nationalgrid

Bramford to Twinstead Tee Connection Project

Connection Options Report

Consultation Feedback

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1 INTRODUCTION

Purpose of document

1.1 National Grid is currently undertaking a comprehensive pre-application consultation programme on the Bramford to Twinstead Tee Connection Project.

1.2 This Feedback Report presents the results of consultation on the findings of the Connection Options Report[1] for the Project. The consultation ran for eight weeks from 29th May to 27th July 2012. This Feedback Report sets out National Grid's response to the representations made in the consultation and how representations have influenced the selection of the preferred alignment to be taken forward to detailed design.

1.3 The consultation invited the views of statutory and non-statutory consultees and local communities in the vicinity of the proposed works, on options for a 400kV connection between Bramford substation in Suffolk (west of Ipswich) and Twinstead Tee in Essex (south of Sudbury). The connection options under consideration were set out in the Connection Options Report which assessed alternative indicative alignments for overhead lines and also considered the potential for undergrounding different sections of the route. The report identified an interim alignment, comprising an overhead connection with two underground cable sections, one in Dedham Vale AONB and the other in the Stour Valley.

1.4 In preparing this Feedback Report, consideration has been given to guidance and advice notes prepared by the Government, by the Planning Inspectorate and by its predecessor the Infrastructure Planning Commission.

[1] National Grid : Bramford to Twinstead Tee Connection – Connection Options Report : May 2012

Structure of the Feedback Report

1.5 This report is structured as follows:

- Chapter 2 – provides the background to the project and consultation to date. It also sets out the duty to consult under the Planning Act 2008[2] and National Grid's commitment to engagement;
- Chapter 3 – presents a summary of the options appraisal and its conclusions, which were the basis for the consultation;
- Chapter 4 – outlines the consultation arrangements for the findings of the Connection Options Report;
- Chapter 5 – describes how the quantitative and qualitative analyses of representations were managed;
- Chapter 6 – sets out the representations received from "prescribed bodies", including local authorities, parish councils and statutory bodies and explains where representations received from the local community, including persons with an interest in the land, local bodies, Community Forums, Thematic Groups and the general public have been addressed;
- Chapters 7 to 12 – summarise, by study area, the issues raised in representations from all parties relating to the indicative alignments, National Grid's responses to them and how these have been taken into account in taking the Project forward;
- Chapter 13 – summarises general issues raised in representations which would not inform comparison of indicative alignments but which may be relevant to the project as a whole;
- Chapter 14 – concludes the report and identifies the next steps in the process.

[2] Planning Act 2008 : 2008 Chapter 29

2 BACKGROUND

Project development and consultation to date

2.1 The need case[3] for the project explained that the technical limits of the existing transmission infrastructure will be breached over the next few years as new power generation requires connections to the transmission system. To maintain compliance with the National Electricity Transmission System Security and Quality of Supply Standards (NETS SQSS) additional transmission capacity in the region is required.

2.2 The Strategic Optioneering Report 2009[4] concluded that the option of constructing a new 400kV overhead transmission line between Bramford and Twinstead Tee would achieve a balance between National Grid's technical, economic and environmental obligations and should be the preferred option. In response to issues raised in the Stage One Consultation, a review of strategic options[5] tested whether, on the basis of the latest available information, the selection of a connection option based upon the provision of a new overhead transmission line between Bramford and Twinstead Tee was robust.

2.3 The review confirmed that constructing an overhead transmission line between Bramford and Twinstead Tee would best meet National Grid's technical, economic and environmental obligations and should be the preferred option to take forward for further investigation, taking National Grid's statutory duties into account.

2.4 Having identified that a new 400kV connection is needed between Bramford and Twinstead Tee, a Route Corridor Study[6] was commissioned to identify possible route corridors between the connection points at Bramford and Twinstead Tee and to assess how these performed against National Grid's statutory environmental obligations. This identified four route corridors, all of which would be technically feasible.

[3] National Grid : Bramford to Twinstead Connection : Need Case for the East Anglia Region : May 2011
[4] National Grid plc : Bramford to Twinstead 400kV Overhead Line Project – Strategic Optioneering Report : October 2009
[5] National Grid plc : Bramford to Twinstead Tee Connection Project – Review of Strategic Options Report : June 2011
[6] TEP : Bramford to Twinstead 400kV overhead line project : Route Corridor Study for Public Consultation : October 2009

2.5 The findings of the Route Corridor Study formed the basis for the extensive Stage One Consultation exercise. The results of which, together with National Grid's responses, were set out in the Stage 1 Feedback Report[7].

2.6 The Selection of Preferred Corridor Report[8] assessed which corridor should be preferred, based on a range of technical, environmental, and other criteria, and taking account of representations received during the Stage 1 Consultation. It concluded that Corridor 2 should be selected as the basis for developing a scheme for an overhead line connection between Bramford and Twinstead Tee and that further studies should be undertaken to:

- evaluate whether the undergrounding of sections of the proposed 400kV overhead lines may be appropriate to mitigate the potential impacts of the scheme on sensitive locations;
- determine the treatment of the Hintlesham sections of the route (Corridor 2A or 2B);
- determine the appropriate location of the new substation west of Twinstead Tee.

It also proposed further consultation on the above. The announcement of the preferred corridor was made in July 2011.

2.7 Following the preferred corridor announcement, National Grid has undertaken further technical and environmental studies. "Indicative alignments" for overhead line solutions were developed and the potential effects of these alignments assessed to determine the least environmentally constrained "interim alignment". The case for undergrounding was also assessed taking into account the landscape and visual impacts which would be associated with this interim alignment, together with the environmental, technical and cost implications of underground cable solutions.

2.8 Three Thematic Groups and four Community Forums were established. These have provided information and advice and have commented on the information which National Grid has gathered to use in its further studies.

2.9 The findings of the studies are discussed in the Connection Options Report. This document provided the basis for the Stage Two Consultation, the details of which are

[7] National Grid : Bramford to Twinstead Tee Connection Project – Feedback report on Stage One Consultation : June 2011
[8] National Grid plc : Bramford to Twinstead Tee Connection Project – Selection of Preferred Corridor : June 2011

provided in Chapter 4. A separate consultation exercise will consider alternative locations for the new substation required west of Twinstead.

Consultation under the Planning Act 2008

2.10 Pre-application consultation is a principal element of the planning system introduced by the Planning Act 2008 (the Act).

2.11 The Act imposes certain duties on the promoters of Nationally Significant Infrastructure Projects (NSIPs) to consult those who would be directly affected by the project, people with an interest in the land in and around the site, the local community, local authorities and a range of statutory bodies and other consultees. This consultation must be carried out before an application for a Development Consent Order (DCO) is submitted, and the intention is that feedback from the consultation should be used to help shape the project. While the Act specifies particular requirements for formal consultation, the importance of informal consultation is recognised in related guidance and has been embraced by National Grid in its extensive programme of engagement and consultation.

2.12 Section 37 (3) (c) of the Act requires a Consultation Report to accompany a DCO application. The Consultation Report provides the necessary evidence required to demonstrate to the satisfaction of the Secretary of State that the applicant has complied with the statutory pre-application consultation requirements as set out in sections 41 - 50 of the Act and Regulations 10 and 11 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009[9] and in doing so has had regard to government guidance. The Consultation Report will also record and provide evidence of any 'informal' (i.e. non statutory consultation) undertaken as part of the project development process. Hence the findings of the present Feedback Report will form one of the inputs to the Consultation Report.

2.13 When a DCO application is submitted to the Secretary of State, the Planning Inspectorate will assess it against section 55 of the Act. In reaching a decision section 55 (4) requires the Secretary of State to have regard to:

- the consultation report received under section 37 (3) (c),

[9] Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 : SI2009-2263

- any adequacy of consultation representation received by it from a local authority consultee; and
- the extent to which the applicant has had regard to any guidance issued under section 50.

National Grid's Commitment to Engagement

2.14 Under Section 38 and Schedule 9 of the Electricity Act 1989[10], National Grid has a duty, when putting forward proposals for new development, to have regard to the desirability of the preservation of amenity: the natural environment, cultural heritage, landscape and visual quality, as well as the impact of our works on communities. National Grid's 'Stakeholder, Community and Amenity Policy'[11] sets out a commitment to meet this duty and how as a company National Grid will address its duties under the Planning Act 2008 with regard to community engagement. Furthermore, National Grid's duties under Schedule 9 of the Electricity Act are incorporated into the 'Stakeholder, Community and Amenity Policy'.

2.15 Stakeholder and public involvement is an important component of the planning process. Legislation and government guidance aim to ensure that the public, local communities, statutory and other consultees and interested parties have an opportunity to have their views taken into account in the planning process.

2.16 In recent years, increased importance has been placed on the need for effective and inclusive community involvement in the planning system, in particular following the Planning and Compulsory Purchase Act 2004[12]. The emphasis on community involvement is a significant element of the National Planning Policy Framework[13] which in its core planning principles states that the planning system should empower local people to shape their surroundings.

2.17 In bringing forward this Project, National Grid has aimed to ensure effective, inclusive and meaningful engagement with the local community, statutory and other consultees, and interested parties.

[10] Electricity Act : 1989 c29
[11] National Grid : National Grid's commitments when undertaking works in the UK - our Stakeholder, Community and Amenity Policy : February 2010
[12] Planning and Compulsory Purchase Act 2004 : 2004 Ch5
[13] Communities and Local Government (CLG), National Planning Policy Framework, March 2012.

Commitments in the Selection of Preferred Corridor report

2.18 The Selection of Preferred Corridor report included a commitment that "*further studies should be undertaken to evaluate whether the undergrounding of sections of the proposed 400kV overhead lines may be appropriate to mitigate the potential impacts of the scheme on sensitive locations, including within the AONB and Stour Valley, and be subject to further consultation at Stage 2*."

2.19 A further commitment stated that "*further studies should be undertaken to determine the treatment of the Hintlesham sections of the route (Corridor 2A or 2B), to be subject to additional consultation at Stage 2*."

2.20 The Selection of Preferred Corridor report also committed to further studies to be undertaken to determine the appropriate location of the new substation west of Twinstead Tee, to be subject to additional consultation at Stage 2. This will be the subject of separate reporting.

3 OPTIONS APPRAISAL

Summary of Options Appraisal Approach

3.1 The approach adopted for the options appraisal, reported in the Connection Options Report, has included a number of stages:

- establishing the study areas – dividing the route corridor into sections based on landscape character;
- identification of potential indicative overhead line and underground cable alignments in each study area;
- selection of least constrained interim overhead line alignment in each study area, using options appraisal techniques;
- assessment of the case for undergrounding in each study area based on landscape and visual considerations; undergrounding costs and the environmental consequences of undergrounding;
- drawing conclusions on the most appropriate alignment (overhead or underground) in each study area;
- considering how these alignments may be assembled to form a feasible connection between Bramford and Twinstead Tee.

3.2 The need to identify the least constrained overhead option prior to considering the merits of undergrounding arises because it is necessary to compare an underground option with the overhead option which would have least environmental impact i.e. the "best" overhead option.

Conclusions of Options Appraisal

3.3 In summary, the appraisal recommended that the following options for the connection should be taken forward:

- Study Area AB – Bramford/Hintlesham – the Corridor 2B southern alignment – this would involve constructing a new overhead line from Bramford substation to the south of the existing line, linking to it to the north east of Hintlesham Wood in order to use its alignment to pass through the woodland, then running to the south of the existing line. In order to permit this, the existing 400kV overhead line would be routed onto a new alignment north of Ramsey Wood, rejoining the existing line near Clay Lane;

- Study Area C - Brett Valley - a new overhead line alignment to the south of the existing line;
- Study Area D – Polstead - a new overhead line alignment to the south of the existing line;
- Study Area E – Dedham Vale AONB – an underground cable section from Heath Road, Polstead Heath to Leavenheath (4.2km);
- Study Area F – Leavenheath/Assington - a new overhead line alignment to the south of the existing line;
- Study Area G – Stour Valley - an underground cable section from west of Dorking Tye to the Bramford-Braintree-Rayleigh overhead line south of Twinstead Tee (3.8km).

3.4 In this form, the connection would involve about 21km of overhead line and 8km of underground cable.

3.5 The Consultation sought comments on the findings of the appraisal and, in particular, on options for the Bramford/Hintlesham area (Corridors 2A and 2B) before confirming the preferred alignment for the whole connection. The Connection Options Report recognised that, if the consultation representations presented additional information which would support different conclusions for one or more of the study areas, then further consideration would be given to this information, and the findings of the report reviewed, before confirming the preferred alignment to be taken forward to detailed design.

4 CONSULTATION ARRANGEMENTS

Stage 2 Statement of Community Consultation

4.1 Consultation on the Connection Options Report forms part of the Stage Two Consultation programme. The Statement of Community Consultation[14] (SOCC) set out how National Grid proposed to carry out that consultation. It was prepared in consultation with Babergh District Council, Mid Suffolk District Council, Suffolk Coastal District Council, Braintree District Council, Suffolk County Council and Essex County Council and takes account of their comments. It has also been informed by relevant government guidance.

4.2 The Stage Two Consultation incorporates further consultations with local communities and interested parties living in the vicinity of the proposed connection to develop a route alignment within the preferred corridor. A final decision on the preferred route alignment will only be taken after feedback obtained at this stage has been taken into account.

4.3 The SOCC identified three important issues which are fundamental to informing the detailed connection design. These are:

- a commitment to consider the merit of undergrounding along each section of the route;
- the selection of a preferred corridor route around Hintlesham, either option 2A or 2B;
- the selection of a preferred substation site west of Twinstead.

4.4 The objectives of the Stage Two Consultation activities are:

- to engage and consult publicly on the issues relevant to route alignment, in accordance with best practice consultation processes;
- to engage and consult on other related project issues;
- to facilitate consultation feedback to inform National Grid's decisions;
- to ensure National Grid delivers a compliant, robust consultation programme to support its application for Development Consent;

[14] National Grid : Bramford to Twinstead Tee 400kV Connection Project – Consultation Strategy : November 2011

- to communicate National Grid's role in providing infrastructure to support the UK electricity market and the provision of future low carbon generation.

Consultation programme

4.5 Consultation on the Connection Options Report ran for eight weeks from 29th May to 27th July 2012. Representations received after the closing date, but before the finalisation of the present Feedback Report have been incorporated in the latter. The period for making representations was extended to eight weeks in response to a request from the local authorities.

Prescribed bodies

4.6 Schedule 1 to the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009[15] sets out those bodies who should be consulted under section 42(1)(a) of the Planning Act 2008. These bodies have also been contacted during the current informal consultation stages. Those prescribed bodies who were consulted on the findings of the Connection Options Report are set out in Appendices A, B and C.

Local authorities

4.7 Those local authorities which should be consulted for the purposes of section 42(1)(b) of the Planning Act 2008 are set out in section 43 of the Planning Act. The local authorities affected by the proposals are Essex and Suffolk County Councils and Babergh, Braintree and Mid Suffolk District Councils. These authorities have been consulted throughout the informal consultation period.

4.8 Local authority officers were contacted by email on the 29th May 2012 with a copy of the press release, the Executive Summary and the full version of the Connection Options Report.

4.9 A hard copy of the Connection Options Report and its Executive Summary was also hand delivered to the local authority offices on 29th May 2012. A meeting was held with officers from the affected local authorities[16] on 1st June 2012. The arrangements for consultation were confirmed and the authorities indicated that they planned to co-

[15] Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 : SI 2009 - 2264

[16] Mid Suffolk District Council was not represented

ordinate their representations. A number of issues and points of clarification were raised at the meeting, including:

- the cost of sealing end compounds;
- the cost of undergrounding the section of the connection between the sections where the use of underground cables was proposed;
- whether the existing 400kV overhead line could be placed underground through the AONB and what the consents process would be;
- whether a landowner could prevent the installation of underground cables;
- whether more information was available regarding the use of two, rather than three, cables per phase;
- why the width of the construction swathe for underground cables varied;
- whether horizontal directional drilling would be used.

These issues are addressed in Chapter 13.

4.10 All County and District Councillors were sent a covering letter and a hard copy of the Executive Summary by post on 29th May 2012.

Statutory bodies

4.11 The three statutory advisers to the Government are English Heritage, the Environment Agency and Natural England. These bodies were sent a covering letter and a hard copy of the Connection Options Report on 29th May 2012.

Parish Councils

4.12 Thirty three parish councils fall within the Consultation Zone. These are listed in Appendix B.

4.13 Each Parish Council was sent a full copy of the report and its executive summary on 29th May 2012.

Other prescribed bodies

4.14 Each of the other prescribed bodies in Appendix C was sent a covering letter and a hard copy of the report on 29th May 2012.

Persons with an interest in land

4.15 Those categories of persons with an interest in land who must be consulted with under section 42(1)(d) are set out in section 44 of the Act. At this informal consultation stage (and given the state of development of the project) it is not possible to identify all such interests. However, the owners and occupiers of land within the preferred route corridor were identified, together with the owners and occupiers of land outside the previously identified corridor, where this might be affected by the indicative underground cable route. Particular efforts were made to contact the latter group given that they might not necessarily have been directly involved in earlier stages of the project. A letter was sent to all of these parties, alerting them to the consultation and inviting them to respond by one of the recognised ways (see paragraph 4.35). Where individuals met with the company's land agents and raised issues concerning the potential effect of the project on their land or operations, these were noted and fed back to the project team. These parties were invited to submit representations in one of the recognised ways and representations received are included in those identified in Chapters 7 to 13.

4.16 A sample letter is attached as Appendix E.

Local Community and Thematic Groups

4.17 Consultation with the local community has involved both local bodies (including the interest groups established in response to the project) and local residents and businesses, using a variety of contact methods and media. Additional information has also been obtained from Thematic Groups which were established to provide technical advice and guidance.

Local bodies

4.18 National Grid has consulted with a number of other bodies and individuals who are not prescribed bodies as defined in Schedule 1 of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009. It is considered to be good practice to seek the views of those with particular interests in the local area.

4.19 Those local bodies who were sent a covering letter and a hard copy of the Executive Summary by post on 29th May 2012 are listed in Appendix D.

Community Forums

4.20 Community Forums were established to enable direct consultation with representatives from affected communities and stakeholders who have expressed interest in active participation in the consultation process.

4.21 National Grid set up four Community Forums (Hintlesham/Chattisham, Hadleigh, Polstead/Dedham Vale and Twinstead) made up of representatives from local parish councils, community groups and local residents along the preferred corridor. The groups are intended to be as inclusive as possible, and include representatives from all interested parties, ranging from elected councillors to representatives from 'hard to reach' groups.

4.22 Each Community Forum is chaired by the same independent chairman to ensure consistency. Members have been asked for their views on the key areas of consultation and are able to review the findings of the thematic groups providing specialist technical advice.

4.23 Forum members are able to challenge and review decisions made by National Grid and the feedback and issues raised are recorded and responded to. Where representations had a direct bearing on the decisions being taken at this stage in the project, the feedback received has been taken into account in developing the proposals.

4.24 Community Forum members were asked for their views on the main areas of consultation and to consider discussions held with the Thematic Groups (see below) and other sources of specialist technical advice on aspects of the environment. Community Forum members provided specific input based on local knowledge and values. This input and issues raised were recorded and considered by the project team in developing the interim alignment.

4.25 Community Forums met on 18th, 19th, 20th and 21st June 2012 to consider the Connection Options Report and to seek clarification of issues as appropriate. The members of the Community Forums were encouraged to respond to the Connection Options Report through the normal public channels.

Public Drop-in Sessions

4.26 Public information events were held in January and February 2012 to provide an update on the project and to give the public an opportunity to view and comment on the environmental baseline information gathered to date and to identify any further points they considered to be of particular importance or value in their local area. This information was used in developing indicative alignments and to inform preparation of the Connection Options Report.

4.27 These events, which were attended by over 250 people, were held at the following venues between 2pm and 8 pm:

- Stoke by Nayland Village Hall 27th January 2012
- Hadleigh Town Hall 28th January 2012
- Twinstead Village Hall 31st January 2012
- Castle Hedingham Village Hall 1st February 2012
- Hintlesham and Chattisham Community Hall 2nd February 2012

Public Information

4.28 A consultation zone was established, extending for at least 1km from the outer edge of the preferred corridor. A Project Newsletter, setting out the findings of the Connection Options Report, was directly mailed to all properties (residential and businesses) and all parish councils included within this zone (whether all or in part), with all being invited to continue to participate in the ongoing public consultation.

4.29 The Executive Summary of the Connection Options Report was available at the locations specified below, on the project website and was sent to anyone requesting a copy.

4.30 The Connection Options Report itself was available on the project website and at the following locations:

- National Grid, Company Secretariat Office, 1 – 3 Strand, London, WC2N 5EH (Opening Hours: 08:30 to 16:30 Monday to Friday)
- Babergh District Council, Corks Lane, Hadleigh, Ipswich, Suffolk, IP7 6SJ (Opening Hours: 09:00 to 17:00 Monday to Thursday and 09:00 to 16:30 Friday)

- Braintree District Council, Causeway House, Braintree, Essex, CM7 9HB (Opening Hours: 09:00 to 17:30 Monday to Thursday and 09:00 to 17:00 Friday)
- Mid Suffolk District Council, 131 High Street, Needham Market, Ipswich, Suffolk, IP6 8DL (Opening Hours: 08:30 to 17:00 Monday to Friday)
- Suffolk Coastal District Council, Melton Hill, Woodbridge, Suffolk, IP12 1AU (Opening Hours: 08:45 to 17:15 Monday to Thursday and 08:45 to 16:45 Friday)
- Suffolk County Council, Endeavour House, 8 Russell Road, Ipswich, Suffolk, IP1 2BX (Opening Hours: 08:30 to 18:00 Monday to Friday and 09:00 to 13:00 Saturday)
- Essex County Council, County Hall, Market Hall, Chelmsford, Essex, CM1 1QH (Opening Hours: 08:30 to 17:30 Monday to Friday and 08:30 to 17:00 Saturday)
- Local libraries:
    - Great Cornard Library
    - Hadleigh Library
    - Halstead Library
    - Suffolk CC Mobile Library Service covering Mid Suffolk
    - Essex Mobile Library Service covering Twinstead, Great Yeldham, Alphamstone, Halstead, Wickham St. Paul and The Hedinghams.

4.31 Representations could be made in a number of ways:

- by email to bramford-twinstead@uk.ngrid.com
- by writing to the freepost address at Freepost National Grid Connections
- by filling out the comments form on the project website www.nationalgrid.com/bramford-twinstead
- by telephoning 0800 377 7340

Public Events

4.32 Two events for the specific consultation on options in the Burstall/Hintlesham area were held on 28th June 2012 at Hintlesham and Chattisham Community Hall and on 4th July 2012 at Burstall Village Hall. These took place between the hours of 2pm-

8pm. Feedback forms were available at the events for members of the public to leave written representations or to send to the Freepost address. The number of attendees was 64 and 58 respectively.

Thematic Groups

4.33 A separate programme of Thematic Groups was developed to engage and consult with organisations with specialist expertise in environmental aspects that are relevant to the project. The three groups were established to consider Landscape and Views, Ecology and Cultural Heritage issues. These Thematic Groups were established to allow effective engagement with the wide range of organisations with responsibilities for these particular aspects of the environment. The issues discussed in these Thematic Groups have been reported to the Community Forums for discussion and review.

4.34 Membership of Thematic Groups is primarily from nominees of local planning authorities and their partnership organisations such as Dedham Vale AONB and Stour Valley Project and also from agencies with statutory responsibilities such as Natural England, Environment Agency and English Heritage. Local interest groups, including Suffolk Wildlife Trust, RSPB, CPRE Essex, CPRE Suffolk, Dedham Vale Society and the Suffolk Preservation Society are also represented. Observers from Community Forums or action groups often attend Thematic Group meetings.

4.35 The primary purpose of each Thematic Group is to advise on the scope and methods of assessment of each aspect of environmental value; to review survey findings presented; and to discuss and advise on the evaluation of survey findings and appropriate actions.

4.36 A combined meeting of the Thematic Groups was held on 27th June 2012 to consider the findings of the Connection Options Report and to seek clarification of issues as appropriate.

5 RESPONSE MANAGEMENT

Quantitative

5.1 Dialogue by Design, a specialist market research company, was commissioned to analyse and summarise the representations received in response to the Consultation, including feedback forms, letters and emails. This analysis was used to ensure that all issues raised in representations were captured for consideration by the project team. Quantitative analysis did not inform part of the decision making process.

5.2 After 3G Communications, who manage the consultation process for National Grid, had logged the representations into the stakeholder tracker system, they were transferred to an electronic analysis system managed by Dialogue by Design. Representations received in letters, emails, telephone conversations, the feedback form, or through other mechanisms were typed into the analysis database verbatim, to facilitate analysis and to ensure consistency when interpreting issues.

5.3 Working closely with the project team, the analysts prepared an initial list of anticipated themes and sub-themes - the coding framework. As analysts reviewed each representation, sub-themes were added to each theme with every point made in the representation being identified, recorded and coded.

