impact of Sizewell C related traffic on the A12 and through other towns and communities which could be impacted by the Project. The major proposals set out above to use rail and sea for freight deliveries, and park and ride developments during the years of peak construction, are indicative of that commitment.

7.4 Farnham Bend

7.4.1 The narrow bend at Farnham is widely recognised to be the most significant existing issue on the four villages stretch of the A12. It is the area which is closest to capacity and the narrow bend creates a potential safety concern, particularly when two large vehicles are passing at once.

7.4.2 In this area the preliminary conclusions are different to those reached in relation to a full four-village bypass. The assessment is that Sizewell C related traffic would cause some additional capacity constraints/congestion at the Farnham bend at peak network periods, and, in particular, that the additional HGV traffic associated with the Project could exacerbate safety concerns associated with the narrow bend.

7.4.3 For these reasons EDF Energy considers that mitigation measures to improve the position at Farnham bend may be justified by the Project and is therefore inviting views on a number of potential alternative mitigation options for Farnham bend. These are as follows:

a) A Farnham Bypass

7.4.4 A bypass of Farnham has been considered in earlier studies of options for bypassing the four villages. The route considered in the 2006 study ran to the north-west of Farnham. EDF Energy consider s that this would be the most appropriate route for any bypass of Farnham. An indicative alignment for such a bypass is set out in Figure 7.1.

7.4.5 A bypass of Farnham would be approximately 1km in length and comprise a single lane in each direction with accompanying landscaping. At the southern end of the route it would adjoin the existing A12 close to Stratford St Andrew and at the northern end, it would re-join the existing A12 north of Farnham. Details of the bypass and junction arrangements would be subject to further work and consultation if this option were progressed.

7.4.6 A bypass of this kind would remove existing capacity and safety concerns associated with the current bend at Farnham, improving traffic flow and reducing accident risks. Properties close or adjacent to the road in Farnham would benefit from a large reduction in traffic flows through the village.
7.4.7 Equally, it is recognised that there would be some ecology, landscape and heritage impacts associated with constructing a short stretch of road through what is currently an area of farmland and open countryside. EDF Energy considers that these impacts could be reduced to acceptable levels through sensitive design and landscaping.

b) Road Widening at Farnham Bend

7.4.8 An alternative option to improve Farnham bend would be to widen and smooth the existing bend to reduce the potential for traffic congestion at peak times and remove safety concerns associated with its narrowness.

7.4.9 However to implement this option would require the acquisition and demolition of a small number of properties closest to the bend. A number of different schemes of this kind were considered in the 2006 study and could be contemplated. The scheme shown in the Figure 7.2 is the minimum that EDF Energy considers would be required to achieve a satisfactory degree of widening of the bend and would involve the demolition of two properties, including one Grade II listed building.
7.4.10 A larger scheme than the above could offer improved traffic flow but would require greater levels of property demolition.

7.4.11 Were EDF Energy to progress an option for road widening at Farnham bend it would work sensitively and sympathetically with those residents who would need to relocate as a result of the scheme – aiming to ensure a satisfactory alternative solution for all those directly impacted.

7.4.12 A road widening scheme at Farnham bend would have reduced environmental and landscape impacts relative to a bypass. It could be effective in addressing the current safety concerns associated with the bend and improving traffic flow to some degree but it would not have the effect of removing traffic from the village of Farnham.

c) HGV Traffic Controls at Farnham Bend

7.4.13 EDF Energy has considered a limited form of intervention at Farnham bend involving some form of traffic control system to prevent two HGVs passing through the bend at once.

7.4.14 Such a system could be relatively effective in reducing safety risks at Farnham bend and improving the ability of pedestrians and other road users to cross the A12 in this
area. However, this kind of option would have no positive effect on traffic flow through the bend and indeed would act to exacerbate the potential for congestion. As with a road widening scheme, all A12 traffic would continue to route through Farnham. For these reasons EDF Energy considers it to be a less attractive option.

d) Summary of Position on the A12

7.4.15 In summary, EDF Energy is proposing a wide range of measures to reduce the impact of Sizewell C traffic on the A12. These include use of sea and rail options for the delivery of freight, and park and ride developments to reduce traffic during the period of peak construction.