5.4 During analysis the coding framework was updated several times to ensure every significant emerging issue was captured. Location-specific issues were also identified.

5.5 In total 17 themes were identified which were then split further into sub-themes.

Theme	Acronym	Short description
Study Areas:	SAAB, SAC, SAD, SAE, SAF, SAG	Comments relating to any location or study area. The themes below are for comments that are not location-specific.
Consultation and Information	CI	Comments about the consultation process and requests for information.
Cost	CST	Comments relating to the cost of the proposed infrastructure.

Theme	Acronym	Short description
Previous Decisions	D	Comments relating to decisions previously made by National Grid including, strategic options, route corridors and preferred corridor and the need case for the project.
Environment	E	Comments relating to the potential impacts of the project on the environment.
Engineering, Construction and Operation	ED	Comments relating to technical aspects and impacts of the construction or operation of the proposed infrastructure.
Health, Safety and Security	HSS	Comments relating to the potential impact the proposed infrastructure could have on people's health and safety.
Policies and Principles	PP	Comments referring to policies or principles that may be relevant in the decision-making process.
Substation	S	Comments relating to the proposed substation.
Socio-economic	SE	Comments relating to the potential socio-economic impacts of the proposed infrastructure including impacts on local businesses and property values.
Reference	R	Comments referring to other reports, or other stakeholders' representations.
Routeing and Design	RD	Comments relating to the routeing and design of the connection, including the use of transmission technologies e.g. undergrounding.

5.6 Quality assurance procedures were put in place to ensure representations were properly coded and therefore captured and analysed.

5.7 During the period of the Connection Options Report Consultation, 459 interactions were received through different response mechanisms, of which 47 were null representations (blank forms or duplicate representations).

Representation type	Count
Email	222
Letter	71
Telephone call	27
Online comment	51
Feedback form	36
Feedback form with attachment	5
Null representation	47
Total	**459**

5.8 In total 374 representations were received from members of the public (including local interest groups).

5.9 The categorisation of responses is presented in Appendix G.

Qualitative

5.10 At the end of the consultation period, the project team had regard to all of the representations from the local community, both the quantitative data analysed by Dialogue by Design and the qualitative information in the form of issues raised by all parties during the consultation period.

6 REPRESENTATIONS FROM PRESCRIBED BODIES AND LOCAL COMMUNITIES

6.1 This chapter of the report summarises the representations from prescribed bodies. National Grid's responses to the issues raised by all parties, including the local community, are considered in Chapters 7 to 13.

Local authorities

6.2 The representations set out below relate to the formal resolutions of local authorities. Reports to committees contained the planning officers' assessment of the findings of the Connection Options Report. While issues raised in these assessments are not identified below, they have nevertheless been considered by the project team in determining whether they should influence the selection of the preferred alignment.

Suffolk County Council

6.3 The findings of the Connection Options Report were considered by Suffolk County Council's Cabinet on 10th July 2012. The Council reiterated the concerns expressed in its resolution of 2nd February 2010 and in particular point (f) that "*National Grid must take a more strategic, long-term perspective on national transmission requirements, paying full regard to the environmental implications of alternative approaches to network development and the costs and benefits likely to arise over the lifetime of any investment project, rather than just its initial construction costs*".

6.4 It urged the Government to:

- review the processes which dictate that National Grid must pursue the scheme now, so as to avoid a sub-optimal scheme being consented, given "*known delays associated with the new generators which necessitate the project*";
- address the point that current arrangements concerning compensation provide insufficient recompense for individuals and communities that may be negatively affected by this proposal.

6.5 The other main issues raised in their representation included:

- each and every section of the line should be undergrounded;
- any sealing end compounds are likely to have significant visual impacts and that choosing their locations based on minimising the stretches of undergrounding is a wholly inadequate approach;

- if development consent is granted, National Grid should set up and finance an Environmental Improvement Fund to support local environmental initiatives to mitigate the impacts of any development regardless of whether the eventual solution is over or underground;
- by failing to follow best practice guidance on socio-economic appraisal, National Grid has not adequately responded to local concerns on the impact of the scheme on local communities and the local economy and further work is required;
- local communities are frustrated with the consultation process, in particular as to how their representations have been taken into account and informed National Grid's conclusions and expects this to be rectified through future consultation and reporting;
- there has been a lack of clarity over the approach to the Hintlesham and Burstall area and the lack of clarity and consultation to date over the need for a substation and consequently the lack of an overall approach to the development of this project;
- emerging opportunities for undergrounding the existing lines through the Dedham Vale Area of Outstanding Natural Beauty (AONB) and the Stour Valley in particular should be exploited fully with the ambition of securing and maintaining a landscape free of high voltage electricity transmission pylons. The Council will seek undergrounding of existing lines alongside that for new lines.

Essex County Council

6.6 Essex County Council's representation was endorsed by the Political Leadership Team on 16th July 2012. The Council welcomed the proposal to underground the section in their administrative area and the Stour Valley. The main issues which this raised included:

- National Grid should review its future work programme to allow appropriate time for the necessary planning assessments, and consultation, to be undertaken, and to enable the least environmentally damaging scheme to be delivered;
- whilst an indicative route for the underground section in the Stour Valley has been identified further work is required to ensure the most appropriate route is progressed;

- National Grid should additionally underground Study Area F, and in so doing remove the impact of two Sealing End Compounds on the area and the setting of the AONB and the Stour Valley;
- a comprehensive and detailed archaeological excavation and recording programme should be undertaken in advance of any development, as part of the EIA;
- detailed consideration should be undertaken regarding the possible local implications of the proposed Sealing End Compound in proximity to Pylon 4YLA001, with consideration of their impact on the landscape, biodiversity and cultural landscape, along with access issues for construction and maintenance from the local road network, many of which are protected lanes;
- there does not appear to have been a structured and transparent consideration of all potential substation options;
- any substation consultation will require a targeted awareness programme and revised Community Forum arrangements will be required as part of any substation consultation;
- the redundant 132kV line west of Twinstead Tee to Rushley Green, near Castle Hedingham should be removed as part of the scheme;
- there appears to be minimal consideration of how local environmental and socio economic benefits of undergrounding have been considered in financial terms (e.g. impact on tourism);
- National Grid should establish a Community Improvement Fund to support local environmental initiatives, which can be accessed by community groups, parish councils etc;
- the scheme does not appear to be subject to equivalent provisions for compensation, other than wayleave agreements with landowners, for individuals impacted upon. If this were factored in then the relative costs of undergrounding would fall further.
- the Community Forums are concerned that all their views have not been considered, and if they have, it is unclear within the Connection Options Report;
- the Community Forums are concerned that it is not transparent how National Grid has dealt with competing constraints in proposing their preferred proposal (i.e. landscape and views versus biodiversity);

- concern has also been highlighted with regard to the lack of a co-ordinated consultation between the COR and UKPN Needs Case, and the status of the latter document;
- whilst the Hintlesham Option has been incorporated within the Connection Options Report, the way it has been explained to local people has not been satisfactory;
- the separate elements of the project have not been progressed in tandem, which is a frustration to local authorities and communities.

Babergh District Council and Mid-Suffolk District Council

6.7 A joint representation[17] was received from Babergh District Council and Mid-Suffolk District Council.

6.8 The authorities resolved to urge Government:

- to review the processes which dictate that National Grid must pursue the scheme now so as to avoid an unsatisfactory project being approved given the known delays associated with the delivery of new electricity generation capacity in the Eastern Region;
- to review the current arrangements concerning compensation to ensure that individuals and communities who may be negatively affected by the Project receive sufficient recompense

6.9 In respect of the proposals in the Connection Options Report, the Councils made representations that:

- every section of the line should be placed underground;
- sealing end compounds are likely to have a significant and unacceptable impact upon the character of the countryside;
- National Grid has not adequately responded to concerns about the socio-economic impact of the scheme upon the local economy;
- residents should be afforded every opportunity to be fully engaged as the project progresses in order to address the uncertainty that has been created;

[17] Letter of representation : Babergh and Mid Suffolk District Councils 20th July 2012

- there has been a lack of clarity over the approach to route selection in the Burstall and Hintlesham area;
- there has been a lack of clarity over the need for a substation in the Twinstead area;
- if a Development Consent Order is granted, National Grid should set up and finance an Environmental Improvement Fund to support local environmental initiatives to mitigate the impacts of the development;
- in addition to requiring the new line to be placed beneath ground the emerging opportunities for undergrounding the existing lines through the Dedham Vale Area of Outstanding Natural Beauty (AONB) and the Stour Valley should be exploited fully.

Braintree District Council

6.10 Braintree District Council[18] welcomed the National Grid proposals to underground the line in Study Area G but considered that there was a need to:

- set out the detailed alignment of the underground cable taking into account environmental and engineering constraints rather than being constrained by the area of route corridor 2;
- minimise the swathe of land required for the construction of an underground cable, particularly when crossing field boundaries. Consideration to be given to the use of horizontal directional drilling at particularly sensitive locations such as protected lanes and ancient or species rich hedgerows;
- minimise the impact on Protected Lanes;
- undertake comprehensive and detailed archaeology excavation and recording work in advance of any development;
- consider undergrounding the existing 400kV cable which currently runs through the Dedham Vale AONB and the Stour Valley.

[18] Letter of representation : Braintree District Council 19th July 2012

6.11 Braintree District Council did not support certain aspects of the proposed project:

- the retention of redundant overhead line between Twinstead Tee and Rushley Green near Castle Hedingham;
- the location of a sealing end compound in the vicinity of 4YLA001 near Sparrows Farm because of its effect on the Stour River Valley landscape and impact on public views from protected lanes, public rights of way, Loshes Meadow nature reserve and Sparrows Farm and access off a Protected Lane. Braintree District Council wishes to promote a site a further 1.5km south of this near pylon 4YLA005 ;
- the need for two sealing end compounds to be located within a short distance of each other in Study Area F. Braintree District Council wishes to promote undergrounding through Study Area F to avoid this requirement;
- the need for a substation to the west of Twinstead Tee.

6.12 Braintree District Council was also concerned that :

- the Connection Options Report and the UKPN Business Case had not been considered alongside each other in order for a full picture of the project to be available for communities to comment upon;
- National Grid has not adequately progressed the project by achieving the right balance between technical, economic and environmental obligations and requested that further work take place on the socio-economic impacts of the project on local communities;
- the scheme does not seem to provide equivalent provisions for compensation, other than wayleave agreements with landowners, for individuals impacted upon;
- an Environmental Improvement Fund should be established to support local environmental initiatives, which can be accessed by community groups, parish councils etc.

6.13 Finally Braintree District Council asked National Grid to provide the following further information :

- a full assessment of the impacts of construction of underground and overhead connections and sealing end compounds ;

- a comparison of the costs of two sealing end compounds and a section of overhead line in area F and the cost of undergrounding this section which meets with the underground line already proposed in study areas E and G;
- a detailed timetable and consultation strategy for the provision of any additional infrastructure that the UKPN business case proposes.

Dedham Vale AONB and Stour Valley Partnership

6.14 While the Dedham Vale AONB and Stour Valley Partnership[19] was still to be convinced of the need for the development, it welcomed the proposal to underground the sections of the connection through the Dedham Vale AONB and Stour Valley. It expects that National Grid will undertake the work to the best possible standards, such as routeing any underground cables away from known sites of archaeological importance and monitoring any trench digging for archaeological interest, and will seek to minimise any damage to important landscape features, such as hedgerows, and restore them on completion of any works.

6.15 The Partnership remains concerned about effects on the setting of the AONB and Stour Valley, in particular the location of sealing end compounds. It suggested an alternative approach including:

- undergrounding the connection through Study Area F to minimise effects on Leavenheath/Assington and avoid the effects of the sealing end compounds;
- undergrounding the existing 400kV overhead line through the Dedham Vale AONB and Stour Valley;
- supporting local environmental initiatives if consent is granted.

Statutory bodies

English Heritage

6.16 The representation from English Heritage[20] welcomed the proposal to underground sections of the connection in Study Areas E and G and to remove the 132kV overhead line in the Hintlesham area. However it expressed disappointment that

[19] Letter of representation : Dedham Vale AONB and Stour Valley Partnership 10th July 2012

[20] Letter of representation : English Heritage 16th August 2012

undergrounding was not being considered for Study Area C (the Brett Valley), citing potential effects on the settings of Grade II* listed Benton End Farm and Hadleigh Conservation Area, including views out of and across the designated area. It urged National Grid to reconsider this option.

6.17 A particular concern was the effect of the proposed interim alignment on the Grade I listed Hintlesham Hall and related listed buildings. English Heritage considered that this would have "*a significant negative cumulative impact on the setting of this exceptional group of listed buildings*".

6.18 It noted that whilst the former parkland has been somewhat degraded over the years, consideration still needs to be given to whether additional change will further detract from, or can enhance, the significance of the asset.

6.19 Following a site meeting on 30th August 2012, English Heritage concluded[21], in respect of effects on the Brett Valley, that "*It is apparent that whilst there are some glimpses of the existing line from the Benton Street area, and indeed further afield across the entire town from the by-pass to the north, these impacts would not be made significantly worse by the proposed additional line (replacing the present 132 kV line) especially if special consideration were given to the spacing of towers*".

6.20 It went on to note that "*the potential negative impacts of the recommended option on the setting of the Grade II* listed Benton End, and the setting of the Hadleigh conservation area, from the south, on the road from Upper Layham, do not appear to be as significant as English Heritage had predicted. These two designated assets are not at present perceptible until one is north of the 132 kV line, which, would as proposed, be removed to provide the route for the new 400kV line*."

6.21 In respect of Hintlesham Hall, English Heritage maintained its view that "*the further consideration of these impacts is justified, including a visualisation study, which we feel is practical, as the route of the line appears to be quite firmly predetermined. This assessment should, we feel also consider the option of undergrounding*".

[21] Letter of representation : English Heritage : 19th September 2012

Environment Agency

6.22 The representation from the Environment Agency[22] supported many aspects of the methodology used in the COR and welcomed the proposals for undergrounding. It raised a number of issues, including:

- the need for a clear explanation of how multi-criteria analysis was applied;
- whether, in the Holford Rules, the definition of "high amenity value" extends to Special Landscape Areas as well as National Parks and AONBs;
- whether an underground cable route which follows a corridor defined for the purposes of an overhead line represents the best choice of route between Bramford and Twinstead taking all factors into account;
- presentation of the methodologies should have adopted EIA practice;
- uncertainty about the socio-economic assessment which had been undertaken;
- whether it would be better to underground in Study Area F to assist in the preservation of the landscape and achieve a sense of continuity;
- the EIA scoping report should provide an outline methodology for the assessment of effects in greater detail than that provided in the COR.

Natural England.

6.23 The representation from Natural England[23] supported the conclusions of the report with the exception of those for Study Areas D and F where it considered that insufficient information was provided to enable it to determine the nature and scale of the impact of the preferred option on the AONB and its setting.

6.24 It raised a number of issues, including:

- the need to avoid loss of ancient woodland habitat at Hintlesham Woods SSSI;
- further survey information on the use of hedgerows between Ramsey Wood and Keebles Grove (Hintlesham Corridor 2B) by dormice and bats is required before the impact of the overhead alignment in this area can be fully determined;

[22] Letter of representation : Environment Agency : 27th July 2012

[23] Letter of representation : Natural England: 27th July 2012

- some or all of study areas D and F may be considered to be within the 'setting' of Dedham Vale AONB. Further information such as ZTV's and photomontages required to assess the impact;
- opportunity should be taken to enhance the special qualities of the protected landscape (Dedham Vale AONB) and National Grid is encouraged to consider undergrounding the existing 400kV overhead line through the AONB;
- the location of a sealing end compound (west of the River Stour) requires careful consideration to minimise the impact on visual amenity;
- further detailed studies are required to ensure appropriate mitigation for impacts on habitats in the Stour Valley (including impacts on wetland habitats);
- every effort should be made to keep the damage to important landscape and biodiversity features, such as woodland, trees and hedgerows to a minimum in those sections which are selected for undergrounding. The use of directional drilling should include hedgerows supporting dormice;
- the pylons forming the existing 132kV line should be removed before the new line is installed;
- effort should be made to provide enhancements to the wider landscape and its biodiversity and geodiversity where possible.

Parish Councils

6.25 **Alphamstone and Lamarsh** Parish Council[24] supported undergrounding in study area G but suggested that underground cable should be extended into Study Area F at the juncture of the G and F boundaries, where the pylons would be visible from the Stour Valley due to the topography of the land. The Council also stated that it would be preferable for the whole line from Bramford to Twinstead to be underground.

6.26 Regarding the proposal to put a substation to the west of Twinstead, the Council supported the suggestion put forward by Stour Valley Underground (SVU), running an underground cable from the Braintree substation to Rushley Green and stated that this must be given serious consideration.

[24] Letter of representation : Alphamstone Parish Council : 27th July 2012

6.27 **Assington** Parish Council[25] supported the local authority view that the whole route should be placed underground. In particular it wished to see the section through Study Area F placed underground because of the proximity to the AONB and the visual impact of two sealing end compounds. It stated that if National Grid proceeds to erect pylons in Study Area F then two issues need to be taken into account in line routeing :

- the route proposed to the South of 'Hill View' leaves this property sandwiched between the two lines which is not acceptable;
- an alignment that does not necessitate felling the line of poplars north of Mill Farm must be considered as the existing poplars form a valuable barrier.

6.28 **Boxford** Parish Council[26] urged National Grid to reconsider undergrounding the whole route to preserve the landscape.

6.29 **Bramford** Parish Council[27] was generally supportive of the need to transmit electricity across the county but had a number of concerns:

- an increase in the size of the substation feeding the connection including the building of a large converter hall to transform DC feed from offshore to AC for transmission;
- potential under-estimation of the impact of the larger pylons needed for 400kv transmission;
- undergrounding appears to have been considered only for Dedham Vale Area of Outstanding Natural Beauty and the Stour Valley when the whole region appears to share many of the characteristics of these designated areas;
- the effect on the economic benefits of tourism must be considered;
- underground cables are not without issues, in particular concerns about induced ground currents and potential impact on livestock;

[25] Letter of representation : Assington Parish Council : 31st July 2012

[26] Email representation : Boxford Parish Council : 10th August 2012

[27] Letter of representation : Bramford Parish Council : 9th July 2012

- HVDC has not been considered - extending the DC feed closer to the point of connection to the grid at Twinstead would obviate the need for a converter hall at Bramford and would allow the whole route to go underground.

6.30 At their meeting on 29th June 2012, **Bulmer** Parish Council[28] agreed to support the proposal to underground the Stour Valley part of the route. The council also strongly supported the additional proposals put forward in Stour Valley Underground's representation.

6.31 **Burstall** Parish Council[29] expressed concern that:

- there would be an unacceptable cumulative impact on Burstall from the extension of Bramford substation, proposals by energy producers and the overhead line proposals;
- both Corridors 2A and 2B would have an unacceptable effect on Burstall residents, in terms of the impact on their homes, their lives, value of their properties and the visual amenity of the landscape. Therefore, there should be local undergrounding in the vicinity of Burstall and Hintlesham and more generally along the entire proposed route;
- the need case for a new power line, has not been made and with the passage of time the requirement for a new power line is further receding;
- National Grid has not entered into a meaningful consultation process. At community forums and local events, the views of Parish Councillors and residents have been consistently ignored;
- the Selection of Preferred Corridor Report made an overriding strong case for Corridors 3 or 4, using the specified criteria, but concluded that Corridor 2 should be chosen. Therefore, the consultation process has been flawed and biased from the outset.

[28] Email representation Bulmer Parish Council 27th July 2012

[29] Letter of representation : Burstall Parish Council :16th July 2012

6.32 **Chattisham and Hintlesham** Parish Council[30] remain of the opinion that the whole route should be underground. In addition it raised the following issues:

- since 2009 the urgency for the new line has diminished. Sizewell C is not imminent or certain. The power from the first stage of the East Anglian Offshore Wind project can be accommodated by the upgrade to the existing line;
- the Council agrees with the views of Babergh District Council that the planned mitigation to protect Hintlesham Woods would result in the creation of a further wire 'box' to the south of the A1071 and Hadleigh Bee Farm. As such the proposals would be visually intrusive and highly detrimental to the character of the surrounding countryside, especially when viewed from the A1071 road. As a consequence there is a very compelling case for the route to be placed beneath ground within the AB Study Area of Burstall to Hintlesham;
- many of the community have found the information provided to be confusing and the maps very difficult to understand;
- scant concern has been shown to the effect of the scheme on our economy and livelihood and the proposals have split the community;
- using National Grid's own baseline criteria for undergrounding, despite our area having the highest score for being undergrounded we were not considered;
- National Grid has always refused to say what weight will ultimately be given to the views of those affected.

6.33 **Flowton** Parish Meeting[31] supported Burstall Parish Council in its view that the connection should be underground in this area.

6.34 **Layham** Parish Council[32] provided a detailed review of the findings of the Connection Options Report relating to its area, endorsed by Hadleigh Town Council and the Hadleigh Society. In summary it considered that the assessment had given insufficient weight to the views of the Community Forums and was based on a subjective interpretation. It also considered that:

[30] Letter of representation : Chattisham and Hintlesham Parish Council :20th July 2012

[31] Email representation Flowton Parish Meeting 26th July 2012

[32] Letter of representation Layham Parish Council 25th July 2012

- landscapes outside the AONB could be of equal or better quality than those within the designated area and the Brett Valley is a natural extension to the AONB;
- the quality of the Brett Valley had been underestimated and object to the description of the Brett Valley (a Special Landscape Area) as "small and unremarkable", "not particularly noted for its scenic properties" and "not being particularly sensitive";
- the Brett Valley is a special landscape, much loved by local residents, who have a detailed understanding of the landscape not recorded in the assessment;
- the Brett Valley landscape cannot accept more pylons;
- the presence of the existing overhead lines already impacts this landscape to a maximum level. It is our view that because of the aesthetic damage of these lines, to an otherwise special landscape, there is no tolerance to accept further impact;
- the different treatment of elements of the factual descriptions of the Brett Valley and Stour Valley (including references to the presence of sewage treatment works in the landscape, and the relationship to Dedham Vale) introduces bias into the reporting;
- an underground cable option would have a major positive effect on the landscape;
- the existing overhead lines have a major impact on residents in Layham and the southern edge of Hadleigh and the position would worsen if an overhead option is selected for the connection – such effects had been underestimated in the report;
- comparing the extent of recorded remains in the Stour Valley, archaeological remains should be no barrier to undergrounding (including the siting of sealing end compounds) in the Brett Valley;
- potential effects of a sealing end compound on the setting of Benton End Farm and Roman Villa remains have been overstated;
- the importance of the East Anglian School of Painting and Drawing and the influence of the landscape of the Brett Valley should be taken into consideration;
- undergrounding in the Brett Valley would cause less disturbance to ecology than in the Stour Valley;

- the effect of undergrounding on ecology and woodland in the Brett Valley has been overstated.

6.35 **Leavenheath** Parish Council[33] was concerned about the potential impact of a sealing end compound on properties off Stoke Road. It considered that the whole connection should be underground.

6.36 **Gestingthorpe** Parish Council[34] was in support of the undergrounding through the Stour Valley as far as the existing line 4YLA to Braintree and Rayleigh, but concerned about the detail of the western termination. The Parish Council raised the following issues:

- the western end of undergrounding ending at pylon 4YLA01, would require a terminal tower and sealing end compound in front of Grade II* listed Sparrow's Hall and behind its listed barn, also harming wildlife. This site is crossed by a public footpath and next to Essex Wildlife Trust's Loshes Marshes Reserve, and in view of the Stour Valley Path and St. Edmund's Way;
- the underground cable should bear south to connect to the existing line at a less sensitive point at least as far south as pylon 4YLA04. The special landscape characteristics justify the sealing end compound being located well south of Ansell's Grove;
- the western termination of undergrounding should be south of Henny Back Road at pylon 4YLA05, thus removing 400kV pylons as well as the 132 kV diamond crossing from the Special Landscape Area.

6.37 **Polstead** Parish Council[35] welcomed the proposals for the Polstead area (undergrounding through Study Area E). It expressed concern about:

- the potential effect of a northern alignment on properties and on Millfield Wood at the western end of Study Area D;
- the visual impact of twin overhead lines and a sealing end compound located to the west of Heath Road which is part of a network of paths and lanes valued by local residents and tourists.

[33] Email representation Leavenheath Parish Council 27th July 2012

[34] Letter of representation Gestingthorpe Parish Council 19th July 2012

[35] Letter of representation : Polstead Parish Council : 25th June 2012

6.38 The Parish Council suggested alternative sites for a sealing end compound to the east of Millwood Road or in the redundant part of Layham Quarry to minimise the effects on Polstead Heath and on views from the AONB.

6.39 **Stoke-by-Nayland** Parish Council[36] welcomed undergrounding through the Area of Outstanding Natural Beauty but expressed concern about:

- undergrounding is insufficient to protect the views from the AONB - the AONB in this area is confined to the valley of the River Box and a tributary through Polstead - consequently, most of the pylons within the AONB itself are visible only at relatively short range - the pylons which affect the wider views are those on the high ground to the east and the west of the AONB itself, including those between Leavenheath and Assington;
- impact on views from the Stour Valley Path, Stoke by Nayland golf course and the B1068. The COR plays down the significance of these views from within the AONB, on the grounds that they are distant (over 2 km) and intermittent. The ones most clearly relevant to this issue are those north over the Box valley towards Polstead;
- the COR analysis by Study Area inhibits proper recognition of the importance of views of pylons in one Study Area from another;
- impact on socio-economics in the wider area.

6.40 The Parish Council suggested extending the underground line east to Layham sand and gravel pit and west to an area south of Assington. It also supported extension eastward of the undergrounding proposed for the Stour Valley, on a similar rationale to the extension of that for the AONB, namely to protect the setting of the valley. Support is also shown for undergrounding in the Brett valley, on the basis that its scenery is similar to that of the Box and Stour, and that proper weight should be given to its cultural connections in terms of the significance of the East Anglian School of Art at Benton End as well as support for undergrounding in the Hintlesham area, in terms of protecting Ramsey Wood SSSI and the setting of Hintlesham Hall.

[36] Letter of representation : Stoke by Nayland Parish Council : 27th July 2012

Other prescribed bodies

6.41 Network Rail commented that there was insufficient detail in order to fully assess potential impacts on the railway. They also stated that they will be seeking protection from the exercise of compulsory purchase powers over operational land either for permanent or temporary purposes and wish to agree protection for the railway during the course of the construction works and otherwise to protect our undertaking and land interests. Any rights for power or other lines under, over or alongside the railway line will require appropriate asset protection measures deemed necessary by Network Rail.

6.42 Of those other prescribed bodies which were consulted, the following responded either with no objections or no comment. These bodies were:

- National Air Traffic Services;
- British Waterways;
- Trinity House; and
- The Coal Authority.

Addressing the representations

6.43 The feedback from the local community (the general public, persons with an interest in the land, local bodies, community forums and thematic groups) is also addressed in this report. Chapters 7 to 12 set out the main issues and concerns raised by the local community and consultees (statutory and non-statutory) relevant to the indicative alignments identified in the Connection Options Report and which could have a bearing on the selection of alignment to take forward to detailed design. These have been organised by study area. The key issues are summarised and the response from National Grid presented. In cases where the issue has already been addressed in the COR, the relevant reference is given. Where new information is brought forward in a representation, or further investigation is required, each section concludes by stating how the representations are being taken into consideration.

6.44 This report cannot present all the matters raised by consultees, many of which were extremely detailed in nature. However the project team has considered all the representations received and this information is being fed into the design and assessment process.

7 ISSUES AND REPRESENTATIONS - STUDY AREA AB (BRAMFORD/HINTLESHAM)

Issues

7.1 The following **general** issues were identified:

- there has been a lack of clarity over the approach to route selection in the Burstall and Hintlesham area;
- many of the community have found the information provided to be confusing and the maps very difficult to understand;
- by stating the least constrained option NG has put a bias into the consultation exercise. If responses from this exercise were to influence NG's decision on corridors 2A / 2B then clearly NG need to explicitly allow time for 2A residents to respond to any change of decision in order to ensure equality in the consultation process.
- scant concern has been shown to the effect of the scheme on our economy and livelihood and the proposals have split the community;
- the effect of the proposal on mental health of residents;
- what mitigation is proposed for 46m pylons, timescales for the effects to be effective, and examples elsewhere of what is intended;
- plans for the future (next 20 years) should be made clear instead of concentrating on one line now. Concern about what might happen when Bramford substation is finished and the converter station built for wind farms – another line of pylons is likely to be needed for distribution around the country.

Responses

7.2 The approach to route selection is set out clearly in the COR (Chapter 6 and Appendix A) which explains why certain options were considered and why others were discounted.

7.3 Because of the number of options in the study area, additional drawings were prepared to illustrate clearly each option. These drawings were on display at the community events held at on 28th June 2012 at Hintlesham and Chattisham Community Hall and on 4th July 2012 at Burstall Village Hall. National Grid staff were

on hand to explain each of the options to interested parties. The drawings were also incorporated in the COR and available at information points and on the project website.

7.4 It would have been inappropriate for National Grid not to identify the least environmentally constrained option based on the evidence of the assessment. This was done consistently for each study area. Local residents made representations on the merits of both Corridors 2A and 2B and these have been taken into account by National Grid. Residents in Corridor 2A have had an equal opportunity to those in Corridor 2B to make their case for a particular alignment.

7.5 The effect on the local economy was considered in the COR (6.186 et seq) and will be further examined at the detailed design stage. In a situation where there is more than one option under consideration, it is inevitable that there will be strong views expressed by different parties.

7.6 National Grid is unable to assess the effect of the proposal on the mental health of residents. As part of overall consideration, it designs its schemes so as to reduce the effects on local communities and seeks to route its transmission lines away from residential properties where possible in order to minimise effects on the occupiers' amenity.

7.7 National Grid accepts that it is difficult to mitigate the effects of its pylons. Some mitigation is possible by careful positioning of pylons (for example against a woodland backdrop), by the use of low height pylons or by planting or other screening schemes undertaken with the agreement of landowners. The COR made no assumptions about the use of such measures which can only be considered at the detailed design stage.

7.8 National Grid has a statutory and licence obligation to respond to generators wishing to connect their generation to the national electricity transmission system. The Bramford to Twinstead Tee Connection will have sufficient capacity to connect all planned generation in East Anglia, including the East Anglia Offshore Wind Farm, which connect to Bramford substation. No requirement for additional overhead lines in the corridor has been identified.

Issues

7.9 The following issues were identified relating to **Bramford substation**:

- concern about an increase in the size of the substation feeding the connection including the building of a large converter hall to transform DC feed from offshore to AC for transmission;
- any development of Bramford Substation should halt as it is too large and out of keeping with its rural location;
- property near Bramford Substation likely to be affected by the expansion of the substation;
- the effect of the substation on views to the north of Burstall;
- lack of knowledge of proposals to extend the substation as Burstall is in Babergh District Council area;
- National Grid and energy producers are currently proposing to massively extend the substation which would have a cumulative detrimental environmental effect on Burstall residents and landscape when considered in conjunction with a new overhead line in Corridor 2;
- lack of clarity regarding the impact of the high voltage line in conjunction with the developments at the Bramford substation in the Burstall area.

Responses

7.10 There is a need to boost the capacity of Bramford substation so that National Grid can ensure safe and reliable electricity supplies and secure future energy supplies. The need for this work, which is currently under way, has been triggered by a National Grid connection agreement with Centrica to connect wind farms in The Wash to the National Transmission System. This work would also accommodate additional power from other proposed generators, such as offshore wind farms at Duddon Sands and the proposed King's Lynn gas-fired power station. These current works are not linked to the proposed Bramford-Twinstead Tee connection.

7.11 Future works will be required at Bramford substation as part of the proposed Bramford-Twinstead Tee connection but clearly these would depend on development consent being granted for this connection. Such works can all be accommodated within the operational land of the substation.

7.12 In addition to National Grid's own works, there is a separate proposal by East Anglia Offshore Wind Ltd to construct converter stations on land to the north of the substation as part of the on-shore facilities required to support its planned off-shore wind farm. This does not form part of the Bramford to Twinstead Tee proposal nor the current consultation. There would be a cable connection from the converter station(s) to the substation but any modifications to National Grid infrastructure would be accommodated within the existing operational land boundary.

7.13 National Grid deals with the relevant planning authority Mid Suffolk District Council when changes to the substation are planned. Where appropriate, local publicity is arranged to disseminate information about proposed changes. The Project Newsletter has included information about developments at Bramford substation and this was circulated to properties in Burstall.

7.14 The substation is visible from properties in Burstall. The current extension of Bramford substation forms part of the baseline conditions against which a change to landscape and views as a result of an additional overhead line is assessed. Proposals for converter stations north of Bramford Substation have been included in this assessment. The assessment in the COR (6.30, 6.59, 6.75 and 6.100) states that the cumulative negative effect on landscape and views as a result of an overhead alignment in Study Area AB would be no greater than moderate negative, owing to the presence of existing infrastructure in the landscape, the proposed height of the converter station building and the presence of existing mature woodland blocks.

Issues

7.15 The following issues were identified relating to the **Burstall** area:

- both Corridors 2A and 2B would have an unacceptable effect on Burstall residents, in terms of the impact on their homes, their lives, value of their properties and the visual amenity of the landscape. Therefore, there should be local undergrounding in the vicinity of Burstall and Hintlesham and more generally along the entire proposed route
- Burstall residents will be most affected by the proposal as the village will be ringed by overhead lines;
- further overhead lines around Burstall will aggregate with those already deployed causing further significant disfigurement of the landscape and environmental damage;
- effect on bridlepath in the Burstall area.

Responses

7.16 The visual assessment in the COR records a moderate negative effect overall in Study Area AB as a result of an additional overhead line on either Corridor 2A or 2B. The effect on views experienced by residents of Burstall is recorded in COR 6.76, 6.81, 6.85. This judgement reflects the presence of the existing overhead lines and Bramford substation in the existing landscape, which lessens the magnitude of effect (scale of change) that is assessed. The COR notes that whilst all overhead options would result in moderate negative effects, an overhead line on Corridor 2B would affect fewer residential properties than Corridor 2A and the COR also notes the particular visual effects that would be experienced if an overhead line were to be introduced to the part of Corridor 2A that contains no existing overhead line. The visual assessment also reports that an underground cable route would avoid these negative effects and would have a positive effect on landscape and views where the 132kV line would be removed.

7.17 However, the COR concludes that the benefits to landscape and views as a result of an underground cable route in Study Area AB would not clearly outweigh the extra economic, social and environmental impacts.

7.18 Burstall would only have overhead lines to more than one side of the settlement if the Corridor 2A alignment were to be taken forward.

7.19 The indicative alignments would have no direct effect on the bridleway between Burstall and Bramford, which will remain open throughout the construction period. Whichever overhead alignment were adopted, this would be present in views from the bridleway, although views of an alignment in Corridor 2A would be more distant. Views from the bridleway are already affected by the presence of overhead lines and Bramford substation.

Issues

7.20 The following issues were identified relating to **Hintlesham Hall** :

- the effect of the proposed interim alignment on the Grade I listed Hintlesham Hall and related listed buildings. English Heritage considered that the proposed interim alignment would have "*a significant negative cumulative impact on the setting of this exceptional group of listed buildings*", whilst requesting further assessment of the effects;

- whilst the former parkland has been somewhat degraded over the years, consideration needs to be given to whether additional change will further detract from, or can enhance, the significance of the asset;
- further consideration of the impacts on the setting of Hintlesham Hall is justified, including a visualisation study, and the option of undergrounding;
- a further line of pylons close to Hintlesham Golf course club house and first green are likely to affect the profits of the club and therefore viability of business. Further driving range and 9 hole course are proposed for the site which would not be possible if lines cross the site ;
- 2B will have significant economic and social impacts on local businesses including Hintlesham Hall, Hintlesham Golf Club, College Farm Bed and Breakfast, Hintlesham Barns, Claremont Nurseries and a newly established self catering business at Suffolk Escape;
- Hintlesham Hall and Golf Club are unlikely to be affected or have limited negative impact.

Responses

7.21 The importance of the Grade I listed Hintlesham Hall and its setting is recognised in the COR. The anticipated effects on the setting of Hintlesham Hall from the options in Study Area AB and the effects on views from the Hall have been assessed in some detail (COR 6.113 – 6.118, 6.132 – 6.134, 6.148 & 6.150).

7.22 Following receipt of the representation, further discussions and a site visit were held with the relevant officer of English Heritage to gain a clearer understanding of the principal concerns and to explore the need for further assessment.

7.23 English Heritage has requested that further information is provided to allow it to consider in more detail how the interim alignment in this area, as set out in the COR, may influence the existing setting of Hintlesham Hall, a Grade 1 listed building. In particular, English Heritage has requested a visualisation study and that further consideration is given to the option of undergrounding. In the light of this representation, National Grid intends to submit further information to English Heritage for its consideration. This information will be made available on the Bramford – Twinstead website. Following receipt of English Heritage's representations on this further information, National Grid will confirm its proposals for Study Area AB.

7.24 National Grid is aware of proposals, subject to the granting of planning permission, for the expansion of the golf course and for a driving range in the parkland associated with the Hall. Depending on the outcome of the studies and discussions with English Heritage noted above, further discussions will take place with affected parties to explore design solutions for the proposed recreational facilities.

7.25 The COR (6.186) identified a number of businesses in the local area which could be affected by the proposals. Overall the assessment concluded that the southern overhead alignment in Corridor 2B has the potential to have a minor negative effect on the environs of Hintlesham Hall Hotel and Golf Course. It also identified that, in addition, three other tourist related businesses would have open views of the new overhead line. In taking the proposal forward, consideration will be given to the need to mitigate potential adverse effects on local businesses and the measures which could be deployed.

Issues

7.26 The following issues were identified relating to **Hintlesham Woods**:

- assessment did not consider running both existing and proposed 400kV overhead lines around north side of woods;
- the need to avoid loss of ancient woodland habitat and to minimise lopping on woodland edges;
- route through the woods is likely to be less visually intrusive;
- concern about the impact on the SSSI – flora, fauna, RSPB Bird Reserve and Great Crested Newts;
- birds in Hintlesham Woods appear to be more important than people.

Responses

7.27 Routeing both existing and proposed 400kV overhead lines to the north of Ramsey Wood would not be acceptable because of the potential effects on properties to the north of Ramsey Wood and the fact that the relocation of a consented overhead line, where an option not requiring its removal is available, would not be justified in economic terms.

7.28 COR 6.217 concluded that while an alignment in Corridor 2A would avoid further impacts on the Hintlesham Woods SSSI, the impact of alignments in Corridor 2B on the woodland would be minimal. Whichever alignment is taken forward, National Grid

will seek to minimise the lopping of trees, whilst also balancing this with maximising distance from residential property and minimising effects on views.

7.29 The assessment within the COR has taken account of all wildlife designations including the nationally important SSSIs. The interim alignment presented in the COR passes outside Hintlesham Woods SSSI boundaries and avoids loss of SSSI habitats. Bird surveys have shown that an overhead line around the Ramsey Wood section of the SSSI would not have a long term impact on birds and this report has been accepted by the RSPB. The COR also takes account of other species that may use the SSSI woodland but also adjacent habitats (such as dormice, bats and great crested newts). The COR outlines mitigation methods that can avoid impacts on these species. The effect on birds is a material consideration. Corridor 2A alignments would also avoid effects on the SSSI.

Issues

7.30 The following issues were identified relating to **other elements of Corridor 2A**:

General

- Corridor 2A is not being considered by National Grid because of likely backlash from residents in that area;
- upgrading the 132kv overhead lines on Corridor 2A to operate at 400kV would be best option.

In Favour of 2A

- Corridor 2A would avoid overhead lines encircling woods;
- 2A should be selected as it will prevent a SSSI and RSPB bird reserve being surrounded by pylons, ensuring compliance with the Holford Rules;
- 2A will avoid a "wire box" around the houses at Orchardlands and Canes Farm, in Burstall and Pond Farm, Primrose Farm and Hadleigh Bee Farm in Hadleigh;
- 2A would avoid a double-line of pylons running through over 3.5km of Suffolk countryside and increasing the magnitude of blight to an unacceptable level, thus avoiding a breach of the Holford Rules;
- 2A is preferred option if as much of it as possible can be undergrounded;
- Corridor 2A is least contentious as it already exists.

Objections to 2A

- effect of option 2A on views of the surrounding landscape, particularly views of open countryside for residents of Chattisham;
- concern that corridor 2A has no existing overhead lines or pylons;
- section between Bramford and Burstall Bridge should be undergrounded;
- would destroy the view along Belstead Brook Valley from Flint Cottage, Hadleigh Road;
- aspects such as Hurdle Makers Hill, Valley Farm Drive and well used footpaths to Burstall Lane are not "plateau" vistas;
- 2A is likely to harm the agricultural environment;
- no existing pylons between Bramford Substation and Burstall Bridge and 2A would therefore have a significant negative effect on the landscape;
- 2A will have a devastating effect on village of Burstall;
- 2A would pass close to residential properties and 2B is likely to affect less local views as further away from residential properties;
- the existing 132kV line in Corridor 2A runs between the villages of Hintlesham and Chattisham. This line also runs through the hamlet of Cherryground which also has several residential properties;
- Corridor 2A introduces the blight of pylons to many residents that are currently not impacted by existing pylons (on the east side of Burstall, down to Burstall Bridge). Corridor 2B avoids adding new Burstall residents to the list of those already impacted by pylons;
- Corridor 2A has more directional changes in the route especially from the sub-station to Burstall Bridge. Corridor 2B has the least number of angled pylons;
- the section from Bramford sub-station to Burstall Bridge is currently undergrounded. It is therefore completely unacceptable to use the existence of an underground route to justify overhead alignment through this Special Landscaped Area section of Corridor 2A.

Responses

7.31 Corridor 2A has been assessed by National Grid on exactly the same basis as the other options. The reasons for the identification of a preference for an alignment in

the COR prior to consultation are set out clearly in that report. In accordance with its consultation strategy, National Grid has consulted widely on its proposals and has received representations from statutory consultees and residents potentially affected by alignment options in both route corridors.

7.32 It would not be possible simply to upgrade the existing 132kV overhead line infrastructure to carry current at 400kV. This is for a number of technical reasons, including the ability of the structures to support the additional weight of the 400kV conductors and the need to achieve greater electrical safety clearances for higher voltage circuits.

7.33 The benefits of Corridor 2A referred to above are noted. Many of these points are reported in the COR. However the COR reports that a new overhead line on Corridor 2B would have a lower negative effect than on Corridor 2A in terms of landscape and views. This judgement reflects the presence of the existing 400kV overhead line in Corridor 2B, which forms part of the baseline against which the potential change to landscape and views is assessed and which lessens the magnitude of effect (scale of change). The COR also notes that an overhead line on Corridor 2B would affect fewer residential properties than Corridor 2A and would minimise the extent of the landscape affected by 400kV overhead lines. In addition, the COR notes the particular visual effects that would be experienced if an overhead line were to be introduced to the part of Corridor 2A that contains no existing overhead line and the positive effects that would be experienced by the landscape and views in the vicinity of Corridor 2A where the 132kV overhead line would be removed and not replaced.

7.34 The objections to Corridor 2A referred to above are noted. Many of these points are reported in the COR, including the views from Hintlesham, Chattisham and houses at Cherry Ground and Duke Street. As noted above, the introduction of an overhead line in the area between Bramford and Burstall Bridge, where none exists, (and hence the effect on Burstall village) was a material consideration in the recommendation of the COR that an alignment in Corridor 2B be preferred. The existence of an underground cable between Bramford and Burstall Bridge is not considered by National Grid to justify an overhead alignment in Corridor 2A. Underground and overhead technology has been considered for connections in the study area.

7.35 It is correct that an alignment through Corridor 2A would require more angle towers than an alignment in Corridor 2B.

Issues

7.36 The following issues were identified relating to **other elements of Corridor 2B**:

In Favour of 2B

- running 2 lines of pylons close together through the landscape minimises the overall effect to the wider surrounding area and minimises the extent of the landscape affected - 2B southern option is preferable as it has the least negative impact on the surrounding area;
- Corridor 2B avoids impacting the Belstead Brook Valley Special Landscape Area to the north of Burstall Bridge. This is described in the COR as a specific concern and relatively unspoilt. It also contains many species of fish, trees, birds, animals and provides grazing meadows and footpaths for walkers ;
- the option of 2B north or south should really be decided by individuals impacted by either option. Having said this 2B south closely encircles a number of properties to the north of Burstall. 2B north is considered to have least impact;
- 2B is best alignment as it has lowest cost, shortest route and removes blight from Hintlesham when existing line is removed;
- 2B has less of an impact on nearby historic buildings;
- by keeping the new pylons as close as possible to those being retained, corridor 2B reduces the visual impact of the pylons on the area. Quite simply, if a row of pylons has a visual impact half a mile each side, then 2 pylon lines together will still impact a 1 mile visually impacted corridor. Whereas two single lines will create two x 1 mile visually impacted corridors – twice the impact;
- the cultural impact of corridor 2B is less negative than Corridor 2A;
- the economic impact of corridor 2B is positive relative to Corridor 2A because of the removal of 132kV lines.

Objections to 2B

- concern about a double line of pylons on corridor 2B which would have a significant impact on the landscape;
- concern about alignment of the pylons through Hintlesham village;
- effect of Corridor 2B on the Special Landscape Area;

- effect of alignment to north and west of Hintlesham woods. A new branch north of Ramsey Woods has appeared which has never been discussed – it is longer and uses virgin land and has more pylons, and is therefore more costly;
- the planned mitigation to protect Hintlesham Woods would result in the creation of a further wire 'box' to the south of the A1071 and Hadleigh Bee Farm which would be visually intrusive and highly detrimental to the character of the surrounding countryside, especially when viewed from the A1071 road;
- Corridor 2B south from Bramford to Mill Farm could be undergrounded to prevent new pylons in this area, would have less impact on Walnut Tree Farm, Orchardlands and Rose Cottage;
- Corridor 2B will make situation worse trapping Orchardlands in a triangle of pylons and would also have an adverse effect on Mill Farm;
- effect of Corridor 2B on "Forest School" at College Farm wood (health and safety). Second line of pylons will result in the closure of the "Forest School";
- impact of parallel overhead lines on College Farm area, including loss of land and effects on agricultural business and effect on B&B business at College Farm due to loss of beauty and peace;
- little or nothing in COR relating to impact on views/skyline towards College Farm from Norman House, Back Road;
- necessary surveys relating to area north of Ramsey Wood were carried out in retrospect and without authorisation. Environmental surveys at Rams Farm are a waste of money and do not take account of a number of species;
- further survey information on the use of hedgerows between Ramsey Wood and Keebles Grove (Hintlesham Corridor 2B) by dormice and bats is required before the impact of the overhead alignment in this area can be fully determined;
- more species are found within Corridor 2B than Corridor 2A;
- no reference to effects on period properties (Rams Farm and Ramsey Farm) in COR;
- one/two pylons on land at Rams Farm would make it difficult to farm land between Rams Farmhouse and Ramsey Wood;
- number of businesses affected along the 2B route whereas only two along the 2A route;

- 2B would harm views of motorists along A1071;
- Corridor 2B ignores and breaches 2, 4 and 6 of the Holford Rules.

Responses

7.37 The benefits of Corridor 2B referred to above are noted. Many of these points are reported in the COR.

7.38 The objections to Corridor 2B referred to above are noted. Many of these points are reported in the COR, including an assessment of the effects on the landscape of a double line of pylons.

7.39 The Holford Rules are useful guidance for routeing overhead lines but it is not always possible to follow every aspect of the guidance. Rule 2 refers to avoidance of areas of high amenity value which was considered in developing an alignment around Hintlesham Woods SSSI. Rule 4 refers to the relationship between an overhead line and its background, including trees, which Corridor 2B would follow in that area. Rule 6 refers to land which is flat and sparsely planted which does not apply to this study area.

7.40 The Special Landscape Areas in Study Area AB are designated in Babergh District Council's Local Plan and mean that the landscape is considered to be of local importance. These designations have been taken into account in assessing effects on landscape as a result of the overhead line options (COR 6.17).

7.41 It is accepted that the effects on businesses would be likely to be greater with a Corridor 2B option than with a Corridor 2A option.

7.42 The potential effects on Orchardlands have been reviewed. A Corridor 2B southern alignment would result in overhead lines passing to either side of the property. While the Corridor 2B southern alignment would be visible in the middle distance to the east, south and west, the indicative alignment described in the COR seeks to maximise distances between the alignment and the nearest properties (also including Walnut Tree Farm and Rose Cottage). Effects on Orchardlands of a connection in Corridor 2B could be avoided by either undergrounding through the area or adopting the northern alignment. Mill Farm would also benefit from these approaches.

7.43 Adopting a northern overhead alignment between Bramford substation and Mill Farm would result in an overhead line passing much closer to several residential properties compared to the distance between Orchardlands and a southern alignment and would have a negative effect on the setting of Burstall Hill Cottages, Old Hall House,

Norman's Farmhouse, Pond Hall and Park Farm, all Grade II listed buildings. In response to representations, consideration was also given to adopting a northern alignment from Bramford substation to tie in to the existing 400KV overhead line near Square Pastures Covert with the existing line then following the southern alignment to the west. While this would be feasible in engineering terms, it would be much more difficult to achieve in terms of the outages needed to carry out the construction activities. In addition the resulting overhead line configuration would require three deviation towers in the area close to Square Pastures Covert which would increase the visual impact in this area. The northern overhead alignment between Bramford and the connection point at Square Pastures Covert would result in an overhead line passing close to several residential properties at Burstallhill and would have a negative effect on the setting of the listed Burstall Hill Cottages.