7.4.16 EDF Energy’s current view is that a full bypass of the four villages section of the A12 is not likely to be justified by the additional traffic associated with Sizewell C. Any such bypass would also have significant environmental impacts and would bring benefits to some but would be to the detriment of others.

7.4.17 EDF Energy currently considers that measures to improve the situation at Farnham bend could be justified by extra Sizewell C traffic, in particular additional HGVs. A number of mitigation options for Farnham bend have been presented and views are invited on the case for intervention and the options presented. EDF Energy recognises that there is no simple solution to this issue and that all options have some advantages and disadvantages. Careful note will therefore be taken of responses to consultation on the options set out above.

7.5 Road Traffic Impacts on the B1122

7.5.1 As noted in section 6.8, it is anticipated that the B1122 will be the approved HGV route for traffic between the A12 and the Sizewell C construction site. It will also be the route taken by some cars and buses.

7.5.2 Current traffic flows on the B1122 are relatively modest and much lower than on the A12. As such, Sizewell C traffic is not likely to cause any capacity or congestion problems on most of the B1122. It is, however, considered that the junction of the A12 with the B1122 at Yoxford is likely to require improvement to ensure a smooth flow of traffic and avoid disruption to flows on the A12. More detailed proposals will be presented at a future stage of consultation but it is envisaged that a roundabout could be required.

7.5.3 It is also recognised that the proportional impact of Sizewell C traffic would be much greater on the B1122 than on the A12, or indeed other local roads. EDF Energy recognises the potential for this traffic to cause adverse noise and amenity effects to a relatively small number of properties located adjacent to the B1122 and to the residents of Theberton. Through the consultation process EDF Energy will consult with the residents of these properties and the village of Theberton to discuss the forms of mitigation which may be most appropriate to their circumstances and the impacts of Sizewell C. Any specific proposals in this area will be subject to further consultation.
7.6 Other Road Traffic Impacts from Sizewell C

7.6.1 The process of examining and assessing the likely traffic impacts of Sizewell C will continue throughout the pre-application consultation process. As the proposals develop, and decisions are made on the size, nature and location of any associated development, this will effect on the precise traffic impacts to be expected. As noted previously, EDF Energy will also continue to improve and refine the traffic modelling which will inform its position.

7.6.2 The sections above have discussed likely impacts on areas of the A12 and the B1122. At the present time, although there will be some additional traffic on many local roads and through local towns and villages such as Leiston, it is expected that the operation of most parts of the local road network will not be materially affected by Sizewell C construction traffic.

7.6.3 One reason for this is the range of different shifts that will operate during the construction of Sizewell C and which will act to spread workforce-related traffic through the day and will often avoid network peak periods. Another reason is the control of movements which will be achieved through plans for defined HGV and bus routes and for the use of park and ride facilities during peak construction. A third reason is the major plans that have been set out for using sea and rail options for moving freight.

7.6.4 These conclusions remain preliminary and subject to the further transport assessment and modelling work set out in this document. EDF Energy also recognises that while assessments of the congestion and traffic capacity impacts of Sizewell C are important, traffic-related impacts in terms of noise, air quality and wider severance/amenity can be as, if not more, important to local residents. These impacts will continue to be assessed in detail throughout the pre-application consultation phase for Sizewell C.

7.6.5 EDF Energy may, therefore, bring forward proposals for additional highway works (e.g. junction improvements) or mitigation where further work on either traffic capacity or traffic related environmental impacts suggests this would be required to appropriately manage or mitigate impacts in line with the national policy guidance for projects such as Sizewell C.
8. FURTHER TRANSPORT ASSESSMENT WORK

8.1 Transport Work Through the Pre-application Phase

8.1.1 Following Stage 1 consultation and through the remainder of the pre-application consultation phase up to submission of the Development Consent Order application, transport assessment work will continue to be progressed – with further regular liaison with Suffolk County Council and the Highways Agency.