7.44 The visual effects on College Farm as a result of a southern overhead alignment on Corridor 2B is noted in paragraph 6.85 of the COR. College Farm currently has views of a single 400kV line to the north of the property where it crosses arable land. A second 400kV overhead line, parallel and 85 metres to the south would bring a second overhead line closer to the house and this would have a negative effect on views and temporary effects during construction. The COR concludes that the effects on visual amenity as a result of an additional overhead line on a southern alignment on Corridor 2B would be moderate negative. This reflects the presence of the existing overhead line, which would limit the scale of change to existing views experienced as a result of an additional overhead line.

7.45 There is no reason on health and safety grounds why the Forest School could not continue if the interim alignment, as set out in the COR, were to be implemented. National Grid designs all of its systems to be compliant with ICNIRP[37] guidelines on exposure to electric and magnetic fields. An assessment of the potential impact of electric and magnetic fields will be included in the environmental impact assessment of the preferred connection design. National Grid's specialists on electric and magnetic fields will be available to meet with the operators and users of the Forest School to address their specific concerns if an alignment in this area were to be taken forward.

[37] International Commission on Non-Ionising Radiation Protection : Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields : 1998

7.46 The amount of land which would be permanently required to support the overhead line is limited and compensation is available to landowners who would be directly affected. In addition there will be detailed discussions held with landowners and tenants to seek to ensure that pylons are sited so as to minimise the effects on current land use operations. This would apply across the scheme, including College Farm and Rams Farm in Corridor 2B should the interim alignment, set out in the COR, be taken forward.

7.47 The visual assessment in the COR has been informed by on-the-ground assessment (which is presented on the plans which accompany the COR and are available on the project website). It is not possible to comment on the potential effect of options on every view. However views from Norman House would be most affected by a northern alignment on Corridor 2B and paragraph 6.81 of the COR does highlight this in the comment relating to 'properties on and to the immediate north of the A1071'.

7.48 The interim overhead alignment in Study Area AB described in the COR identified a preference for a '2B southern' alignment which it considered would have a lesser effect on Hintlesham village than an alignment in Corridor 2A (COR 6.76).

7.49 Habitat surveys and data searches were undertaken to inform the COR. The findings were presented to members of the public, community forums and statutory consultees. Detailed species surveys are currently being undertaken and the information from these surveys will inform the EIA. This will confirm the distribution of those species which may be affected by the project. As a matter of principle, National Grid seeks voluntary agreement from land owners to access their land to undertake these surveys and respects private property.

7.50 The potential effects on connectivity between the SSSI units (Ramsey Wood and Keebles Grove) have been considered in the COR. Bat and dormice surveys are currently being undertaken as part of the EIA and the findings of these surveys will inform mitigation. An overhead line on any alignment would oversail the hedgerows along its route and would not adversely affect habitat connectivity.

7.51 The effect on businesses is covered in the COR which identifies, for each alignment, the number of businesses which would have open views of the alignment. It differentiates between Corridors 2A and 2B in these terms and in terms of the potential effect on Hintlesham Hall and golf course.

7.52 Rams Farm and Ramsey Farm are not listed buildings. The effects on the visual amenity of these properties is considered in the COR (6.81, 6.85). The assessment in the cultural heritage section of the COR (as opposed to the section on visual amenity)

assesses the degree to which the alignment would result in the loss of significance or ability to appreciate designated heritage assets. In most cases, the installation of an overhead line within the setting of an unlisted building would result in no loss of significance and only a slight (minor) loss in ability to appreciate that building.

7.53 The effect of the overhead line options in Study Area AB on views from Rams Farm and to the north and west of Hintlesham Woods have been considered in the COR (6.81, 6.85 and Appendix A). The concept of an alignment passing to the north of Ramsey Wood was developed to explore the potential opportunity to minimise the effect on the nationally designated Ramsey Wood and Hintlesham Great Wood which had been an issue of concern to the relevant authorities. One of the purposes of the consultation was to seek views on this alignment.

7.54 The Corridor 2B northern and southern alignments would result in overhead lines passing to either side of Hadleigh Bee Farm. However the indicative alignments were defined so as to maximise distances between the alignments and the nearest properties. While both existing and proposed overhead lines associated with these alignments would oversail Pond Hall Road, the additional angle tower would be located on the south side of this road and views from the road and the affected properties would be partly screened by local vegetation. The Corridor 2A northern alignment would pass closer to Hadleigh Bee Farm and would result in greater effects on landscape and views. The Corridor 2A southern alignment would avoid a situation with overhead lines on either side of Hadleigh Bee Farm.

7.55 The effect of a Corridor 2B northern alignment on views from A1071 would be greater than that associated with a closely parallelled southern alignment. The backgrounding offered by Hintlesham Woods would help to minimise effects on landscape and views in this area. A Corridor 2A alignment would not require a crossing of the A1071 west of Hintlesham but would cross it near Burstall Bridge at a point where there are no overhead lines at present.

Issues

7.56 The following issues were identified relating to a **Corridor 2B Northern alignment**:

- a northern alignment of 2B is likely to intrude on Jubilee Cottage;
- a northern route would over-sail too many properties including Kate's Hill Cottage;
- the new line would bring the pylon closer to the cottages at Bushey Coopers Farm, Pond Hall Road which is of great concern regarding health and noise

issues. This new proposal could cause not only a Human Rights issue but a Health and Safety Issue too.

Responses

7.57 The objections to the northern alignment referred to above are noted. With the exception of health and safety and Human Rights issues (which are fully satisfied in all National Grid's activities), these points have been taken into account.

Issues

7.58 The following issues were identified relating to **undergrounding**:

- using National Grid's own baseline criteria for undergrounding, despite our area having the highest score for being undergrounded we were not considered;
- the COR does not consider or identify any options for undergrounding all or part of corridor 2A – not considered undergrounding section from substation to Burstall Bridge – this would make cumulative impact on Hintlesham and Burstall area minimal;
- the cost of partial undergrounding from Bramford to Burstall Bridge with an overhead line completing the connection on corridor 2A would be only double the cost of an entirely over head line solution;
- the Burstall and Hintlesham areas should be given priority for under grounding due to the close proximity to the Bramford sub-station and the large number of existing pylons already in the area;
- Corridor 2A around Hintlesham should be undergrounded;
- Undergrounding should be considered with Sealing End Compound to south and east of Hadleigh adjacent to woodland.

Responses

7.59 The comparison of options in the COR sets out that the landscape and visual benefits of an underground cable alignment in Study Area AB would not clearly outweigh any extra economic, social and environmental impacts in this particular study area. The COR identified the most appropriate route for an underground cable in Study Area AB taking account of factors including directness, the avoidance of environmental constraints and the need to limit disturbance during construction. Routeing an underground cable through Corridor 2A would convey no particular advantages over the underground cable route identified in the COR.

7.60 The COR assessed a sealing end compound location which would have been able to take advantage of the mature wooded belts to either side of Hadleigh Railway Walk to filter views of the compound.

7.61 The COR conclusion on undergrounding referred to above would also apply to proposals for partial undergrounding in Study Area AB made in representations. Representations have proposed that a principal disbenefit of an overhead line on Corridor 2A (the introduction of a new overhead line between Burstall Bridge and Bramford where there is none at present) could be ameliorated by putting this section of the connection underground. There would be benefits from a partially underground route on Corridor 2A, which would result in the avoidance of the negative effects on the landscape and views as a result of a new overhead line on a southern alignment on either Corridor 2A or 2B in the vicinity of Burstall. A partial underground route would also avoid cumulative effects as a result of other current proposals at Bramford Substation.

7.62 Such a scheme would require the location of a sealing end compound at Burstall Bridge. A 400kV sealing end compound near Burstall Bridge is likely to lead to some localised negative effects on the landscape and views. It could also have a direct physical impact on buried archaeology (capable of being mitigated) and has the potential to affect the setting of Fen Farmhouse which has an historic association with the landscape in which it is situated and an open visual relationship with the surrounding agricultural landscape.

7.63 The lifetime cost of a part underground part overhead connection on Corridor 2A is estimated to be of the order of £80m, compared to the life time cost of an entirely overhead connection on Corridor 2A of between £42m and £47m, as noted in the COR (6.212).

7.64 An overhead line on a southern alignment in Corridor 2B would result in a lesser effect on the landscape than a part underground cable, part overhead line on Corridor 2A, as the effects of 400kV overhead lines on the landscape in Study Area AB would be minimised. It would also affect views from fewer properties than a part underground cable, part overhead line option on Corridor 2A. If the southern alignment in Corridor 2B is adopted, there would also be a minor positive effect in the vicinity of Corridor 2A where around 4km of 132kV overhead line would be removed from the landscape between Burstall Bridge and west of Hintlesham and not replaced by a new overhead line.

Influence on scheme design

7.65 Following further discussion with English Heritage regarding the potential effects of the interim alignment on the setting of Grade I listed Hintlesham Hall, it has been agreed that further work, including the preparation of visualisations, will be undertaken to illustrate these effects. More detailed consideration will also be given to the effects of alternative alignments, including partial undergrounding, on those factors which are material to decisions on which alignment to take forward.

7.66 It follows from the above that the preferred alignment in Study Area AB cannot be confirmed until English Heritage has received, and made further representations on, this additional information. In responding to such a representation and reaching a decision on the alignment to take forward in Study Area AB, National Grid will also have regard to the other representations referred to in this chapter of the report.

7.67 An assessment of the socio-economic effects of the proposed connection, guided by a scoping opinion from PINS, will be incorporated in the environmental impact assessment which will accompany the application for Development Consent.

7.68 As a matter of course, the detailed design of the alignment will specifically address, as appropriate, effects upon properties at: Orchardlands, Rose Cottage, Walnut Tree Farm, College Farm, Rams Farm and Hadleigh Bee Farm. These receptors will be referenced in the environmental impact assessment which will accompany the application for Development Consent.

8 ISSUES AND REPRESENTATIONS - STUDY AREA C (BRETT VALLEY)

Issues

8.1 The following issues were identified :

- landscapes outside the AONB could be of equal or better quality than those within the designated area and the Brett Valley is a natural extension to the AONB;
- the quality of the Brett Valley had been underestimated and object to the description of the Brett Valley (a Special Landscape Area) as "small and unremarkable", "not particularly noted for its scenic properties" and "not being particularly sensitive";
- the Brett Valley is a special landscape, much loved by local residents, who have a detailed understanding of the landscape not recorded in the assessment;
- the Brett Valley landscape cannot accept more pylons;
- the presence of the existing overhead lines already impacts this landscape to a maximum level. It is our view that because of the aesthetic damage of these lines, to an otherwise special landscape, there is no tolerance to accept further impact;
- an underground cable option would have a major positive effect on the landscape;
- Hadleigh is an ancient town and environs including rivers, woodland and medieval approaches such as Benton Street should be preserved;
- potential effects on the settings of Grade II* listed Benton End Farm and Hadleigh Conservation Area, including views out of and across the designated area;
- Brett Valley provides important settings and historic settlements in Suffolk including Hadleigh, home to Watt Tyler and including Toppesfield Bridge and Benton Street. Benton End is also an important historic feature and the existing 400kV could be undergrounded to improve the setting of the historic town and alleviate those communities to the south whose views are blighted by wirescape;

- the existing overhead lines have a major impact on residents on Upper and Lower Layham, including Pipkin Lodge, and the southern edge of Hadleigh and the position would worsen if an overhead option is selected for the connection – such effects had been underestimated in the report;
- comparing the extent of recorded remains in the Stour Valley, archaeological remains should be no barrier to undergrounding (including the siting of sealing end compounds) in the Brett Valley;
- potential effects of a sealing end compound on the setting of Benton End Farm and Roman Villa remains have been overstated;
- undergrounding in the Brett Valley would cause less disturbance to ecology than in the Stour Valley;
- the effect of undergrounding on ecology and woodland in the Brett Valley has been overstated;
- an alignment close to the 132kV alignment should be followed in Study Area C to minimise impact on woodland and hedgerows;
- the importance of the East Anglian School of Painting and Drawing and the influence of the landscape of the Brett Valley should be taken into consideration;
- the different treatment of elements of the factual descriptions of the Brett Valley and Stour Valley (including references to the presence of sewage treatment works in the landscape, and the relationship to Dedham Vale) introduces bias into the reporting;
- an overhead alignment may cause problems for helicopters training at Wattisham airfield;
- disregard by some National Grid drivers of the 7.5 tonne weight limit on some of the roads in Layham, the subsequent damage done to verges and banks in the village, and whether compensation is payable.

Responses

8.2 The differences between the Dedham Vale AONB, the Stour Valley and the other study areas are set out in the landscape assessment contained in the COR. Other study areas may share landscape characteristics common to the Dedham Vale AONB and Stour Valley and this is acknowledged in the county-level landscape character assessment. However, the AONB as a nationally designated landscape is of national value and the value of this landscape influences its capacity to accommodate an

additional overhead line. The project must take particular account of designated landscapes which are a material consideration in determining which alignment to take forward.

8.3 The Brett Valley forms part of the same river catchment as the Dedham Vale AONB. However, there are a number of factors which mean that the landscape of the Stour Valley is assessed in the COR as being of greater than local value, compared to the landscape of the Brett Valley which is assessed as being of local value. The value of the landscape influences the capacity of the landscape to accommodate an additional overhead line. The distinguishing factors in the Stour Valley include:

- the cultural associations within the Stour Valley, compared to other study areas.
- the values of the Stour Valley as expressed in the intention of the Dedham Vale AONB and Stour Valley Project to seek an extension of the AONB into Study Area G and the current management of the study area by the Project, alongside the AONB.
- the scenic qualities and value of the landscape through which the route corridor passes in the Stour Valley which are judged to be greater than those through which the route corridor passes in the Brett Valley.

8.4 As far as National Grid is aware there are no proposals to extend the boundary of the AONB to encompass the Brett Valley. The Dedham Vale and Stour Valley Management Plan makes no reference to seeking to extend the AONB up the Brett Valley. The Brett Valley landscape is assessed as being of local value.

8.5 The landscape and visual assessment in the COR has been carried out by professionals working as consultants for National Grid who are qualified and experienced in the assessment of landscape and views. The judgement made in the COR on the quality of the landscape within the Brett Valley has been informed by a combination of desk-top study, consultation and on-the-ground assessment.

8.6 The term 'unremarkable' has been used in the COR to describe the landscape character of Study Area C by landscape professionals who carried out landscape and visual assessment on-the-ground to inform the COR. The word is used to highlight the relatively commonplace character of the landscape found in Study Area C and is not meant as a derogatory comment about the attractiveness of the landscape. This adjective is commonly used by landscape professionals and can be found in landscape character assessments published by county and district councils, as well as in

landscape and visual assessments prepared by other landscape consultants and in decisions taken by Planning Inspectors.

8.7 The Special Landscape Area which covers this part of the Brett Valley is a designation in Babergh District Council's Local Plan and has been taken into account in assessing effects on landscape as a result of the overhead line options, although this 'local level' designation means that the landscape in Study Area C is of no greater than local importance. The eastern half of the Stour Valley is also designated a Special Landscape Area in Babergh District's Local Plan although this landscape has been assessed to be of greater than local importance for the reasons given above. The landscape and visual assessment in the COR has been informed by the 'Guidelines for Landscape and Visual Impact Assessment' (Landscape Institute and IEMA, 2002). In line with this guidance, the value of the landscape forms part of the judgement as to the sensitivity of the landscape and the local value of the Brett Valley landscape (as opposed to the Dedham Vale AONB and Stour Valley), combined with the presence of the existing overhead line, means that it is not considered a particularly sensitive landscape.

8.8 It is acknowledged that this landscape is special to those who live in it and use it and this is reflected in the COR which judges the landscape of Study Area C to be of local value. The workshop sessions held at the Community Forums in November 2011 sought to gather these views and also information on why the landscapes along the proposed route corridor are considered special by their inhabitants. This feedback, along with other consultation responses received since preferred route corridor announcement, has been taken into account in the recommendations made in the COR. The environmental baseline plans which accompany the COR and which record the feedback gathered from the Community Forums and public information events are on the project website.

8.9 The assessment of landscape and views within the COR has been informed by the 'Guidelines for Landscape and Visual Impact Assessment' (Landscape Institute and IEMA, 2002). In line with this guidance, the existing overhead lines form part of the baseline conditions of landscape and views, against which the effect of an additional overhead line is assessed. In particular, the presence of the existing 400kV overhead line, to which the new overhead line would be very similar in terms of height and design, influences the landscape capacity of Study Area C to accommodate an additional overhead line and also influences the magnitude of effect (scale of change compared to the existing).

8.10 The COR is clear that an additional overhead line in Study Area C would have a negative effects on landscape and views. However, the moderate negative scale of effect would be greater if there were no overhead lines present.

8.11 The preferred route corridor 2, was selected in response to the feedback received from statutory consultees and the public and it was considered that it would have the least environmental effect because this route corridor already contained a 400kV overhead line as well as a lower voltage line, which runs broadly parallel (and which would be removed).

8.12 The COR (Paragraph 7.29) compares the negative effect on landscape character of a new overhead line on a northern alignment and a new overhead line on a southern alignment in Study Area C. The COR records that a new overhead line would have a moderate negative effect on landscape character whether it is to north or south of the existing overhead line in Study Area C. However, these paragraphs are noting that an overhead line on a southern alignment would have a lower negative effect than an overhead line on a northern alignment because the existing 132kV overhead line is to the south and this would lessen the magnitude of effect (scale of change) to landscape character and would result in a slightly lower overall negative effect.

8.13 In considering the landscape and visual effects of an underground cable route in Study Area C compared to an overhead line option, the COR states that an underground cable route would avoid the moderate negative effects associated with an overhead line option. The judgement of 'moderate negative' reflects the continuing presence of the existing 400kV overhead line which limits the scale of change to landscape and views.

8.14 The landscape and visual effects of an underground cable route in Study Area C in the long-term is assessed as neutral (no change).

8.15 A minor positive effect would be experienced as a result of an underground option (as the 132kV overhead line would be removed and not replaced). The judgement of 'minor positive' reflects the size of this overhead line and the continued presence of the existing 400kV overhead line. If the existing 400kV overhead line were being removed from the valley and the existing 132kV overhead line were to remain, or if both the existing 400kV and 132kV overhead lines were being removed then these changes would be judged as moderate or major positive respectively.

8.16 Chapter 7 of the COR assesses the environmental effects, socio-economic effects and cost of overhead and underground alignment options in Study Area C. This includes the assessment of effects on views from the southern edge of Hadleigh and Upper

Layham and Lower Layham, the setting of listed buildings (including Benton End Farm) and the setting of the conservation area which extends along Benton Street.

8.17 Toppesfield Bridge is a Scheduled Monument and Grade II* listed building in Hadleigh. It is in the town and outside of the study area, and the town prevents inter-visibility between the asset and the proposed alignments; therefore this asset did not specifically form part of the assessment. However, it is reasonable to conclude that the setting of the bridge includes the Hadleigh conservation area, so the comments relating to that are equally relevant to an assessment of the setting of the bridge.

8.18 In view of the concerns raised initially by English Heritage (also identified by other parties) regarding the potential effect on Hadleigh Conservation Area and Benton End Farm, a site meeting was held with a representative of English Heritage. Following this meeting, English Heritage concluded (as noted in paragraphs 6.19 and 6.20) that the effects on the setting of the grade II* listed Benton End, and the setting of the Hadleigh conservation area, from the south, on the road from Upper Layham, *"do not appear to be as significant as English Heritage had predicted"* and that the effect on views from the Benton Street area, and from further afield across Hadleigh*, "would not be made significantly worse by the proposed additional line (replacing the present 132 kV line) especially if special consideration were given to the spacing of towers*".

8.19 The cultural heritage baseline information gathered to inform the COR did not demonstrate any connection between Wat Tyler and Hadleigh and no further evidence has been found to support this.

8.20 Effects on views from houses in Upper and Lower Layham and Hadleigh have been assessed in the COR. As previously stated, the assessment of landscape and views within the COR has been informed by the 'Guidelines for Landscape and Visual Impact Assessment' (Landscape Institute and IEMA, 2002). In line with this guidance, the visual survey work carried out on the ground has assessed the existing views of the overhead lines in Study Area C from public viewpoints, such as roads, public rights of way and public open space, which can be accessed by anyone and are experienced by the greatest number of people. Private viewpoints were also considered, such as houses or businesses. The visual assessment plans which accompany the COR and are available on the project website, show the assessment of this range of viewpoints on one plan so that it is clear that although a resident may not have a view from their house, when travelling from their house into the wider area they would be likely to have an open view of a new overhead line from a road or public footpath. This has been taken into account in the assessment of views in the COR.

8.21 However, in view of the concerns raised by Layham Parish Council and others regarding the assessment of potential effects on Layham, the findings of the assessment have been checked. The plan referred to by the Parish Council had been superseded by the assessment plan which accompanied the COR and which was made available on the project website.

8.22 The visual assessment has been carried out from publicly accessible locations by two chartered landscape architects experienced in landscape and visual assessment. There are a number of bungalows in the Brett Green estate with tall garden fences and the orientation of some two storey houses in the estate and intervening buildings also limits views. Open views of the existing 400kV line are not available from every house at Brett Green. In line with the 'Guidelines for Landscape and Visual Impact Assessment', the assessment of properties with 'heavily filtered views' has taken into account the effects in winter when there are no leaves on trees.

8.23 In relation to effects on visual amenity for residents at Upper Layham, Paragraph 7.50 highlights that '*there are a mixture of open and filtered views from a number of properties in Upper Layham.....The existing overhead lines appear particularly prominent in views along the valley from Upper Layham, where the closest property is about 200m from the existing 132kV overhead line and a further 100m from the 400kV overhead line*.'

8.24 The COR recognises that although the scenic quality and rarity of views in Study Area C are not of national importance, these views are of local importance and National Grid acknowledges that local residents in particular value these views.

8.25 The COR identifies that the potential for buried archaeology is high in the Brett Valley, based on both the number and type of known buried archaeology heritage assets in and adjacent to this study area, as well as considering the topography and geology. The magnitude of the negative effect of an underground cable on buried archaeology was consequently assessed as 'high'. However, the ability to mitigate these negative effects was taken into account and the overall scale of effect of an underground cable on buried archaeology in Study Area C was determined to be moderate negative. The same conclusion was reached in Study Area G.

8.26 The conclusions with regard to the interim alignment for Study Area C acknowledged that mitigation is available for the negative effects on buried archaeology, through archaeological investigation and recording, although buried archaeology is a finite and non-renewable resource and preservation in situ is preferred when possible. However, this was only one of a number of considerations that the COR assessed in

determining the interim alignment. Buried archaeology was not, in itself, a determining factor in the conclusions reached with regard to Study Area C.

8.27 If an underground cable route were to be established in Study Area C in isolation, then the siting of sealing end compounds would be required at both the eastern and western end of the underground section. At the eastern end, although the sealing end compound would be to the east of the Railway Walk, the setting of Benton End House includes the wider agricultural landscape (given the farming association between the listed buildings and the landscape in which they are situated). The magnitude of effect is not discussed in the COR, and it is acknowledged that the overall scale of negative effect is likely to be minor at most.

8.28 Archaeological and historical research has shown that a Roman villa is typically surrounded by a villa landscape. This can include ancillary buildings (e.g. a bath house or temple), a settlement enclosure, field systems and in some cases cemeteries. It is possible that buried archaeology associated with the villa extends into the area of the sealing end compound that has not been previously identified. However, mitigation is available for the negative effects of the construction of a sealing end compound on buried archaeology and this was not, in itself, a determining factor in the conclusions reached with regard to Study Area C.

8.29 Although there are differences in the ecology present in the Brett and Stour valleys, the COR assessment of the underground option in these areas identifies post-mitigation impacts for an underground option as moderate negative in both Study Area C (Brett Valley) and Study Area G (Stour Valley). There are no County Wildlife Sites within Study Area C and notable flora and fauna are not regarded as insurmountable issues for an overhead or underground alignment in Study Area C. The COR concludes that there is no overriding ecological reason to recommend undergrounding over other connection options. It does not state that effects on ecology would preclude undergrounding in Study Area C. It identifies that effects on ecology in Study Area C are fewer (Minor) with a southern overhead option than with either an underground option (Moderate) or a northern overhead option (Moderate).

8.30 The interim preferred alignment within Study Area C follows the existing 132kV alignment to minimise impacts on woodland and hedgerows. No additional losses of these habitats are predicted within Study Area C from a southern alignment, although the COR recognises the potential for some small scale temporary clearance of ground vegetation where the existing 132kV crosses woodland habitat and where scrub may have developed under the current easement.

8.31 With regard to undergrounding, the COR (paragraph 7.110) highlights the permanent loss of trees within two linear areas of woodland. Layham Parish Council comments that the linear woodland in the east of the Study Area could be crossed using HDD. It also comments that an underground crossing of the linear plantation in the west would lose only a small proportion of low value planting. The COR identifies locations where HDD would be used to install the cables. This includes the linear woodland along Hadleigh Railway Walk.