8.1.2 This work will cover a wide range of areas – the anticipated main elements of this are set out below:

- Further development, refinement, scenario testing and agreement of the traffic model in the light of responses to the Stage 1 and subsequent consultation and EDF Energy’s emerging detailed plans for the development.
- Detailed highway link and junction capacity analysis - along with analysis and design of potential mitigation measures – where appropriate.
- Development of a detailed freight management strategy for the Project – with further detail on the use of rail and sea for freight movements, proposed infrastructure and measures to manage remaining freight movements by road.
- Detailed analysis of the scope for construction and operational workers to walk and cycle to the Sizewell C site and consideration of any enhancements to local infrastructure to facilitate this.
- A road safety assessment to examine the existing road safety of the network relative to national benchmark figures for accident rates. The assessment will then consider the impact of Sizewell C development traffic and propose mitigation measures as necessary.
- Highway network condition surveys and a review of highway maintenance requirements in the light of the transport proposals.
- Consideration of detailed traffic management and contingency/emergency planning arrangements.
- An assessment of the transport impacts of Sizewell C once the construction phase is complete and the power station is operational.
- Preparation of travel plans, transport strategies and a full transport assessment of the development, including preparation of all related documentation and material required for a full transport assessment.

8.2 Development Consent Order Application

8.2.1 It is currently anticipated that the application for development consent for Sizewell C would contain, in relation to transport issues, the following elements:

- The Transport Assessment, to include:
  - The overall Transport Strategy
- The baseline transport data
- Comprehensive trip generation spreadsheet and report
- Trip distribution methodology (gravity model) and results
- Parking Strategy
- Walking and Cycling Strategy
- Bus Strategy
- Road safety study
- Highway mitigation study

- Freight Management Strategy, to include:
  - Jetty proposals
  - Rail Strategy
  - Management of HGVs

- Travel Plan;
- Environmental Statement – Transport Chapter for the Sizewell C Main Development site;
- Environmental Statement – Transport Chapter(s) for the Associated Development Sites; and
- Status of any agreements with the relevant highway authorities.
APPENDIX 1A – LOCATIONS OF TRAFFIC COUNTS

A. May 2011 Survey Locations

The following surveys were undertaken in May 2011

i. Beccles area

- A145 Market Street/Smallgate – 4 arm signal controlled
- A145 Station Road/Market Street/Newgate - 4 arm signal controlled
- A145 Station Road/George Westwood Way/Gosford Road – 4 arm mini roundabout
- A145 Hungate/Blyburgate/Exchange Square – 3 arm priority
- A145 Newgate/Blyburgate – 3 arm priority
- A145 London Road/Peddars Lane/St Marys Road – 4 arm signal controlled
- A145 Blyburgate/Peddars Lane – 3 arm signal controlled
- A143 Yarmouth Road/A146 Norwich Road - 3 arm roundabout
- A146 Norwich Road/A145 George Westwood Way - 4 arm roundabout
- A146 Norwich Road (west of A145) – automatic traffic count
- A145 George Westwood Way (south of A146) – automatic traffic count
- A145 South Beccles – automatic traffic count

ii. North of Saxmundham and Leiston

- A145/B1123 (Bulcamp) – 3 arm priority
- A145/A12 (Bulcamp) – 3 arm priority
- A12/A1095 (Bulcamp) – 3 arm priority
- A12/B1125 Angel Lane (Blythburgh) – 3 arm priority
- B1125 Dunwich Road/B1387 (Blythburgh) – 4 arm priority
- A12 London Road/A144 (Darsham) – 3 arm priority
- A12 London Road/Willow Marsh Lane – 3 arm priority
- A12 London Road between Willow Marsh Lane and A144 (Darsham) – automatic traffic count
- A12 Brook Street/B1122 Middleton Road (Yoxford) – 3 arm priority
- A12 Brook Street/A1120 High Street (Yoxford) - 3 arm priority
- B1125 South of Westleton – automatic traffic count
- A1120 West of Peasenhall – automatic traffic count
- A144 South of Bramfield – automatic traffic count
- A145 North of Blythburgh and B1123 – automatic traffic count
- A12 North of Blythburgh and A1095 – automatic traffic count
- A12/B1121 Main Road (Dorley’s Corner) – 3 arm priority