8.32 The innate value of the mature linear plantation in the west of Study Area C is lower than the value of areas of semi-natural ancient woodland. However, the value of a receptor and the potential for impacts on that receptor is considered in light of both its innate value and its functional value (does it support valuable species, does it act as a wildlife corridor). The relatively lower value of this woodland is recognised within the COR assessment. The High negative impact on woodlands in Study Area C (from an underground option) is considered in relation to the value of individual woodlands. High impacts on a woodland of national or county value will have a greater overall magnitude of effect than high impacts on a woodland district or local value. The small loss of linear woodland is not a significant factor in the overall magnitude of effect assessed for an underground option in Study Area C.

8.33 The COR recognises that some of the hedgerows affected by an underground option within Study Area C are already fragmented and assesses impacts on these habitats (prior to mitigation) as Moderate. This is lower than other study areas where impacts on hedgerows are largely judged as High.

8.34 The association with the East Anglian School of Painting and Drawing forms part of the baseline conditions of the landscape which has been taken into account in the assessment of effects on the landscape in Study Area C and in determining whether undergrounding would be appropriate in the study area (COR 7.12, 7.152). The use of the phrase 'lesser known' in relation to Sir Cedric Morris refers to a direct comparison between Gainsborough and Morris, and not as a comparison between Nash and Morris. It is the Stour Valley's cultural associations with Gainsborough in particular which has contributed to the value placed on the landscape of Study Area G and National Grid's proposal to use underground cabling for this part of the connection. For the reasons set out in the COR, National Grid does not agree that the landscape of the Brett Valley is as important as those of Dedham Vale and the Stour.

8.35 The COR refers to sewage works which exist in the Stour Valley and in the Brett Valley. In the Stour Valley the sewage works is approximately 1km from the existing

400kV overhead line, whereas in the Brett Valley it is approximately 0.5km from the existing 400kV overhead line. Separation from the study area and the size of the valley mean that the sewage works in the Stour Valley does not encroach on the character of the agricultural landscape in the same way.

8.36 There is a distinction made in the COR between the Stour Valley and the Brett Valley, as the Stour Valley contains the River Stour, the main river, which flows downstream through the Dedham Vale. Paragraph 7.17 of the COR states that 'the River Brett is a tributary of the River Stour which flows some 5km to the south of this study area.' The Brett is connected to the Stour as part of the same river catchment, but is a tributary valley and has a different scale from the Stour Valley.

8.37 With regard to effects on helicopters training at Wattisham airfield, NATS has examined the proposed development from a technical safeguarding aspect and concluded that it does not conflict with safeguarding criteria. No objections have been raised by NATS to this proposal.

8.38 The use of roads in the Layham area by National Grid staff working on the current overhead line upgrade project has been noted and will be dealt with by the project manager. National Grid vehicles are equipped with instruments to measure speed and position and this information can be analysed to identify any enforcement issues.

Influence on scheme design

8.39 No further changes to the interim alignment are proposed in this study area.

8.40 The crossing of the Brett Valley and the potential effects on the Layhams are recognised as being locally sensitive. The siting of towers will be carefully considered and a detailed assessment undertaken to ensure that the visual impact for residents of properties in the area is minimised.

9 ISSUES AND REPRESENTATIONS - STUDY AREA D (POLSTEAD)

Issues

9.1 The following issues were identified :

- the study area is as attractive as Dedham Vale AONB and SSSI should be treated same as AONB;
- insufficient information has been provided to enable the nature and scale of the impact of the preferred option on the adjacent AONB and its setting to be determined;
- additional pylons in Study Area D will be highly damaging to the skyline and be contrary to the siting guidance in the Holford Rules;
- a sealing end compound would result in major industrial development into the heart of the rural parish of Polstead, affecting one of the most attractive and most heavily visited parts of the AONB (the Dollops Wood bluebell valley) and would involve a most intrusive form of permanent access, by metalled road, from a single track country lane, across open country and into the charming small valley that leads down to the northern end of Dollops Wood;
- the visual impact of twin overhead lines and a sealing end compound located to the west of Heath Road which is part of a network of paths and lanes valued by local residents and tourists;
- sealing end compound should be moved east north east beyond the woodland at Polstead Heath;
- alternative sites were suggested for a sealing end compound to the east of Millwood Road or in the redundant part of Layham Quarry to minimise the effects on Polstead Heath and on views from the AONB;
- the effect of overhead lines surrounding Valley Farm on views from this property and on the setting of this Grade II listed building;
- the impact on the views of walkers and cyclists using Suffolk cycle route;
- effect of parallel overhead lines and structures on properties in Polstead;

- the potential effect of a northern alignment on properties in Millwood Road, including The Cottage on Clay Lane;
- oppose the northern alignment as it will cross through Millfield Wood, Valley Farm Wood, Broomhill, and Appletree Wood – all of which are ancient woodland;
- what is the reason for the underground cable route in Study Area D deviating to the north.

Responses

9.2 The differences between the Dedham Vale AONB and Stour Valley and the other study areas are set out in the landscape assessment contained in the COR. Although other study areas may share landscape characteristics common to the Dedham Vale AONB or Stour Valley, the AONB is a nationally designated landscape of national value. In the Stour Valley there are a number of factors which mean that this landscape is assessed in the COR as being of greater than local value, compared to Study Area D which is assessed as being of local value. The distinguishing factors in the Stour Valley include:

- the cultural associations within the Stour Valley, compared to other study areas;
- the values of the Stour Valley as expressed in the intention of the Dedham Vale AONB and Stour Valley Project to seek an extension of the AONB into Study Area G and the current management of the study area by the Project, alongside the AONB;
- the scenic qualities and value of the landscape in the Stour Valley.

9.3 The landscape assessment (COR 8.21, 8.40) considers the indirect effects on the Dedham Vale AONB from part of which there are likely to be views of a connection option. The assessment of indirect effects is based on the landscape and visual assessment carried out in the field. The plans which present this information are available at http://www.bramford-twinstead.co.uk/library-stage-2.aspx . The COR describes the distances between the AONB and parts of the connection which would be visible. As reported, distance and the presence of the existing overhead line in views would do much to limit indirect effects on the AONB. The indirect effects as a result of intervisibility between a new overhead line in Study Area D and the AONB are assessed as being minor negative.

9.4 The preferred route corridor 2, was selected in response to the feedback received from the public and statutory consultees and it was considered that it would have the

least environmental effect because this route corridor already contained a 400kV overhead line as well as a lower voltage line, which runs broadly parallel (and which would be removed). The corridor inevitably crosses valleys and intervening plateaus, as would any route between Bramford and Twinstead Tee. The Holford Rules are useful guidance for routeing overhead lines but it is not always possible to follow every aspect of the guidance.

9.5 The landscape and visual effect of a sealing end compound at the western end of the study area in combination with an additional overhead line (in Study Area D) has been considered in the COR (12.10-12.14) and is also addressed in Appendix H of the present report. The COR explains that in terms of landscape and views it is generally not possible to hide an approximately 50m high 400kV overhead line by planting hedgerow or trees (and that this cannot be relied on as it would be subject to the agreement of the landowner). In contrast, a sealing end compound would be at a maximum height of 16m. The interim sealing end compound locations have been chosen because of nearby woodland and landscape features to assist with screening. Woodland and tree planting could be carried out to further screen the compound in the long-term reducing the additional and localised scale of effect of the sealing end compound. A termination pylon would be needed as part of the sealing end compound and this would be seen in the context of the existing overhead line (which forms part of the baseline conditions against which these proposals are assessed). In the long-term the cumulative effects on landscape and views of an additional overhead line in combination with the sealing end compound would be no greater than moderate negative.

9.6 Representations suggested that the potential effects on the AONB and particular features, including Dollops Wood, could be avoided if the sealing end compound were located further to the east. A sealing end compound to the east of Millwood Road would be in a more exposed position and its effects on the landscape and views would be more difficult to mitigate than at the proposed site. A sealing end compound in the redundant part of Layham Quarry would have benefits to landscape and views as it would extend the underground cable route across at least one third of Study Area D and the compound itself could be screened by landform and planting in the confines of the quarry.

9.7 The environmental effects of a sealing end compound have to be considered in relation to the additional cost that would be incurred for a longer underground cable route and whether the environmental effects of an alternative location, as well as the benefits associated with a greater length of undergrounding would clearly outweigh

any extra economic, social and environmental impacts. Extending the underground cable section for a further 1.5km to Layham Quarry would cost an additional £33m.

9.8 The COR concluded that the benefits to landscape and views as a result of an underground cable route in Study Area D would not clearly outweigh the extra economic, social and environmental impacts and the additional representations that have been made do not alter that conclusion. That being the case, a proposal to extend undergrounding across more than half the study area (to the west of Layham Quarry) could not be justified. National Grid believes that with mitigation the environmental effects of a sealing end compound at its proposed location west of Heath Road would be acceptable in planning terms.

9.9 The effect on Valley Farm has been assessed in the COR (8.54, 8.84) and was taken into account in identifying an interim alignment. The magnitude of effect would be lessened by the existing mature trees that screen the listed building and the scale of change would be moderated by the presence of the 132kV overhead line. Adopting an alignment following that of the 132kV overhead line would minimise the effect on woodland to the east and west of Valley Farm (some of which is a local wildlife site). Moving the alignment further to the south would result in a major effect on such features and could bring the alignment closer to other listed properties. The effect on Valley Farm could be avoided by undergrounding however the COR concluded that the benefits from the use of underground cables as an alternative to an overhead line in Study Area D, which is assessed as not being particularly sensitive, will not clearly outweigh any extra economic, social and environmental impacts and the additional representations that have been made do not alter that conclusion.

9.10 The effect on views of walkers and cyclists using the Suffolk cycle route as a result of a new overhead line in Study Area D has been assessed in the COR (8.46) and on the visual assessment plans on the project website (http://www.bramford-twinstead.co.uk/library-stage-2.aspx).

9.11 The effect on views as a result of a new overhead line in Study Area D has been assessed in the COR (8.52) and on the visual assessment plans.

9.12 In preparing a northern overhead alignment option which parallels the existing overhead line as far as possible (at an 85m offset) it became clear that some residential property would be oversailed. Where this would occur, National Grid considered alternative routes to avoid oversailing and sought to use these wherever they did not extend significantly beyond the defined limits of the route corridor. The potential effects of a northern alignment on residential properties and woodland,

including Millfield Wood, at the western end of Study Area D are recorded in the COR and influenced the recommendation that the interim alignment in Study Area D should not follow a northern alignment.

9.13 The visual assessment carried out to inform the COR (see plans on project website) has considered the effect on views that would be experienced from 'The Cottage' on Clay Lane. The interim overhead alignment proposed by National Grid in this study area is a southern alignment, which would see the removal of the existing 132kV overhead line which currently runs immediately to the north of 'The Cottage' and the construction of a second 400kV overhead line further north and closely paralleled with the existing 400kV overhead line. This would minimise the scale of change to views from this property.

9.14 All things being equal, a straight line for a cable route would be sought but this must be adjusted to avoid environmental constraints. The design of the cable route has sought to minimise impact on woodland and County Wildlife Sites, bearing in mind the possibility of directional drilling to achieve that in some instances. As this comes with greater risk in installation and operation, and greater cost, its use would be an exception rather than the rule. Study Area D is not an area where underground cables are proposed.

Influence on scheme design

9.15 No further changes to the interim alignment are proposed in this study area.

9.16 The detailed siting and design of the sealing end compound to the west of Heath Road, including access arrangements and the design of mitigation measures such as landscaping and planting, will be carefully considered and will take account of the concerns identified in representations, including the effect on users of local paths and lanes and the setting of, and approaches to, Dollops Wood.

9.17 The effect of the alignment on Valley Farm (in terms of both its setting and views from the property) will be taken into account at the detailed design stage. In particular the siting of towers will be an important factor in mitigating the effect of the scheme on this property.

10 ISSUES AND REPRESENTATIONS - STUDY AREA E (DEDHAM VALE AONB)

Issues

10.1 The proposal to employ underground cables through the AONB received a broad measure of support from both statutory bodies and the public. A number of comments were made regarding the effect of the sealing end compounds required to facilitate the undergrounding. These compounds would be located just outside the boundaries of the AONB in Study Areas D and F. Such comments are identified below. The following issues were identified :

- whether the existing 400kV overhead line could be placed underground through the AONB and what the consents process would be;
- the visual impact of the connection of underground section to overhead lines on Blackthorn Lodge, Brick Kiln Lane;
- the effect of sealing end compounds on views of AONB enjoyed by walkers and tourists;
- the effect on views towards Assington from the AONB;
- the effect of the sealing end compound on the rural community around Heath Road;
- a suggestion that the sealing end compound proposed east of the AONB should be moved beyond the woodland to the east of Polstead Heath;
- concern that pylons will still be visible from the AONB and that those views recorded by Gainsborough and Constable need to be preserved;
- effect on business at Peyton Hall Farm.

Responses

10.2 Ofgem is looking into the possibility of funding undergrounding of some parts of the existing network in National Parks and AONBs but that this is far from resolved. The existing 400kV overhead line is operating under existing consents and has not yet reached the end of its asset life. The economic implications of replacing it with underground cables would not be consistent with National Grid's statutory and licence

duties. There is no requirement to underground the existing 400kV line to meet the identified need for this project.

10.3 At the western end of this section of the route, it is proposed to site a sealing end compound to the west of Boxford Fruit Farm where there is an opportunity to locate a compound adjacent to existing tree planting along the boundary to the orchard. A compound at this location would have a minor negative effect on landscape character and visual receptors in the long term, following establishment of supplementary planting and given the wider benefit of undergrounding to the east. Views from Blackthorn Lodge would benefit from the removal of the 132kV overhead line and any views towards the proposed sealing end compound would be screened by the intervening planting and structures associated with the commercial orchard. Further information on the landscape and visual implications of this sealing end compound are provided in Appendix H.

10.4 The effect on views of the AONB experienced by walkers and tourists as a result of a new overhead line in each of the study areas has been assessed in the COR as part of the visual assessments in Chapters 6 to 11 and is also shown on the visual assessment plans on project website (http://www.bramford-twinstead.co.uk/library-stage-2.aspx).

10.5 Views towards Assington from the AONB presently include both 400kV and 132kV overhead lines and are influenced by topography and intervening woodland/orchards. There is likely to be little effect on these views with a southern overhead alignment in place.

10.6 Issues relating to the sealing end compound at the eastern end of the underground section through the AONB are referred to in paragraph 9.5.

10.7 The landscape assessment considers the indirect effects on the Dedham Vale AONB where there are likely to be views of a connection option from part of the AONB. The assessment of indirect effects in the COR is based on the landscape and visual assessment carried out in the field. The plans which present this information are available at http://www.bramford-twinstead.co.uk/library-stage-2.aspx . The COR describes the distances between the AONB and parts of the connection which would be visible. As reported, distance and the presence of the existing overhead line in views would do much to limit indirect effects on the AONB. The indirect effects as a result of intervisibility between a new overhead line in Study Areas D and F and the AONB are assessed as being minor negative.

10.8 The effect of a northern alignment on views from Peyton Hall Farm is described in the COR (9.50). The effect of a southern alignment would be less as the existing 400kV overhead line would intervene in views. As it is, the interim alignment proposes that this section of the route be placed underground which will avoid visual effects on the property.

Influence on scheme design

10.9 No further changes to the interim alignment are proposed in this study area.

10.10 The detailed design of the sealing end compound will take into account views from nearby properties to ensure that effects on their visual amenity are minimised.

11 ISSUES AND REPRESENTATIONS - STUDY AREA F (LEAVENHEATH/ASSINGTON)

Issues

11.1 The following issues were identified :

- insufficient information has been provided to enable the nature and scale of the impact of the preferred option in Study Area F on the AONB and its setting to be determined;
- whether it would be better to underground in Study Area F to assist in the preservation of the landscape and achieve a sense of continuity;
- the desirability of undergrounding through Study Area F to avoid a requirement for two sealing end compounds to be located within a short distance of each other in the study area and impacting on the area and the setting of the AONB and the Stour Valley;
- the sealing end compounds in Study Areas F and G will be sited in the projected extension of the AONB;
- the desirability of undergrounding through Study Area F to avoid effects on views from the AONB and Stour Valley;
- effect of views from St Edmund's Way, Stour Valley Path and Stoke by Nayland golf course and B1068 –taking into account the frequency of pylons and intensity of effect;
- visibility of the existing 400kV pylons visible from Park Road (the B1068 leading into Stoke by Nayland from the east), St Edmund's Way, by-road running north from Nayland, the B1068 between Stoke by Nayland village and Keeper's Lane and the Stour Valley Path in Stoke by Nayland Parish;
- the cost of undergrounding the section of the connection in Study Area F, compared to the cost of two sealing end compounds and a section of overhead line in area F;
- undergrounding should also be considered to provide security from the possibility of terrorist attacks, and increased security of supply that would result from having two different technologies, in the event of failure of one of them;

- the effect of the alignment to the South of 'Hill View' which would leave this property sandwiched between two overhead lines and move the line closer to Woodthorpe's Farm, (resulting in further harm);
- an alignment must be considered that does not necessitate felling the line of poplars north of Mill Farm as these form a valuable barrier. Removal would harm views from Mill Farm, Assington which could harm country craft business and views from holiday cottage;
- effect of a sealing end compound on properties off Stoke Road;
- effect on views from Leaven Hall;
- effect on views from Hunters Barn, Stoke Road;
- effect on Outstanding Wildlife Area of Arger Fen;
- effect on farming on land at Stanton Farm;
- effect of noise from overhead lines close to properties on Stoke Road;
- disruption to village life during construction in Leavenheath parish;
- confirmation required that there will be no overhead line north of the existing 132kV line close to Barracks Road as this would impact significantly on properties in Barracks Road.

Responses

11.2 Chapter 10 of the COR assesses the environmental effects, socio-economic effects and cost of overhead and underground alignment options in Study Area F. The assessment considers the indirect effects on the Dedham Vale AONB and Stour Valley where there are likely to be views of a connection option from part of the these areas. The assessment of indirect effects in the COR is based on the landscape and visual assessment carried out in the field. The plans which present this information are available at http://www.bramford-twinstead.co.uk/library-stage-2.aspx The COR describes the distances between the AONB and Stour Valley and parts of the connection which would be visible. The plan - G1980.566a - which accompanies the COR shows the extent of the existing 400kV overhead line from selected viewpoints. There are some views from roads on the AONB boundary of the existing 400kV overhead line on higher ground, however these views are at a distance of over 1km and a new line would be viewed in the context of the existing line.

11.3 As reported, distance and the presence of the existing overhead line in views would do much to limit indirect effects on the AONB and Stour Valley. The indirect effects as a result of intervisibility between a new overhead line in Study Area F and the AONB and Stour Valley are assessed as being minor negative.

11.4 While it is true that placing the connection underground through the study area would avoid effects on the landscape and provide a sense of continuity, the COR concludes that the landscape and visual benefits of an underground cable alignment in this study area would not clearly outweigh any extra economic, social and environmental impacts.

11.5 The sealing end compounds would not be in close proximity, but approximately 5.4km apart. The COR has considered the effects of each on the Dedham Vale AONB and Stour Valley respectively. It concludes that the eastern compound would have a minor negative indirect effect on the AONB to the east which would be separated from the sealing end compound by the intervening fruit farm (COR 12.16). To the west of the study area, the location takes advantage of a natural depression on the edge of the Stour Valley and the presence in the existing landscape of tall hedgerow, hedgerow trees and a parcel of woodland to the immediate south. While it is accepted that a termination pylon at this location would be likely to have a negative effect on the Stour Valley, a sealing end compound at this location would have a minor negative effect on landscape character, following establishment of supplementary planting and given the wider benefit of undergrounding to the west. Further information is provided in Appendix H. No alternative sites have been proposed in representations.

11.6 The Project Team has established that there is no defined boundary for the AONB extension at the current time so the relationship between the sealing end compounds and potential AONB extension is unknown.

11.7 More distant views, including from the Stour Valley Path, Stoke by Nayland golf course and B1068 have been taken into account in the landscape and visual assessment contained in the COR. The views from the Stour Valley Path (users of which are of high sensitivity) and B1068 are at a distance of approximately 2km which limits the magnitude of effect (scale of change) that would be experienced. Stoke by Nayland Golf Course would be closer to a new overhead line on a southern alignment (approximately 1km). Views from Stoke by Nayland Golf Course have been assessed using the public rights of way which cross the course and there are

some glimpsed views of one or two of the existing towers from parts of the golf course on higher ground, but in the main views from the golf course would be limited.

11.8 The visual survey information presented on drawing G1980.566a forms part of the environmental baseline information to accompany the Connection Options Report and supplements the visual assessment information presented in drawings G1980.358d to 362d. Drawing G1980.566a shows the extent of the existing 400kV overhead line visible from selected viewpoints. These viewpoints have been primarily selected to represent views from the edge of settlement. The viewpoint used near the B1068 at the northwestern edge of Stoke by Nayland was on the public right of way at the crest of the slope on the northeastern side of the B1068, which is representative of the majority of views from the north western settlement edge. From the viewpoint used in the assessment there is no view of the existing 400kV line to the northwest, although it is acknowledged that there are some views of the existing 400kV overhead line over 2 km to the northwest from parts of the B1068 between Stoke and Keeper's Lane. The addition of a second overhead line would represent a minor change to these views.

11.9 Undergrounding the section of the connection in Study Area F is estimated to cost £117.9m, based on a distance of 5.36km between the two sealing end compound locations. This would be considerably greater than the cost of two sealing end compounds (each £3-5m) and the section of overhead line in Study Area F (£9.6m for the southern alignment).

11.10 There is no history of terrorist threat to overhead lines in the UK. In the unlikely event of a terrorist attack on overhead line infrastructure, security of supply would be maintained via the existing configuration of the transmission network and overhead lines could be repaired within days. The existence of an underground section would confer no significant benefits but would incur much higher costs than an overhead line. Failures on underground cables would take longer to repair than those on overhead lines.

11.11 Consideration was originally given to an overhead alignment closely paralleling the existing 400kV overhead line at an 85m offset to the south throughout the study area. This option was discounted as it would have resulted in oversailing the property at 'Hill View'. National Grid seeks to avoid oversailing properties wherever possible. Efforts have been made to optimise the alignment past Hill View. This has included moving the alignment further south so that there would be a greater separation from the property than applies with the existing 132kV overhead line.

This would inevitably move the alignment closer to Woodthorpe's Farm. Despite this the COR (10.57) recognises that Hill View would experience the greatest effect on views. Overall the landscape and visual assessment concludes that a southern overhead alignment in Study Area F would have a lower negative effect than a northern overhead alignment.

11.12 While Mill Farm would have nearer views than of the existing overhead lines (COR 10.57) it should be possible to devise a detailed alignment which allows trees to be retained between the alignment and Mill Farm, in order to protect its visual amenity.

11.13 The effect on views from Hunters Barn and other properties on Stoke Road as a result of a southern overhead alignment in Study Area F and sealing end compound have been taken into account in the visual assessment in the COR (10.57, 12.17) and is shown on the and visual assessment plans on project website (http://www.bramford-twinstead.co.uk/library-stage-2.aspx).

11.14 The effect on views from Leaven Hall has been considered in the assessment in the COR (10.57), which is accompanied by the visual assessment plans available on the project website.

11.15 The effects on Arger Fen, which is a SSSI, are addressed in the COR. Although there would be no direct effects, potential effects on habitat fragmentation between Assington Thicks and Assington Meadows County Wildlife Sites and Arger Fen SSSI, as a result of either overhead or underground connection options are recorded. There would be a mixture of open and filtered views of an overhead line from parts of the site (COR 10.57).

11.16 There is potential for highly localised temporary impacts on some agricultural operations during construction but neither these nor the location of permanent structures would compromise the operation of individual farming units (COR 10.132). Discussions will be held with all landowners and tenants who may be affected by the works to establish how impacts can be minimised, for example by the siting of towers and routeing of access tracks.

11.17 Properties on Stoke Road would be closer to the proposed 400kV overhead line than they are to the existing 132kV and 400kV overhead lines. All high voltage overhead lines can generate audible noise, the level of which depends mainly on the type of construction, the nominal operating voltage and weather conditions. The potential for noise from overhead lines is an issue considered as part of detailed connection design studies and the environmental impact assessment and at that stage noise surveys will be carried out to inform the environmental impact assessment. Among other noise

related issues, this will consider the likely effect of noise generated by the overhead line once operational.

11.18 There would be some temporary minor negative impacts during the construction period which may lead to localised impacts for residents of, and visitors to the Leavenheath area. This may include highly localised disruptions to PROWs during construction. In addition there would be potential during construction for increased HGV traffic on the local road network. For all options there are a number of measures that can be put into place to mitigate the impact of temporary construction works on visitors' enjoyment of the area. This may include the programming of construction activities and routeing construction traffic to minimise effects on visitors to the area and disruption to local businesses, including agricultural operations. Where Public Rights of Way are disrupted during construction, alternative or diversionary routes would be provided (COR 10.137).