### iii. Leiston

- B1122 Leiston Road/B1125 (Theberton) – 3 arm priority
- B1122 south of Onner’s Lane (Theberton) – automatic traffic count
- B1122 Abbey Road/Lover’s Lane/Abbey Lane – 4 arm priority
- B1122 Station Road/Main Street/B1119 Waterloo Avenue/B1069 Park Hill – 4 arm signal controlled
- B1122 Main Street/High Street/Valley Road – 3 arm priority
- B1122 High Street/Cross Street/Sizewell Road – 4 arm signal controlled
- B1122 High Street/Aldeburgh Road/Kings Road – 3 arm priority
- B1069 Haylings Road/Kings Road – 3 arm priority
- King Georges Avenue – automatic traffic count
- Lovers Lane – automatic traffic count
- King Georges Avenue/Lovers Lane – 3 arm priority
- Sizewell Power Station access road – automatic traffic count
- B1119 Saxmundham Road – automatic traffic count
- B1069 Leiston Road/B1353 Aldringham Lane (Knodishall) – 3 arm priority

### iv. Saxmundham

- A12/B1119 Rendham Road – 4 arm priority
- B1121 High Street/South Entrance/B1119 Church Street – 4 arm signal controlled
- B1119 West of Saxmundham – automatic traffic count

### v. South of Saxmundham and Leiston

- A12/B1121 – 3 arm priority
- A12/A1094 – 3 arm priority
- B1078 Main Road/B1116/A12 north-east on-slip (Wickham Market) – 4 arm roundabout
- B1078/A12 south-west off-slip (Wickham Market) – 3 arm priority
- B1078/A12 north-east off-slip/A12 south-west on-slip (Wickham Market) – 4 arm priority
- B1078 Ash Road/Orford Road/B1069 Woodbridge Road (Tunstall) – 3 arm priority
- B1078 Orford Road/B1069 Snape Road (Tunstall) – 3 arm priority
- A1094 Farnham Road/B1069 Church Road (Snape) – 3 arm priority
- A1094 Aldeburgh Road/B1069 Snape Road – 3 arm priority
- B1069 Snape Road (south-west of Knodishall) – automatic traffic count
- B1122 Leiston Road (south-east of Aldringham) – automatic traffic count
- A12 Main Road/Marlesford Road/Unnamed Road (Marlesford) - 4 arm staggered crossroads
- A12 Main Road/Bell Lane (Marlesford) - 3 arm priority
- A12 Main Road/Church Road (Little Glemham) - 3 arm priority
- A12/Mill Lane (Stratford St Andrew) - 3 arm priority
- A12/The Street (Farnham) - 2 x 3 arm priority
- A12/Low Street (Farnham) - 3 arm priority
- A12 West of Marlesford – automatic traffic count
- A12 East of Farnham – automatic traffic count
- B1078 West of Wickham Market – automatic traffic count
- B1069 South of Snape – automatic traffic count
- B1079 East of Grundisburgh – automatic traffic count

**B. Additional Surveys Proposed**

The May 2011 survey information will be augmented with the following junction turning counts:

- A1066 / A143
- A12 / A1152
- A14 / B1078
- A140 / A1120
- A140 / B1117
- A143 / A144
- A143 / A146
- B1116 / B1119
- B1117 / B1118
- B1332 / A143

The following Automatic Traffic Count (ATC) sites will allow an outer cordon of count information to be used in conjunction within the already comprehensive information collected in the immediate vicinity of the study area.
- A1066 – West of Diss
- A1152 – Between Woodbridge and Tunstall
- A1214 – North Ipswich
- A140 – Diss to junction A14
- A143 – North of Beccles to Diss
- B1062 – Between Bungay and Beccles
- B1069 – Between Tunstall and Snape
- B1078 – Between A140 and Wickham Market
- B1116 – Between Dennington and Framlingham
- B1117 – Between A140 and B1118
- B1118 – Between Diss and Dennington
- B1121 – West of Saxmundham
- B1125 – Between Blythburgh and Middleton
- B1332 – Norwich and Bungay
- B1527 – West of B1332