11.19 If the interim alignment is taken forward, there will be no overhead line north of the existing 132kV line close to Barracks Road.

Influence on scheme design

11.20 No further changes to the interim alignment are proposed in this study area.

11.21 Further discussions will be held with the owners of Hill View to explore ways of mitigating the potential effects on that property. For example this could include establishing the least intrusive location for towers in the vicinity of the property.

11.22 In developing the detailed alignment, consideration will be given to the effect on mature trees between the alignment and nearby properties in order to mitigate the effect of the alignment on visual amenity of those properties, including specifically Mill Farm, Assington.

11.23 When an operational noise assessment is carried out, this will extend specifically to properties on Stoke Road, Leavenheath.

12 ISSUES AND REPRESENTATIONS - STUDY AREA G (STOUR VALLEY)

Issues

12.1 The following issues were identified:

- consideration should be given to undergrounding the existing 400kV connection which currently runs through the Dedham Vale AONB and the Stour Valley;
- whilst an indicative route for the underground section in the Stour Valley has been identified further work is required to ensure the most appropriate route is progressed;
- further detailed studies are required to ensure appropriate mitigation for impacts on habitats in the Stour Valley;
- comprehensive and detailed archaeology excavation and recording work should be undertaken in advance of any development;
- the swathe of land required for the construction of an underground cable should be minimised, particularly when crossing field boundaries. Consideration to be given to the use of horizontal directional drilling at particularly sensitive locations such as protected lanes and ancient or species rich hedgerows;
- the impact on Protected Lanes should be minimised;
- the eastern Sealing End Compound should be taken forward as currently shown as it would be in a natural bowl thus minimising its impact on the surrounding landscape and would be located on land of poorer agricultural quality;
- the effect of a Sealing End Compound to east of Stour Valley on views from the valley (proposed AONB)

12.2 Several parties expressed concerns about the potential effect of a terminal tower and sealing end compound at tower 4YLA001 at the western end of the route, including the effect on:

- visual amenity of Sparrow's Farm;
- the Stour River Valley landscape;

- public views from protected lanes and public rights of way (including Stour Valley Path and St. Edmund's Way);
- the setting of Grade II* listed Sparrow's Hall and its listed barn;
- protected lanes as a result of construction traffic accessing the site and the reinforcement which may be required;
- the natural environment, adjacent to the Loshes Meadow Nature Reserve, including traditional, herb rich, grazing meadows with a great variety of plant species, including two varieties of orchids, as well as being important for nesting skylarks, grey partridges and nightjars;
- woodland, including the effect on ancient oak trees and an important habitat for Nightingales and dormice;
- agricultural practices and the farm business, including disruption and loss of farm land;
- health resulting from electromagnetic fields created by the cables which will pass close to Sparrows Farm House, Sparrows Cottage and Elm Cottage.

12.3 Suggestions were made for an alternative site for the sealing end compound:

- the underground cable should bear south to connect to the existing line at a less sensitive point at least as far south as pylon 4YLA04. The special landscape characteristics justify the sealing end compound being located well south of Ansell's Grove;
- a preference for a sealing end compound site south of Henny Back Road at pylon 4YLA05, thus removing 400kV pylons as well as the 132 kV diamond crossing from the Special Landscape Area;
- further details required of the various routeing options considered with respect to underground cable across the Stour Valley in the vicinity of Moat Lane ending at pylon 4YLA004 or 4YLA005, and also which County Wildlife Site(s) would have been affected;
- whether positioning a sealing end compound in the bottom of the valley in the vicinity of pylon 4YLA001 would mean that the height and volume of the sealing end compound structure would be much greater than would be the case if it were sited at or between pylons 4YLA004 and 4YLA005;

Responses

12.4 The existing 400kV overhead line is operating under existing consents and has not yet reached the end of its asset life. The economic implications of replacing it with underground cables would not be consistent with National Grid's statutory and licence duties. There is no requirement to underground the existing 400kV line to meet the identified need for this project.

12.5 The underground section in the Stour Valley, in common with the remainder of the connection, still needs to be designed in detail. The design will be influenced by the results of detailed studies, including ecological and archaeological investigations to ensure that the appropriate alignment is selected and, where necessary, mitigation measures are defined. The scope of further investigations will be agreed with the relevant authorities and PINS. Discussions with land owners and occupiers will also take place as part of the design process.

12.6 The swathe of land required for the construction of an underground cable will be minimised as far as possible, with particular attention being paid at field boundaries. Wherever possible, efforts would be made to reduce the swathe width to about 40-50m. The COR identifies locations where it is intended to use horizontal directional drilling however its use at other locations may be considered if surveys determine that these are particularly sensitive. The practicalities of horizontal directional drilling make it less desirable for use on short or repeated sections of route.

12.7 Similarly the access arrangements for construction and maintenance will be planned to minimise the effects on protected lanes. Some minor works to adopted highways may be required to improve the alignment, clearances and standard of roadbed in order to facilitate access for construction traffic. Where temporary effects on protected lanes are unavoidable, features will be reinstated at the end of the construction period.

12.8 The visual effects of the sealing end compound at the eastern end of the study area have been considered in the COR (12.20 – 12.22), including views from the western side of the Stour Valley. Further information is provided in Appendix H. The environmental effects of a cable sealing end compound have to be considered in relation to the additional cost that would be incurred for a longer underground cables route and whether the environmental effects of an alternative location, as well as the benefits associated with a greater length of undergrounding would clearly outweigh any extra economic, social and environmental impacts. National Grid believes that

with mitigation the environmental effects of a sealing end compound at this location would be acceptable in planning terms.

12.9 The effects of the western sealing end compound were addressed in the COR (12.25 - 12.28). The COR (11.10) also explained that an alternative underground cable route had been considered which followed the route of the existing 132kV overhead line across the Stour Valley before running south from west of Moat Lane to meet the Twinstead to Braintree overhead line at either pylon 4YLA004 or pylon 4YLA005. This option was initially discounted as it would result in negative effects on County Wildlife Sites and woodland to the north of Alphamstone.

12.10 In the light of representations received, further technical and environmental studies have been undertaken to investigate whether the previously identified constraints may be avoided by design and construction methods. The potential to achieve a connection at pylon 4YLA004 or pylon 4YLA005 was investigated. The design of the sealing end compound would be similar to that proposed at 4YLA001.

12.11 The use of directional drilling techniques on an alternative underground cable route to 4YLA004 or 4YLA005 would minimise effects on vegetation. There would be some loss of hedgerow and hedgerow trees as a result of the underground cable routes in this area. This would result in some localised negative effects on landscape character and on local views. The alternative underground cable route to 4YLA004 would cross fewer hedgerows and trees and prior to mitigation would therefore have a lesser negative effect on vegetation compared to a connection to 4YLA005. It would also have a lesser effect, than a connection to 4YLA01, on the lanes which are an element of landscape character.

12.12 Although undergrounding to 4YLA005 would allow the removal of an additional span of the existing 400kV overhead line, the greater amount of mature vegetation surrounding a sealing end compound location at 4YLA004, compared to 4YLA005 would better assist in accommodating the compound within the landscape and in limiting views of the compound. Views of the sealing end compound from private residential properties would be limited to those in closest proximity and would in the main be filtered and/or oblique. However views from these properties to the north would generally be improved as a result of the removal of the existing 400kV overhead line in nearer views. A sealing end compound at 4YLA005 would have slightly greater negative effects than a sealing end compound at 4YLA004 because of more open views from the public right of way and other visual receptors to the south.

12.13 In terms of cultural heritage, a cable route to 4YLA004 or 4YLA005 would have greater negative effects on buried archaeology than a route to 4YLA01, although this can be mitigated. However, the removal of pylons to the north of either location could potentially have a positive effect on the setting of two Grade II listed buildings.

12.14 From a biodiversity perspective, a preference for the interim alignment and a sealing end compound at 4YLA01 remains as it would result less loss and fragmentation of valuable habitat. An underground cable route to 4YLA004 would affect fewer hedgerows compared to the interim alignment and a cable route to 4YLA005. The route to 4YLA005 would be the least preferred as it would affect the greatest number of hedgerows and is in proximity to Alphamstone Complex LWS.

12.15 On balance it was considered that there would be benefits in siting a sealing end compound in the vicinity of 4YLA04 and that a route for an underground cable could be developed to connect this location to the interim alignment to the east. As with the siting of sealing end compounds elsewhere on the project, further studies will need to be undertaken to establish the most appropriate site for the compound in this general location.

Influence on scheme design

12.16 Subject to consultation with affected parties, the interim alignment at the western end of Study Area G is to be amended to include an underground cable connection with a sealing end compound in the vicinity of pylon 4YLA004 to effect a connection to the Bramford-Braintree 400kV overhead line. The benefits of this arrangement are that, in addition to the removal of the 132kV overhead line east of the Bramford-Braintree 400kV overhead line, it would result in the removal of a section of the latter line between the connection point and Twinstead Tee. Both of these modifications would result in an enhancement of the environment in the vicinity of Sparrow's Farm and Hill Farm. Those adverse effects identified in representations would be avoided.

12.17 No other changes to the interim alignment are proposed in this study area.

13 PROJECT WIDE ISSUES AND REPRESENTATIONS

13.1 Although consultation on the Connection Options Report was intended to seek comments on the indicative alignments and the findings of the report regarding the proposed interim alignment, representations were also received which raised issues of a more general nature. These issues would not be material in deciding which alignment should be adopted to take forward for detailed design. In many cases, the issues have already been considered at earlier stages in the process and the position of National Grid has not changed in the interim. Nevertheless, the key general issues are summarised and the response from National Grid presented.

13.2 This chapter also makes reference to issues raised regarding the proposed substation to be located west of Twinstead Tee. The preferred location for the substation will not be affected by a decision on the interim alignment. An options appraisal report will be prepared which will consider different locations for, and forms of, substation. This will form the basis for a separate consultation exercise on potential substation locations and the issues raised so far will help to inform this consultation.

The need for the project

Issues

13.3 The following issues were identified:

- there remains a concern that communities across Suffolk are being adversely affected in order to facilitate national 'progress' and help in the reduction of national carbon emissions and the EU Renewable Energy Targets;
- it is considered by some that the need case for a new connection has not been made and that with the passage of time the requirement for a new power line is receding. Doubts were expressed about the timing or certainty of the Sizewell C power station project and the effect which this could have on the need case;
- it was claimed that the power from the first stage of the East Anglian Offshore Wind project can be accommodated by the upgrade to the existing overhead line.

Responses

13.4 The Bramford to Twinstead Tee Connection will form part of the national transmission network and will therefore deliver national benefits, in terms of security of electricity supply and facilitating reductions in carbon emissions and meeting renewable energy targets. The need for the connection is set out in the Project Need Case[38] which explains in detail the current capacity of the transmission system and the requirement to add new capacity from 2016. National Grid has an obligation under the terms of its transmission licence to offer to connect new generation to the transmission system. Until such time as the generators inform National Grid of changes to their programme or generating capacity, the company has to plan for the contracted generation. The Need Case is periodically reviewed to reflect changes to contracted generation and, if a review demonstrates that a different connection would be appropriate, this would be further developed. As is made clear in the Need Case, given the amount of low carbon energy generation planned for the East Anglian region, a new Bramford to Twinstead Tee connection would be required even if Sizewell C nuclear power station were not to proceed.

13.5 It would not be appropriate to plan for the first stage of the East Anglian Offshore Wind project in isolation. As noted above, the Need Case identifies the additional generating capacity which will place demands on the transmission system in East Anglia.

Process

Issues

13.6 The following issues were identified:

- National Grid should review its future work programme to allow appropriate time for the necessary planning assessments and consultation to be undertaken, and to enable the least environmentally damaging scheme to be delivered;
- the Selection of Preferred Corridor Report had made an overriding strong case for Corridors 3 or 4, using the specified criteria, but had then concluded that corridor 2 should be chosen. This meant that the process was biased and the consultation process flawed.

[38] National Grid : Bramford to Twinstead Connection : Need Case for the East Anglia Region : May 2011

Responses

13.7 The work programme provides for detailed scheme design and environmental impact assessment as well as further consultation prior to the submission of an application for Development Consent. While National Grid has a duty to have regard to the preservation of amenity and will seek to minimise the effect of its proposals on the environment, this must be balanced with its statutory duties to develop and maintain an efficient, co-ordinated and economical system of electricity transmission. One objective of the design and assessment process is to identify the potential adverse effects of the scheme and to mitigate these as far as practicable.

13.8 The Selection of Preferred Corridor Report carefully set out the arguments for and against each corridor and concluded that Corridor 2 was to be preferred. It is not true to say that an overriding strong case was made for Corridors 3 or 4. Corridor 2 was also preferred in representations to the Stage 1 Consultation, from statutory and other local bodies and from members of the public.

Options appraisal methodology

Issues

13.9 The following issues were identified:

- at a general level, further clarification was sought as to how multi-criteria analysis had been applied and whether National Grid had achieved the right balance between technical, economic and environmental obligations and between different constraints (e.g. landscape and views versus biodiversity) in determining what should be its interim alignment;
- similarly it was felt to be unclear what weight was given to the views of those affected. In particular it was claimed that the assessment had given insufficient weight to the views of the Community Forums and to their requests for information on decision criteria;
- it was proposed that National Grid should be obliged to commit to a set of publicly defined principles of universal application as to whether or not to use underground transmission lines, with a set of clearly defined objective criteria;
- several representations expressed the view that National Grid had not adequately responded to concerns about the socio-economic impact of the scheme upon local communities and the local economy. In particular it was felt that the effect on the economic benefits of tourism must be considered;

- there has been no substantive engagement with local Chambers of Commerce, LEPs or rural enterprise bodies – locally derived socio-economic data has not been collected;
- conclusions regarding impacts upon heritage assets are founded upon a narrow interpretation of setting as opposed to the broad interpretation promoted in national guidance;
- no real attempt has been made to carry out a cost-benefit analysis of the environmental effect of overhead lines;
- National Grid's 'Approved Criteria' (Holford Rules) were established over 50 years ago and conditions are now very different;
- the COR analysis by study area inhibits proper recognition of the importance of views of pylons in one study area from another;
- a number of detailed points were also raised :
    - Presentation of the methodologies should have adopted EIA practice;
    - The EIA scoping report should provide an outline methodology for the assessment of effects in greater detail than that provided in the COR;
    - A full assessment is required of the impacts of construction of underground and overhead connections and sealing end compounds ;
    - Clarification required as to whether, in the Holford Rules, the definition of "high amenity value" extends to Special Landscape Areas as well as National Parks and AONBs;
    - National Grid is proposing completely new lines across an ancient, special landscape area which has seen no industrial construction ever, yet at the same time argues for this route by saying that an alternative would introduce new lines;
    - There has been a potential under-estimation of the impact of the larger pylons needed for 400kv transmission;

Responses

13.10 As stated in the Connection Options Report (para 5.91) "*The Approach to the Design and Routeing of New Electricity Transmission Lines notes that National Grid will seek to balance the various issues and not to impose a hierarchy between the environmental, socio-economic, technical and cost requirements. The multi-criteria assessment does not provide the answer as to which is a preferred option based on weightings which are applied arithmetically. Rather, planning judgements are made based on the information collected through the options appraisal process*."

13.11 In response to comments made in consultations on a number of major projects, The Approach to the Design and Routeing of New Electricity Transmission Lines was re-issued in August 2012, together with Our Approach to Options Appraisal. These seek to clarify the approaches which National Grid adopts in the process of project development. The former notes that "*Whilst the results of Options Appraisal will inform decision-making, the methodology itself does not provide the answer. Instead it objectively sets out the implications of the different options across a wide range of subjects, and broadly shows which option performs best across the board. Those sub-topics that are considered by the stakeholders to be especially important will merit particular consideration in the decision-making process. Options Appraisal is a robust and transparent approach to the option selection process, ensuring that all interested parties will be able to understand the information and analysis that underpin the judgements we make*." Ultimately the relevant decision-making body has to decide whether our proposals strike the right balance.

13.12 The Community Forums provided valuable information about environmental constraints and the issues of concern to the local communities. These issues were mapped and are available on the project website. The information was used by the project team in developing the indicative alignments. The methodology for the assessment of options was explained to all Community Forums and Thematic Groups. Members of Community Forums were encouraged to submit representations individually through the publicly available channels. The Forums themselves did not comment on the indicative alignments.

13.13 In relation to heritage, national guidance describes setting as '*The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral*.' (NPPF) and '*Setting is an established*

concept that relates to the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape. Definition of the setting of a significant place will normally be guided by the extent to which material change within it could affect (enhance or diminish) the place's significance' (conservation principles). Setting has been broadly and inclusively described in the COR, pending a more detailed assessment of individual assets following selection of a preferred alignment. This inclusive approach has not attempted to describe the contribution of setting to significance, which may reduce the area considered to form part of the setting in some instances but is deliberately broad and inclusive for the purpose of the COR.

13.14 Cost benefit analysis (CBA) is defined on page 4 of HM Treasury's Green Book as "*analysis which quantifies in monetary terms as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value*."

13.15 National Grid does not consider that effects on the environment from its proposals can be properly given a monetary value. Decisions on the balance to be struck between National Grid's statutory and licence duties are matters of judgement for itself and ultimately the Secretary of State in determining whether development consent should be granted for any proposal that is brought forward. This is consistent with other planning judgements that are made in determining applications for planning permission or consents under other legislation. The effects on the environment from the proposed development will be assessed in accordance with the relevant Environmental Impact Assessment Regulations and associated Guidance.

13.16 For a CBA to be considered meaningful the level of detail required would be such that both market goods (those which have an inherent monetary value) and non-market goods (those which have no inherent monetary value such as environmental quality or amenity) can be assessed. The Treasury Green Book states at paragraph 2 that "*the preferred method of valuation is to simulate the market by estimating the 'willingness to pay' (WTP) or willingness to accept a project's outputs or outcomes*." However there is no national guidance regarding how to estimate the public's "willingness to pay" to mitigate adverse effects of energy projects.

13.17 National Grid has undertaken a WTP survey in relation to existing overhead lines in national parks and AONBs. This followed the announcement from Ofgem that it is minded to provide an allowance under the latest price control (known as RIIO) for transmission companies to undertake work to mitigate the visual impact of existing

transmission lines in National Parks and AONBs. The WTP research was undertaken in order to inform the question of the size of the allowance. National Grid will take this research into account in considering existing lines in these designated areas. The approach to mitigating the visual impact of new lines is set out in the Government's National Policy Statements, EN-1[39] and EN-5[40].

13.18 The continuing relevance of the Holford Rules is recognised in the National Policy Statement EN-5 paragraphs 2.8.5/6. The NPS notes that the Holford Rules "….*should be followed by developers when designing their proposals*."

13.19 National Grid's approach to undergrounding is set out in The Approach to the Design and Routeing of New Electricity Transmission Lines. A requirement for "*publicly defined principles of universal application as to whether or not to use underground transmission lines*" is an issue which would need to be raised with Ofgem as it would also need to apply to proposals by Distribution Network Operators. It would need to be underpinned by a national research and consultation programme regarding the relative importance of particular constraints and the degree to which these should influence decision making. In the mean time, National Grid will have regard to the National Policy Statements in bringing forward proposals for development consent.

13.20 Consideration was given to socio-economic factors in the Connection Options Report. As Our Approach to Options Appraisal notes "*At Stages 1 and 2, we appraise our options with regard to key receptors including, significant areas of economic activity such as major businesses, tourist attractions and large areas of land zoned for industrial or employment use which could potentially be affected by the option. Where Options Appraisal is considered appropriate at Stage 3, we would carry out a more detailed analysis of the impact of different options on the local economy. We will generally consider as advantageous options which benefit or do not have an adverse impact on local economies*". National Grid is satisfied that the level of socio-economic assessment undertaken has been sufficient to inform the development of the project thus far. More information will be made available regarding how socio-economic effects will be assessed at the next stage in the project. The difficulty of

[39] Department for Energy and Climate Change : Overarching National Policy Statement for Energy (EN-1) : July 2011

[40] Department for Energy and Climate Change : National Policy Statement for Electricity Networks Infrastructure (EN- 5) : July 2011

establishing, with any degree of certainty, cause and effect in this field is acknowledged.

13.21 Prior to the first round of Community Forums, National Grid contacted businesses with addresses in the study area and all were invited to the Community Forums. Invitations were also extended to Chambers of Commerce in Essex and Suffolk, the Essex Business Network and the Suffolk Federation of Small Businesses and the Ipswich and Suffolk Small Business Association. None of these bodies joined the Community Forums. The Community Forums have noted the potential effects the proposed development could have on businesses and tourism and this has been fed into the process.

13.22 In response to the detailed points raised, it can be confirmed that the EIA scoping report will set out proposed assessment methodologies in detail. The EIA will extend to an assessment of the impacts of construction of underground and overhead connections, sealing end compounds and the substation.

13.23 In the Holford Rules, areas of highest amenity are defined as Areas of Outstanding Natural Beauty, National Parks, Heritage Coasts and World Heritage Sites. Supplementary Note B states "*where possible choose routes which minimise the effect on Special Landscape Areas, Areas of Great Landscape and other similar designations of County, District or local value*."

13.24 While the preferred route corridor does pass through Special Landscape Areas, the corridor already accommodates a 400kV and 132kV overhead line and the scale of change in replacing the latter with a 400kV overhead line would be less than introducing an overhead line into an area where none are currently present.

13.25 The landscape architects on the project team have carefully assessed the impacts of the larger pylons needed for 400kv transmission based on the assumptions about the scale of these pylons set out in the COR, the effects of the existing 400kV overhead line in the area and their experience of similar projects elsewhere.

13.26 The visual assessment in the COR considers the changes to views that would be experienced as a result of an overhead line within each study area, wherever that viewpoint might be. The viewpoints themselves have not been restricted to study areas and the views described in the COR appear in the study area that they are relevant to. The plan - G1980.566a - which has been used to inform the visual assessment in the COR demonstrates that from some viewpoints a new overhead line would be visible in more than one study area and this has been taken into account in the COR and is referred to in the reporting of anticipated effects.

Consultation approach

Issues

13.27 The following issues were identified:

- consultation is a sham and a decision has already been made;
- residents should be afforded every opportunity to be fully engaged as the project progresses in order to address the uncertainty that has been created;
- local communities, including the Community Forums, are frustrated with the consultation process, in particular as to how their representations have been taken into account and informed National Grid's conclusions and expects this to be rectified through future consultation and reporting. There is no evidence to show that evidence provided during the community forums or at drop-in events has been considered;
- the views of District Councils have been ignored;
- there has been a lack of clarity over the approach to the Hintlesham and Burstall area and the way it has been explained to local people has not been satisfactory. The letter dated 21 June 2012 which was sent to Owners, Occupiers and Residents should be withdrawn by National Grid as the substance and terms within it are inaccurate;
- the Connection Options Report and the need for a substation has not been considered in a co-ordinated way in order for a full picture of the project to be available for communities to comment upon;
- there has been a lack of clear information regarding consultation and a failure to publish meeting notes promptly;
- money spent on sending out letters first class during consultation could have been used to underground the whole route;
- closing date should be extended and another community forum set up prior to the closing date in order that all concerned can work productively to achieve best solution (others have complained that the timescale for consultation is too long);
- further forums and meetings are required as there are unanswered questions. To date meetings have been held behind closed doors;

- by announcing a preference, National Grid have created an imbalance in representations received;
- unclear how route around Hintlesham has been altered after public consultation and how local views have been accommodated;
- during consultation, NG launched defence against arguments rather than acting upon them positively;
- it should be possible to see other peoples comments and to know what to expect back from any comments submitted;
- National Grid have deliberately withheld information about pylon locations, sizes, designs and footprints and for undergrounding, jointing pit locations. The scale of the developments at and in the near proximity to the Bramford Substation have also been withheld;
- the consultation process has been divisive, setting people against each other.
- a number of points raised by landowners including :
    - process is not open and the landowners are having to do all the work;
    - confirmation required as to whether marker stickers are to do with pylon project and if so why, as no final decision has been made;
    - National Grid employees have not approached landowner since the project has been started, just contractors turning up on land to commence work.

Responses

13.28 Since October 2009, National Grid has gone to great lengths to ensure local communities, statutory and non statutory bodies have had numerous opportunities to participate in a meaningful consultation process. Representations received have been referenced in a number of reports including the Stage 1 Feedback Report, the Selection of Preferred Corridor report, the Connection Options report and the present report. Specific references have been made to representations from local authorities. Although it has not been possible to reference every piece of individual feedback, each representation has been considered at every stage in the process.

13.29 Since National Grid announced its preferred corridor last July, the consultation programme has continued. Community forums and Thematic Groups were established to seek views, advice and information from local communities and a range of

organisations, including parish councils, local planning authorities, Natural England, English Heritage, the Environment Agency and amenity and campaign groups. Public drop-in events were held in January and February to discuss the project and to give local residents and landowners the opportunity to give us their views. Many people participated in these events and provided feedback and comments. All the relevant feedback was taken into account and on 29th May 2012 National Grid published the Connection Options Report which identified the areas where we propose to use underground cables and where we propose to build overhead lines. Between 29th May and 27th July the opportunity was provided to provide feedback on the findings of this report. The report was also discussed with the Community Forums and Thematic Groups at special meetings arranged in June.

13.30 The important role of the Community Forums in identifying local issues is expressly recognised in the COR (2.39/2.40). Members of the public are welcome to attend as observers at both Community Forums and Thematic Groups. Meeting notes of Community Forums, Thematic Groups and Local Authority meetings are published on our project website.

13.31 There will be a delay between a Community Forum taking place and the meetings notes being published on the project website as meeting notes cannot be published until approved by the members and independent chairman. In order to ensure the meeting notes are an accurate reflection of the Community Forum and to speed up this process as much as possible, each set of draft notes is forwarded to the members in advance of the next meeting when they are reviewed and signed off. Once approved the notes are made available on the project website.

13.32 The time and money spent on consultation letters is a reflection of how important it is to National Grid. Nevertheless, the cost of consultation letters is a very small fraction of the overall cost of developing a project like this and would have no bearing on whether or not undergrounding should be considered.

13.33 The consultation on the Connection Options Report closed on 27th July 2012. Further rounds of Community Forums are not proposed until after National Grid has reviewed all representations received and confirmed its preferred alignment. Once the preferred alignment has been confirmed, development of the detailed design will commence. Further consultation will take place with statutory and non-statutory consultees, landowners and persons with an interest in the land and the local community. Public information events will be held when appropriate. When the application for Development Consent is submitted, a Consultation Report will record

the representations made at the formal consultation stage, as well as making reference to the earlier informal consultation stages, and will set out how these representations have influenced the development of the proposal. This is viewed by PINS as a very important element of the Development Consent Order process and the adequacy of National Grid's consultation will be considered by them.

13.34 Although it was initially envisaged that a specific consultation for the options at Hintlesham would be held after it had been confirmed where undergrounding and overhead lines would be proposed, this approach was reviewed following a meeting with the Local Planning Authorities, Statutory Consultees and Campaign Groups chaired by the Planning Inspectorate. This is why the options at Hintlesham were consulted on as part of the overall consultation on the findings of the Connection Options Report and within the same timeframe. This approach was communicated to the consultation zone via the spring edition of the Project Newsletter, then again in mid June via a letter inviting local residents to attend the consultation events.

13.35 The need for a new substation has no bearing on the recommendations in the COR. In order to meet its programme, National Grid published the COR on 29th May 2012. In July, the UKPN Needs Case report was received. A review of this report will assist National Grid to determine which option to take forward as part of our application for development consent.

13.36 Representations can be made to National Grid or UKPN at any time on any aspects of the project, including UKPN's recent report. Any feedback received will be taken into account in National Grid's assessment of the options.

13.37 If, following the assessment of UKPN's Needs Case, a substation is confirmed as the preferred option, National Grid would carry out a public consultation on the substation siting options and the other options in UKPN's report. Information on consultation events would be published in a newsletter and letters will be sent to all residents and parish councils within the relevant consultation zone to notify them of the events.

13.38 When, in the COR, National Grid presented the options for consultation, the option which was considered to be the least environmentally constrained was identified and the information on which this conclusion had been based was presented. It would have been inappropriate not to present this conclusion. Representations on the options and the information presented were sought. These representations were reviewed and all issues and additional information was considered before National Grid confirmed its preferred alignment.

13.39 Chapter 6 and Appendix A of the COR explains the basis for options appraisal in the Hintlesham area and refers (and responds) to representations made at earlier stages in the process and why certain options were discounted.

13.40 The Data Protection Act does not permit National Grid to provide copies of responses made by individuals unless certain details have been redacted. This issue has been discussed with PINS and as a result the redaction process has commenced. Redacted representations will be made available in due course.

13.41 National Grid has not yet determined pylon locations, sizes, designs and footprints or, for undergrounding, jointing pit locations. The locations of infrastructure will be governed by further technical and environmental studies and by discussions with landowners and occupiers. The scale of the developments at and in close proximity to Bramford Substation has been reported in the COR and taken into account in the assessment of effects. Further information on the EAOWL proposal is available on that project's website.

13.42 It is recognised that National Grid's recommendations will not meet everyone's aspirations, as there will be strong feelings for and against particular options. National Grid is obliged to set out how we have come to those recommendations and how consultation has influenced them. National Grid has responded to both positive and negative representations and has been at pains to present the evidence underlying its recommendations at each stage in the process.

13.43 The detailed points raised by landowners related to the works currently being undertaken to refurbish the existing 4YL 400kV overhead line. These works are unrelated to the proposal to build a new connection between Bramford and Twinstead Tee. With regard to the latter proposal, Fisher German are the land agents working on behalf of National Grid and they have been gathering information from persons with interests in land, e.g. owners and occupiers along the corridor. This has been done through meetings to discuss the project and to explain the need to gather detailed information of the landholding. Fisher German will continue to liaise with those with an interest in land. This will involve gathering information, as required by legislation and guidance, and seeking access for various surveys.

Basis of costings

Issues

13.44 The following issues were identified :

- the costings for the proposal should be made available, including the cost of sealing end compounds;
- in rejecting the case on cost do we know just how National Grid arrived at their costings? Did they go out to tender outside their core of preferred 'partners'? Were contractors outside of the UK, with large scale experience in undergrounding power lines, involved in the costing process? Simply providing a figure lacks transparency;
- costs have been contradicted , for example, undergrounding costs have come down to around 3 times the cost of overhead lines which is dramatically different from the originally quoted 12 to 17 times estimate;
- the cost of building the new substation to replace the 132kV overhead line appears to be missing from the overall scheme costs listed in the COR. A fully underground cable solution would not require a substation to be built;
- the project is at least possible cost without consideration for the future;
- if socio-economic costs were factored into the equation, the cost would be greatly reduced.

Responses

13.45 As noted in the COR (5.14), in response to representations made during the Stage 1 Consultation, to other consultations on major projects, and to the publication of the Parsons Brinckerhoff/IET report, National Grid has undertaken a review of its costs. The basis for the costs was set out in Appendix B to the COR. Capital costs are based on recent tender returns. Both capital and life time costs are presented in the COR for each option in each study area.

13.46 The costs of different technology options contained in the Parsons Brinckerhoff/IET report are broadly in line with those that National Grid have used and published when carrying out appraisal of options on current projects such as the Bramford to Twinstead Tee and Hinkley Point C Connections. The report recognises that a variety of different factors will influence the costs on individual projects, and overall the figures in the report are broadly in line with the costs we have been quoting.

13.47 The Parsons Brinckerhoff/IET cautions against the use of ratios as a means of comparing the costs of different technologies. The typical ratio between the build costs of underground cables and overhead lines is shown in the report as approximately 10 times. When life time costs (Operational and Maintenance costs and the value of losses over the life time of the connection) are added in, the absolute financial difference between the costs of the two technologies doesn't change greatly, however the typical ratio drops to around 5 times. This is broadly in line with the numbers that have been used and quoted when evaluating options on National Grid's current projects, but clearly demonstrates why the use of cost ratios can be a misleading measure when making investment decisions.

13.48 The cost of providing a new connection to the local distribution network would be common to all options in the preferred route corridor, whether this connection took the form of a new substation or a cable connection from Bramford to Braintree (or elsewhere). If a decision were made to provide a cable connection between Bramford and Twinstead Tee then no new connection to the local distribution network would be required. The capital cost of the interim alignment recommended in the COR (£207.7m) together with the costs of constructing a new substation (of the order of £20m) would still be substantially less than a 400kV underground cable connection along the whole route (in excess of £572m).

13.49 As noted in the COR (12.30) the capital cost of the recommended interim alignment is estimated to be £207.7m compared to a fully overhead solution costing £51.3m. The lowest cost solution is not therefore being promoted.

13.50 If socio-economic costs were factored into the equation, this would have no bearing on the capital or life time costs of the scheme. Any socio-economic costs which could be established would need to be balanced against the benefits of the scheme to the national economy.

Undergrounding

Issues

13.51 The following issues were identified :

Whole route issues

- National Grid should be applying for the maximum level of undergrounding the energy secretary is likely to approve;

- undergrounding should not be limited to the two areas (Dedham Vale and Stour Valley) and whole route should be undergrounded because the whole region appears to share many of the characteristics of these designated areas;
- significant savings could be made if Ofgem were to agree to fund the undergrounding of the existing line concurrently with the installation of the new B2T cables. There are funding provisions in existence to make such a solution possible in such valuable and important landscapes as the AONB;
- Ofgem will approve any proposal, including full undergrounding;
- the time is right to invest in undergrounding as the preferred method for all future transmission projects. The overhead transmission that was acceptable last century is no longer acceptable;
- parts of route closest to farms and houses should be undergrounded;
- the detailed alignment of the underground cable should be designed taking into account environmental and engineering constraints rather than being constrained by the area of route corridor 2;
- choices for undergrounding the whole line, but not necessarily along any of the proposed four corridors, have not been explored and would not cost the amount predicted. An alternative optimal underground route has not been investigated.

Technology issues

- whether more information was available regarding the use of two, rather than three, cables per phase;
- extending the HVDC feed closer to the point of connection to the grid at Twinstead would obviate the need for a converter hall at Bramford and would allow the whole route to go underground;
- several points were made regarding the potential use of gas insulated lines, referring to the Siemens website, including tunnel and above ground installations , the width of construction swathe compared to direct buried cables and that they would be less environmentally disruptive than overhead lines and provide an affordable undergrounding solution;
- the NG report is still referring to the older undergrounding technology which involves disruption to a much wider swathe of the countryside and continued restrictions to agriculture and tree planting above the underground installation;

- whether a delay in the need to connect Sizewell C power station would allow National Grid to more fully explore the Gas Insulated Line.

Cost issues

- updates have repeatedly implied undergrounding is not viable yet East Anglia ONE Limited seem to be able to manage it for their new line and you yourselves are undergrounding some areas;
- lack of significant underground investment will only continue to perpetuate the cost differential that leads to NG repeatedly proposing the same 80 year old technology for each new project. The cycle needs to be broken and an investment of pence per household per annum should not be a barrier for taking a strategic course that reflects such benefits to the countryside and the people who live there. The extra cost of undergrounding is worth it in the long run;
- whether a consultation been considered to ask people to pay for the undergrounding;
- money spent on maintenance could be put towards undergrounding;
- given high cost of the Sealing End Compounds, it would be cheaper to underground the whole line;
- cost of undergrounding in soft areas is close to cost of overhead lines.

Sealing end compounds

- sealing end compounds are likely to have a significant and unacceptable impact upon the character of the countryside and local views;
- choosing their locations of sealing end compounds based on minimising the stretches of undergrounding is a wholly inadequate approach;
- clarification required on the size of sealing end compounds.

Other issues

- underground cables are not without issues, in particular concerns about induced ground currents and potential impact on livestock;
- as the existing line is underground, why now put it overhead?
- a co-ordinated solution of burying both 400kV and 132kV circuits in same trenching has not been considered;

- how wide would the underground cable swathe need to be to accommodate 24 high capacity 400kv cables?
- whether a landowner could prevent the installation of underground cables;
- why the width of the construction swathe for underground cables varied;
- whether horizontal directional drilling (HDD) would be used;
- there appears to be minimal consideration of how local environmental and socio economic benefits of undergrounding have been considered in financial terms (e.g. impact on tourism);

Responses

Whole route issues

13.52 Some representations to the Stage 1 Consultation advocated that the whole of the route between Bramford and Twinstead Tee should be installed underground. Previous estimates (included in the Selection of Preferred Corridor Report) of capital costs for the AC underground cables alone and assuming the shortest route possible had been in the range £572m-£616m.

13.53 National Grid must be able to justify its proposed expenditure to Ofgem and the details of its proposal to the Secretary of State for Energy and Climate Change. In so doing, and with regard to undergrounding, the landscape and visual considerations outlined in Section 2.8 of National Policy Statement EN-5 and the comments of government about those considerations are relevant as any development consent application will ultimately be judged against the relevant NPSs. The multi-stage optioneering process is designed to address those considerations and forms part of the justification process and the submission for Development Consent which National Grid makes will reflect the outcome of this optioneering and its statutory duties to develop and maintain an efficient, co-ordinated and economical system of electricity transmission and to have regard to the protection of amenity. The Secretary of State offers no guidance on the level of undergrounding which may be appropriate – each case is considered on its merits. Given the assessment to date and the guidance in Section 2.8 of NPS EN-5, there is no reason to conclude that a fully underground solution is appropriate.

13.54 More detail on underground alternatives including GIL and tunnels is included in the Review of Strategic Options Report (June 2011).

13.55 Whether or not undergrounding should be the preferred method for all future transmission projects is ultimately a matter for the Secretary of State.

13.56 The existing 400kV overhead line is operating under existing consents and has not yet reached the end of its asset life. The economic implications of replacing it with underground cables would not be consistent with National Grid's statutory and licence duties. There is no requirement to underground the existing 400kV line to meet the identified need for this Project.

13.57 In considering whether sections of the connection should be placed underground, the potential negative effects of an overhead line on visual amenity for occupants of residential properties have been recorded and considered.

13.58 The detailed alignment of the underground cable has been designed taking into account environmental and engineering constraints and cost considerations, rather than being constrained by the area of Route Corridor 2. Within each study area, it represents the optimal alignment taking these factors into account. Sections of the potential cable alignment run outside Route Corridor 2 in Study Areas AB, C and D. The starting point for defining underground alignments was to consider the most direct route as this would involve the least disruption and lowest cost.

Technology issues

13.59 No further information is available on the use of two cables per phase, however if the technology becomes available before finalisation of the application for a DCO, National Grid will back check and review its proposals. The use of two cables per phase could deliver benefits in terms of narrower construction swathe and reduced environmental effects.

13.60 The use of HVDC for a Bramford to Twinstead Tee connection was considered in the Review of Strategic Options Report which concluded that the route length is not long enough for a HVDC solution. Over such short distances, HVDC solutions are significantly more expensive than the AC underground technologies, for the required electrical capacity. This would not apply in the case of a connection to an off-shore wind farm.

13.61 Because of wider capacity issues in East Anglia, extending the HVDC feed from the planned East Anglia Offshore Wind Farm closer to the point of connection to the grid at Twinstead would not remove the need for a connection between Bramford and Twinstead Tee. Even if it were to be considered, while it would obviate the need for

a converter hall at Bramford, it would still require a similar converter station at the new point of connection to the transmission network.

13.62 Gas-insulated transmission lines (GIL) are a developing alternative to conventional underground cables for high voltage transmission. The IET report suggests that capital costs may be higher compared to conventional underground cables. GIL would also not be able to achieve the ratings necessary on this project unless installed in tunnels. However an important consideration is that, although GIL has been deployed worldwide for electricity transmission over short distance, its application for distances such as that which would be required between Bramford and Twinstead is unproven and could not be established within the timescale of the connection programme, even if the potential connection to Sizewell C were delayed, as other connection obligations would still have to be met.

13.63 To install cables in tunnels would involve significant civil engineering works associated with driving twin tunnels of at least 4m diameter for a distance of about 26km. Twin tunnels would be required to dissipate the heat generated by the cables. Approximately ten access shafts would be required, each of which would be surmounted by a headhouse to provide access and ventilation. The anticipated scheme development period of about seven years means that National Grid would be unable to meet its contractual obligations or comply with its statutory duties to develop and maintain an efficient, co-ordinated and economical system of electricity transmission. There would also be significant environmental impacts, associated with the excavation and removal of large quantities of spoil material, and very high costs.

13.64 For the reasons outlined above and explained elsewhere, wholly underground solutions have been rejected. The Selection of Preferred Corridor Report concluded that the basis of the scheme should be an overhead line connection between Bramford and Twinstead Tee, but that the undergrounding of sections of the proposed overhead line, to mitigate the potential impacts of the scheme on sensitive locations, should be evaluated.

Cost issues

13.65 East Anglia ONE Limited is a commercial undertaking and an unregulated energy provider. It is for the company to determine whether their connections should be underground. As a regulated public utility National Grid has a duty to demonstrate that its proposals represent an efficient and economical use of resources.

13.66 National Grid is required to operate within the terms of its statutory duties and its Transmission Licence. Issues of the willingness of the public to pay to avoid the

effects of transmission lines are matters for the Secretary of State and Ofgem. However, National Grid has recently concluded a high level survey to assess the public's attitude towards "willingness to pay" and the increases in their electricity bills that they would be prepared to pay to put new and/or existing electricity transmission lines underground. A copy of this report can be found on the National Grid website[41].

13.67 It is not possible to divert money spent on maintenance towards undergrounding as National Grid still needs to maintain its existing network to ensure security of supply and public safety.

13.68 The costs of undergrounding cited in the COR include an allowance for Sealing End Compounds. As noted earlier, the costs of undergrounding the whole connection would be substantially higher than a partial overhead solution requiring three sealing end compounds.

13.69 While the cost of undergrounding would in part reflect the ground conditions, the cost of undergrounding in "soft" areas would still be substantially more expensive than of overhead lines as it would still be necessary to undertake the same degree of excavation and installation works as in areas of firmer substrate.

Sealing end compounds

13.70 The effect of sealing end compounds on the character of the countryside and local views is considered in the COR (Chapter 12).

13.71 Interim locations for sealing end compounds have been considered in relation to potential effects on landscape, visual amenity, biodiversity and cultural heritage. Once the broad principles of the connection have been confirmed, additional technical and environmental studies will be undertaken to define more precisely the location and design of sealing end compounds. The aim will be to minimise their impact on the landscape character and views. This can be achieved by locating the equipment so that it is screened by natural features such as landform and woodland and/or where mitigation by additional planting can be achieved. Consultation with those persons with an interest in the land will be important in defining appropriate locations and access arrangements.

[41] http://www.nationalgrid.com/NR/rdonlyres/6704CF1E-D5D1-4A14-8ACD-7ED62D2BA536/51254/WTPResearch2012.pdf

13.72 The approximate size of a sealing end compound is given in the COR (4.23) as 85m X 50m.

Other issues

13.73 Underground cables produce no external electric field and ground-level magnetic fields from underground cables fall much more rapidly with distance than those from a corresponding overhead line. Induced ground currents are highly unlikely to occur as very particular circumstances and fault conditions would need to apply which the cable installation is designed to avoid. No effects on livestock are anticipated.

13.74 There is a 132kV underground cable between Burstall Bridge and Bramford in Corridor 2A. Following representations, consideration has also been given to an underground cable option through Corridor 2A as noted earlier in this report.

13.75 Accommodating both existing and proposed 400kV circuits would involve 36 rather than 24 circuits and require a cable swathe about 130m in width. Nor would it be possible to accommodate both 400kV and 132kV cables in the same trench. Due to the way cable circuits are constructed it is important to manage the thermal effects from cable heating. This requirement, along with the need to ensure that both 132 kV and 400 kV cable circuits can be accessed independently, means that both cables cannot be buried in the same trench.

13.76 If a landowner objected to the installation of cables beneath their land, National Grid could seek compulsory land rights to install underground cables in the same way that it could for overhead lines. National Grid would only move forward with seeking compulsory land rights in its Development Consent Order application where there is a clear justification and all other avenues had been considered.

13.77 The width of construction swathe would be dependent on the area in which the cables were being laid, for example if a hedge was in the way, the swathe width could vary. The need for safe working areas, topsoil and subsoil storage and passing places means that the typical width required would be 65m. However at intervals, and for short lengths of an underground cable route, the soil could be stored away from the trench and passing widths restricted to reduce the construction swathe to the permanent easement width.

13.78 HDD would be considered for example where there were important hedgerows and road and railway crossings but that this would be the exception rather than the rule due to the inherent installation risks which could lead to re-working, greater environmental effects, programme delays and greater costs of using HDD. The

Connection Options Report identified a number of locations where it was proposed to use HDD, including the River Stour and the Sudbury branch railway line. The limits to the use of HDD were generally constrained by the length of cables that could be pulled through the ducts installed by HDD which is of the order of 600-700m (constrained by cable drum lengths for 400kV XLPE).

13.79 The environmental and socio economic effects of undergrounding have been considered in the COR for each study area.

General - Location and design

Issues

13.80 The following issues were identified :

- precise location of pylons has not been specified;
- why are the lines not combined on single pylons on existing lines? Existing pylons should be used for new line.

Responses

13.81 National Grid has not yet determined pylon locations which will be governed by further technical and environmental studies and by discussions with landowners and occupiers.

13.82 It is not possible to utilise the existing 132kV pylons to carry a 400kV overhead line because the structures are inadequate to carry the additional weight of the 400kV conductors and greater separation distances between pylons would be required to ensure safe electrical clearances.

General – Landscaping and Visual Impact

Issues

13.83 The following issues were identified :

- in a time of recession, its important to protect free, natural amenity providing pleasure, relaxation, stress free release;
- the proposal will cause general harm to views of countryside as it will effectively industrialise a rural environment and lead to blight on property and land;
- pylons would be visible from a number of vantage points and there are concerns over impacts on the skyline;

- much of the "undesignated" landscape along the route affected is of equal or better value to those identified and therefore should be treated in the same manner and the impacts on a number of Special Landscape Areas have been overlooked. The value of the area is in its continuous rolling nature where the views are of equal importance from all standpoints;
- overhead lines would be harmful to peaceful and picturesque villages;
- concern about harm to the views of walkers, tourists and cyclists;
- all redundant pylons should be removed;
- whether a better looking pylon is being developed;
- the sealing end compounds are considered to be ugly;
- high cost developments such as those proposed have a finality that renders it improbable in the extreme that once erected any amelioration can be afforded. Damage to the environment may for practical purposes be permanent.

Responses

13.84 The effects on landscape and views are covered extensively in the COR. Landscape baseline conditions record the differences in the landscape of each study area. The differences between the designated Dedham Vale AONB and the other study areas are set out in the landscape assessment contained in the COR. Although other study areas may share some landscape characteristics common to the Dedham Vale AONB, the AONB as a nationally designated landscape is of national value and the value of this landscape influences its capacity to accommodate an additional overhead line.

13.85 All redundant pylons between Bramford and Twinstead Tee will be removed as part of the scheme.

13.86 National Grid is reviewing pylon designs, including those used overseas. It will consider and consult on appropriate alternative designs during the project development. National Grid participated in the Department of Energy and Climate Change competition to design a new pylon and is currently working with engineers and other experts on the technical feasibility of the winning design. If the winning design meets technical standards in time, it will be included in our consultation.

13.87 As noted earlier, the siting and design of sealing end compounds will be carefully considered to minimise their environmental impact. This may include ground modelling and extensive planting at each site.

13.88 Overhead line infrastructure has a design life of 80 years although this does not mean that it could not be replaced should new technologies become available.

Property values, compensation arrangements and community benefits

Issues

13.89 The following issues were identified :

- whether the effect on property values considered as proposals have caused problems with saleability of houses and the overhead lines are likely to devalue properties;
- whether there will be compensation for those affected?
- the scheme does not seem to provide equivalent provisions for compensation, other than wayleave agreements with landowners, for individuals impacted upon;
- an Environmental Improvement Fund should be established to support local environmental initiatives, which can be accessed by community groups, parish councils etc.

Responses

13.90 At this stage of the development of the project, indicative alignments for overhead lines have been designed to avoid residential areas and individual properties as far as possible on grounds of general amenity. This is likely to help minimise any effects on property values. Whilst socio-economic effects have generally been taken into account in the Connection Options Report, the effect on the value of individual properties has not been a factor in the decision making process.

13.91 It is recognised that the visual impact of any new overhead line is likely to be an important issue for local communities. National Grid seeks to maximise the distance between the line and properties wherever we can. Compensation arrangements are set out in legislation, which is a matter for the Government. The relevant legislation provides that those whose property will have National Grid equipment sited on or across it (e.g. if a pylon is located on the land or the conductors (wires) oversail a landholding) are entitled to compensation. National Grid works closely with any landowners on whose land its equipment is sited to negotiate compensation terms if this is appropriate.

13.92 With regard to 'investing in communities', National Grid has a number of commitments. It works with local planning authorities and parish councils to provide benefits to local communities through planning processes, such as planning obligations (s106 agreements) or other such measures. It works with the Planning Inspectorate and local planning authorities to agree and deliver necessary planning conditions. Through environmental assessments, measures are identified and put in place which offset the environmental impacts of its construction works and a new community investment programme, 'Bringing energy to life', provides economic, social and environmental benefits to communities after planning consent has been granted. Details of this scheme will be communicated locally to communities, charities and community organisations who can apply for funding in the vicinity of our projects.

Substation and related infrastructure

Issues

13.93 The following issues were identified :

- the need for a substation in high value landscape to the west of Twinstead Tee has not been established;
- a single transformer substation would need to be upgraded to two transformers in the next decade – these should be located at an existing substation (Bramford or Braintree);
- there does not appear to have been a structured and transparent consideration of all potential substation options. Other options suggested included laying a 132kV underground cable from Bramford to Belchamp substation or from the Braintree substation to Rushley Green. Such options would allow more 132 kV pylons to be removed and there would then be no need for another substation to be built;
- to bury a 132 kV line does not require more than a 0.5 wide x 1.0 m deep trench and at a cost comparable to the substation;
- there is a lack of clarity about where substation is to be built;
- concerned about the proposal for a new substation in the area which will make a serious impact culturally, environmentally and ecologically;
- the noise levels which are barely noticeable in urban areas will be obtrusive and disturbing in quiet rural locations;

- the redundant 132kV line west of Twinstead Tee to Rushley Green, near Castle Hedingham should be removed as part of the scheme;
- a detailed timetable and consultation strategy is required for the provision of any additional infrastructure that the UKPN business case proposes. This should include a targeted awareness programme and revised Community Forum arrangements;
- a number of detailed issues were raised, including :
    - the effect on Castle Hedingham Parish, especially the Edeys Lane site;
    - a concern that National Grid appear to be upgrading the wires on the large pylons running through the Parish so a larger power capacity can be carried on the pylons in anticipation of a substation in the parish;
    - impact on ancient woodlands such as Butler's Wood and Waldergrave Wood;
    - little consideration for architectural Heritage – in particular grade II* listed Butler's Hall.

Responses

13.94 UKPNs Needs Case report was made available in July 2012. The report concludes that a new substation to the west of Twinstead Tee is the preferred option for UKPN in respect of the reconfiguration of their 132kV network to facilitate the removal of the existing 132kV line between Bramford and Twinstead.

13.95 The UKPN Need Case supports a single transformer in order to replace the capacity lost as a result of the removal of the existing 132kV line. Should UKPN determine at some point in the future that a second transformer may required, then it would prepare a need case and consider options in the normal way. This may or may not support provision of a transformer at a substation to the west of Twinstead Tee. Both Bramford and Braintree substations have space constraints which may preclude the siting of additional transformers at these locations.

13.96 The UKPN report considered a number of options for maintaining connectivity with the local distribution network, including construction of underground 132kV circuits between Bramford and Twinstead Tee (with connection to Belchamp) and between Braintree and Rushley Green. The cost of underground cable options are presented in the report for comparison with the costs of a substation west of Twinstead Tee. Burying the 132kV circuits would require a trench 7m wide.

13.97 National Grid is still in discussions with UK Power Networks regarding the possibility of removing the section of 132kV between the Twinstead Tee and the proposed new substation. However, the decision is one for UKPN as owners and operators of the line.

13.98 National Grid is undertaking its own appraisal of options for maintaining connectivity with the local distribution network, based on the findings of the UKPN report. In the event that this confirms that a substation should be provided west of Twinstead Tee, further technical and environmental studies will consider the merits of potential locations for a substation and the relevant information will be presented in an Options Appraisal report which will inform public consultation. Such a consultation would last for at least 28 days, with public events held in local village halls. Dates and locations would be published on the website and local residents and parish councils would be notified by letter in advance.

13.99 National Grid considers the location and design of its substations with an objective of minimising environmental effects, including on visual amenity, and ecological and heritage assets. With regard to noise, National Grid takes account of the British Standard for rating industrial noise affecting mixed residential and industrial areas[42]. It normally designs its substations to achieve no net increase in noise levels at the nearest residential property or other sensitive receptor.

13.100 Upgrading the existing 4YL 400kV overhead line is part of a refurbishment project unconnected with the future requirement for a substation. It is replacing infrastructure which is more than 40 years old and at the end of its design life.

Implementation

Issues

13.101 The following issues were identified :

- every effort should be made to keep the damage to important landscape and biodiversity features, such as woodland, trees and hedgerows to a minimum in those sections which are selected for undergrounding. The use of directional drilling should include hedgerows supporting dormice;

[42] BS4142 : 1997

- mitigation must be provided to ensure connectivity across the landscape and that drainage to wetland habitats is not impeded;
- effort should be made to provide enhancements to the wider landscape and its biodiversity and geodiversity where possible;
- the pylons forming the existing 132kV line should be removed before the new line is installed;
- potential impacts on the railway need to be fully assessed and appropriate asset protection measures agreed with Network Rail.

Responses

13.102 As noted in the COR, there is likely to be some unavoidable loss of trees and hedgerow as a result of undergrounding. Loss of some trees and hedgerow could be minimised through careful routeing and the reduction of the working width of the cable swathe at hedgerows. Although the use of directional drilling is proposed for some features it would not normally be employed at hedgerow crossings unless the hedgerows are of demonstrable and significant value and no other mitigation measures are available.

13.103 The COR assessment considered the role of habitats in providing wildlife corridors across the wider landscape and outlines where fragmentation impacts are likely to occur. The COR goes on to outline a range of methods to minimise and avoid fragmentation impacts.

13.104 Replacement hedgerow planting within the cable swathe and compensatory tree planting outside the cable swathe, subject to landowner agreement, could assist in lessening potential effects. Additional tree planting and habitat creation will also be considered elsewhere on the scheme to provide enhancements to the landscape and biodiversity, again subject to landowner agreement.

13.105 The pylons forming the existing 132kV overhead line between Burstall Bridge and Twinstead Tee will be removed as soon as the alternative connection to the local distribution network has been commissioned. This will facilitate construction of the 400kV connection which closely follows the route of the 132kV overhead line.

13.106 It is proposed to use directional drilling to install underground cables beneath the Sudbury branch railway line. The works will be undertaken from outside the boundaries of the operational railway land. Full details of the proposed construction methodology, including associated asset protection measures, will be agreed with

Network Rail and any necessary powers will be drafted for inclusion in the Development Consent Order in consultation with Network Rail.

Issues

13.107 The following issues were identified :

Health, Safety and Security

- overground supplies, high winds and gales can result in supply failures which can affect many people, including the old and infirm, whereas a comprehensive underground system would not be affected by these conditions and could provide additional benefits such as the opportunity to produce geothermal energy;
- there will inevitably be a doubling of EMFs impact, potentially, on families with young children.

Responses

13.108 Extreme weather conditions can occasionally disrupt electricity supplies where these are delivered by overhead lines. However overhead lines can normally be repaired within two days and the transmission network is designed to maintain supplies during unplanned outages. Underground cables are not immune to failure and incidents can prove more difficult to locate and repair and can take several weeks to repair.

13.109 National Grid designs all of its systems to be compliant with ICNIRP guidelines on exposure to electric and magnetic fields. The detailed connection design will take these guidelines fully into account, whichever option is selected. An assessment of the potential impact of electric and magnetic fields will be included in the environmental impact assessment of the preferred connection design.

14 SUMMARY AND CONCLUSIONS

Summary

14.1 The Connection Options Report was subject to consultation as part of the Stage 2 Consultation phase of the Bramford to Twinstead Tee Connection Project. The purpose was to obtain the views of statutory and non-statutory bodies, other agencies and the public on the findings of the report and to determine whether there are any additional constraints or issues which could influence the detailed design going forward.

14.2 The representations received have been analysed and reported in this document, together with National Grid's responses to the representations. National Grid has considered whether, as a result of information received, it should modify its proposed interim alignment.

14.3 A number of general points were raised which, while some were relevant to the overall project, had no bearing on the selection of interim alignment or the decision on whether or not to use underground cables for sections of the connection.

14.4 Many site or area specific representations were received. In the main the issues raised had already been taken into account in the assessment included in the COR and had already influenced the decision-making process.

14.5 In particular, the project team reviewed the following areas in response to representations raised:

- Orchardlands at Burstall;
- Hintlesham Hall;
- College Farm, Hintlesham;
- Undergrounding in Corridor 2A;
- The Brett Valley;
- The location of sealing end compounds;
- The connection to the Bramford-Braintree overhead line at Twinstead.

Confirmation of Preferred Alignment

14.6 Having taken representations into account, it is concluded that the Preferred Alignment should be confirmed as follows :

- Study Area C - Brett Valley - a new overhead line alignment to the south of the existing line;
- Study Area D – Polstead - a new overhead line alignment to the south of the existing line;
- Study Area E – Dedham Vale AONB – an underground cable section from Heath Road, Polstead Heath to Leavenheath;
- Study Area F – Leavenheath/Assington - a new overhead line alignment to the south of the existing line;
- Study Area G – Stour Valley - an underground cable section from west of Dorking Tye to the Bramford-Braintree-Rayleigh overhead line in the vicinity of tower 4YLA04 south of Twinstead Tee.

14.7 The one area where, in response to representations received, a different approach is now recommended compared to the interim alignment in the COR is in Study Area G where a revised route for the underground cable is proposed to connect to the Bramford-Braintree-Rayleigh overhead line in the vicinity of tower 4YLA04 rather than at tower 4YLA01. This would avoid adverse effects associated with a sealing end compound and terminal tower on the area close to Twinstead Tee, including Sparrow's Farm and Hill Farm and would deliver additional benefits associated with the removal of three spans of the Bramford-Braintree-Rayleigh overhead line as well as the removal of the 132kV overhead line in this area.

14.8 In respect of Study Area AB – Bramford/Hintlesham – it has been agreed that further work should be undertaken to provide English Heritage, the government's adviser on heritage issues, with the additional information it has requested. A decision on which alignment to take forward in Study Area AB must therefore be deferred until English Heritage has considered its position following receipt of this information.

14.9 Representations made in response to earlier stages of consultation had stressed the importance of reducing uncertainty regarding the project. This factor, taken together with programming issues, means that it is considered preferable to proceed to confirm the preferred alignment for the major part of the connection, rather than to

defer such an announcement until the issues affecting Study Area AB have been resolved.

14.10 The preferred alignment for the corridor west of Study Area A is shown on Figure 1. The preferred underground cable route and cable sealing end compound location in the western part of Study Area G are shown on Figure 2.

Next steps

14.11 The next step is to commence the development of a detailed connection design, based on the Preferred Alignment confirmed above, which will also be influenced by technical considerations, environmental and geo-technical surveys and discussions with affected landowners and occupiers. The overall connection design will also encompass the proposed substation west of Twinstead should the need for the substation be confirmed.

14.12 During Stage 3 of the process, the detailed connection design will be subject to environmental impact assessment (EIA) and further public consultation.

14.13 The project is subject to a continuous process of backcheck and review in the pre-application stages to ensure that when new information comes forward (be it related to policy, technological developments, environmental or other factors), this is communicated to the project team and it is reviewed to determine whether different conclusions should be reached in the light of the new information.

14.14 It is anticipated that National Grid's formal consultation on the detailed connection design and preliminary environmental information will be undertaken in Summer 2013. The proposal will then be finalised and it is anticipated that a submission will be made to the Planning Inspectorate in late 2013, seeking consent for the connection and associated development. Timescales and activities may be subject to alteration as the project progresses.

ABBREVIATIONS

AC	Alternating Current
AONB	Area of Outstanding Natural Beauty
CPRE	Council for the Protection of Rural England
CWS	County Wildlife Site
DCO	Development Consent Order
DPD	Development Plan Document
EIA	Environmental Impact Assessment
ERM	Environment Resources Management
GCN	Great Crested Newt
GIL	Gas Insulated Line
Ha	Hectare
HDD	Horizontal Directional Drilling
HGV	Heavy Goods Vehicle
HVDC	High Voltage Direct Current
ICNIRP	International Commission on Non-Ionising Radiation Protection
IET	Institution of Engineering and Technology
IPC	Infrastructure Planning Commission
Km	Kilometre
kV	Kilovolt
LDF	Local Development Framework
LIDAR	Light Detection and Ranging
LNR	Local Nature Reserve
LWS	Local Wildlife Site
m	metre/million
MVA	Mega Volt Ampere
NCR	National Cycle Route
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
OHL	Overhead Line
PILs	Persons with an Interest in Land
PINS	Planning Inspectorate
PROW	Public Right of Way
RSPB	Royal Society for the Protection of Birds
SLA	Special Landscape Area
SSSI	Site of Special Scientific Interest
TEP	The Environment Partnership
TPO	Tree Preservation Order
UKPN	United Kingdom Power Networks
XLPE	Cross Linked Polyethylene
ZVI	Zone of Visual Influence

APPENDICES

Appendix A

Local authorities consulted

Essex County Council

Suffolk County Council

Babergh District Council

Braintree District Council

Mid Suffolk District Council

Appendix B

Parish and Town Councils consulted

Bulmer
Bures St Mary
Burstall
Castle Hedingham
Great Yeldham
Hadleigh
Little Cornard
Sible Hedingham
Sproughton
Toppesfield
Shelley
Assington
Boxford
Leavenheath
Newton
Polstead
Alphamstone and Lamarsh
Bramford
Hintlesham and Chattisham
Copdock and Washbrook
Flowton
Gestingthorpe
Great Henny, Little Henny, Middleton and Twinstead
Great Maplestead
Layham
Little Blakenham
Nayland with Wissington
Pebmarsh
Stoke by Nayland
Raydon
Wenham Parva
Wenham Magna
Wickham St Paul

Appendix C

Other Prescribed Bodies consulted

East of England Development Agency
East of England Strategic Health Authority
Health and Safety Executive Head Office
Health and Safety Executive
Suffolk Fire & Rescue Service Headquarters
Essex County Fire & Rescue Service
Suffolk Constabulary
Essex Police Headquarters
Commission for Architecture and the Built Environment
The Equality and Human Rights Commission
The Commission for Sustainable Development
Natural England (East of England)
Natural England
English Heritage
English Heritage (East of England)
The Environment Agency
The Environment Agency (Regional)
Homes and Communities Agency
Commission for Rural Communities
The Marine and Fisheries Agency
Maritime and Coastguard Agency
Civil Aviation Authority
Passenger Transport Executive
Highways Agency Head Office
The Highways Agency
Suffolk County Council Highways Department
Essex County Council Highways Department
Rail Passenger Council
Disabled Persons Transport Advisory Committee
The Coal Authority
The Office of Rail Regulation
Office of the Gas and Electricity Markets
Ofwat

Environment Agency

Association of Drainage Board Authorities

East Suffolk Internal Drainage Board

British Waterways Head Office

Trinity House

The Health Protection Agency

Secretariat of the Suffolk Resilience Forum

Suffolk Resilience Forum

Secretariat of the Essex Resilience Forum

The Crown Estate Commissioners

The Forestry Commission England

Dedham Vale AONB & Stour Valley Project

Network Rail

Joint Nature Conservation Committee

Appendix D

Other Bodies consulted

Government Office for the East of England

Local Government Association

Defence Estates Safeguarding Head Office

NATS

Royal Society for Protection of Birds

The National Trust

Essex Wildlife Trust

Suffolk Wildlife Trust

Woodland Trust

Campaign for National Parks

National Farmers Union

Country, Land and Business Association

The Open Spaces Society

Sustrans

Ramblers Association

CPRE National Office

CPRE

Friends of the Earth

Greenpeace

Colne Stour Countryside Association

Dedham Vale Society

Suffolk County Council Liberal Democrats Group

Suffolk Preservation Society

Transition Lavenham

Appendix E

Consultation letter to residents

Freepost NATIONAL GRID CONNECTIONS
Tel: 0800 377 7340
E-mail: bramford-twinstead@uk.ngrid.com
Web: www.nationalgrid.com/bramford-twinstead

29th May 2012

Dear Resident

In July 2011 National Grid announced Corridor 2 as the preferred corridor for the proposed Bramford to Twinstead Tee Connection Project. Following the announcement we committed to look along the whole route to consider whether it would be appropriate to underground any sections of the connection.

Today we published our Connection Options Report which sets out further details of our proposals for the new 400,000 volt connection between Bramford near Ipswich, and Twinstead Tee, south of Sudbury.

In our report we propose two sections of undergrounding. The first of these sections would run for approximately 4.2km through the Dedham Vale Area of Outstanding Natural Beauty which is national level designation in recognition of its landscape and scenic qualities. The second section would run through the Stour Valley for a distance of approximately 3.8km. The Stour Valley is recognised as an area of particular sensitivity due to the combination of its landscape and scenic qualities and the inspiration that it has provided for nationally important artists such as Nash, Gainsborough and Constable. The significance of this is recognised by the way in which the landscape of the Stour Valley is managed in a similar way as if it were part of the designated area of outstanding natural beauty.

Where we have proposed an overhead line we have also identified what we believe to be the most appropriate alignment. This is also set out in the Connection Options Report.

These proposals follow extensive consultation with local communities and statutory consultees including Suffolk County Council, Essex County Council, Babergh District Council, Mid Suffolk District Council, Braintree District Council, Natural England, English Heritage, the Environment Agency and other specialist environmental bodies. We believe our proposals reflect the right balance between the very high costs of undergrounding, which pass through to consumers, with the potential landscape and visual impacts of an overhead line.

Over the next eight weeks, we will take feedback on the findings of the report. The closing date will be Friday 27 July 2012. We will consider that feedback before publishing a statement on our preferred interim alignment. The interim alignment will form the basis for further detailed studies and ongoing consultation to develop the proposals in greater detail. This will take us up to the time when we will formally consult on the design we intend to submit a planning application for in late 2013.

P.T.O

You can find the full Connection Options Report and its executive summary, on our project website: www.nationalgrid.com/bramford-twinstead. Please also visit our project website to view members of the Project Team discussing the contents of the report. If you do not have access to the internet, inspection copies will be available at your county and district council offices and libraries across the area. For details of locations, please call our Community Relations team on the free phone number below.

If you would like to submit a comment on the Connection Options Report please do so via:

Email: bramford-twinstead@uk.ngrid.com

Online comments box: www.nationalgrid.com/bramford-twinstead

Freepost: Freepost NATIONAL GRID CONNECTIONS

Telephone: 0800 377 7340

You will soon be receiving the spring edition of our newsletter, 'Project News', which will also include information on the Connection Options Report as well as an update on other work in the area.

For more information on how you can participate in our consultation programme or if you require any other information on the Project, please visit: www.nationalgrid.com/bramford-twinstead, or contact the Community Relations Team on 0800 377 7340 or e-mail bramford-twinstead@uk.ngrid.com.

Yours sincerely,

Martin Davies

Lead Project Manager

Appendix F

Feedback Form

Bramford to Twinstead Tee Connection Project

27 and 28 July Information Events Feedback Form

This feedback form is to give you the opportunity to provide feedback on our proposed connection from Bramford to Twinstead Tee.

Your views really do count. The feedback you provide will influence the decisions made and will be included as part of our application to the Infrastructure Planning Commission (or its successor) – the body responsible for making decisions on major infrastructure projects.

Please submit your comments online at www.bramford-twinstead.co.uk

Alternatively you can place this form in the feedback box at one of our events or post it to: FREEPOST: NATIONAL GRID CONNECTIONS

We welcome your feedback at any point during our consultation.

SECTION A - ABOUT YOU

Please complete the following questions using blue or black pen only

Please use capitals

Title First Name _____

Surname _____

Address:

Post code:

Email: _____

Telephone (if you wish to be contacted by phone): _____

Are you responding on behalf of an organisation?

Yes

No

If yes which organisation _____

Date (of completing this form): _____

SECTION B – YOUR FEEDBACK

Q1. Do you have any comments on this project?

Thank you for completing this feedback form. All of the comments we have received will be logged and analysed and will help inform the decision making process.

More information is available from National Grid via the contact details below.

Freephone: 0800 377 7340

Email: bramford-twinstead@uk.ngrid.com

Web: www.bramford-twinstead.co.uk

Freepost: FREEPOST NATIONAL GRID CONNECTIONS

Data Privacy Notice

National Grid is committed to respecting your privacy and to complying with all applicable data protection and privacy laws. We are undertaking this consultation to seek your views on the Bramford to Twinstead Tee Connection Project. Your information may, for this purpose, be disclosed to or shared with the following:

- Other National Grid Group companies;
- Third party service providers, contractors, or advisors who provide services to us; and
- The Infrastructure Planning Commission (IPC), and its successor body, and any relevant Local Planning Authority (LPA)

Appendix G

Categorisation of representations

(from Dialogue by Design)

Theme	Sub-theme	Count
Consultation and information	Challenge consultation - costs/resources	2
	Challenge consultation - falls short of IPC process	1
	Challenge consultation - general/not valid/not fair	37
	Challenge consultation - NG unlikely to be influenced	27
	Challenge consultation - not accessible enough to all	2
	Challenge consultation - process/materials	17
	Community Forum - general comment	2
	Community forum - negative comment	9
	Community forum - positive comment	1
	Consultation process not well publicised	1
	Consultation results should be well disseminated	4
	Documents - reference to specific documents/sections	12
	Information/materials - challenge content/inaccurate	15
	Information/materials - not useful/not informative/unclear	25
	Information/materials - other comment	17
	Information/materials - useful/appreciated/informative	7
	Integrate with regional/local authority planning processes	2
	Issues to address in relation to integration of consultations	7
	More info - compensation/mitigation	2
	More info - construction	1
	More info - consultation process	12
	More info - costs	4
	More info - decision making process	5
	More info - engineering and design	1

Theme	Sub-theme	Count
	More info - environment	3
	More info - general	13
	More info - need case	1
	More info - siting within corridors/route details	15
	More info - substation	4
	More info - undergrounding	2
	NG meeting - Hintlesham	3
	NG meeting - negative comment	7
	NG meeting - other comment	6
	NG meeting - positive comment	4
	People/organisations/communities NG should to talk to	3
	Process request - community forum	34
	Process request - consultation	35
	Process request - other	7
	Public/local opinion should be valued	30
	Support consultation - general	24
	Timescales - acceptable	1
	Timescales - not enough notice given	3
	Timescales - too long	1
	Timescales - too short	9
	Was not aware/was not made aware of consultation	1
Cost	Comment on profits - from project/for shareholders	6
	Cost assessment - consider cost over longer timescale	11
	Cost assessment - take into account other factors	19
	Cost assessment - too much focus on costs	13
	Cost of undergrounding - acknowledge high costs but still opt for it	14
	Cost of undergrounding - challenge figures from NG	19

Theme	Sub-theme	Count
	Cost of undergrounding - maintenance cheaper over time	2
	Cost of undergrounding - not significant/is affordable	44
	Cost of undergrounding - other comment	6
	Cost of undergrounding - too expensive	3
	Opt for cheapest route/site	2
	Project cost - general concern	6
	Who pays - actual consumer should pay	5
	Who pays - government/tax payer should pay	1
	Who pays - National Grid should pay	1
	Who pays - other suggestions	3
Previous decisions	Alternatives - generation	5
	Alternatives - overall approach	4
	Interim alignment - challenge COR	26
	Interim alignment - consider route as a whole	5
	Interim alignment - general support	24
	Interim alignment - not enough undergrounding	10
	Interim alignment - support 2B selection	1
	Need case - challenge route	3
	Need case - challenge substation	11
	Need case - general challenge	19
	Need case - general support	8
	Stage 1 - approve of preferred corridor decision	1
	Stage 1 - challenge preferred corridor decision	7
	Stage 1 - decision not taking account of undergrounding research	4
Environment	Environmental Impact Assessment - comment	12
	Environmental mitigation - general	4
	Environmental mitigation - of cable route	3

Theme	Sub-theme	Count
	Environmental mitigation - of overhead line	3
	Environmental mitigation - suggestions	7
	Impact on archaeological sites - general concern	5
	Impact on biodiversity and wildlife	21
	Impact on biodiversity and wildlife - not a concern/can be mitigated	3
	Impact on birds	7
	Impact on built environment	1
	Impact on conservation areas	1
	Impact on cultural heritage - general concern	18
	Impact on cultural heritage - less with corridor 2B	1
	Impact on designated area - general concern	53
	Impact on environment - general concern	22
	Impact on environment - industrialise/urbanise landscape	4
	Impact on listed buildings - general concern	34
	Noise - concern	4
	Too much focus on environment	3
	Visual impact mitigation - general	7
	Visual impact mitigation - of overhead line	4
	Visual impact mitigation - of sealing end compound	2
	Visual impact mitigation - suggestions	2
	Visual/landscape impact - cumulative with existing power lines	11
	Visual/landscape impact - general concern	89
	Visual/landscape impact - not a concern	4
	Visual/landscape impact - sealing end compound	16
	Visual/landscape impact - substation	1
	Visual/landscape impact - worse with corridor 2A	4

Theme	Sub-theme	Count
Engineering, construction and operation	Access/maintenance	4
	Construction - impacts/general concern	12
	Impact of underground cabling and construction - not a concern	9
Health, safety and security	Aviation - concern	2
	Aviation - not a concern	1
	Health - animals	1
	Health - children	6
	Health - emotional health	1
	Health - general concern	11
	Safety - concerns about weather incidences	2
	Safety - other	6
	Security/terrorism risks	1
Policies and principles	Comment on European/international/energy policy/performance	4
	Comment on future energy infrastructure projects	8
	Comment on RIIO process/submission	1
	Comment on UK energy policy/performance	8
	Energy security - will be improved	2
	Holford rules/guidelines for overhead routeing	31
	Reference to national and local planning policy	12
	Reference to National Grid policy	15
	Reference to other East Anglia generation	3
	Reference to other specific policy/regulation/legislation	9
	Reference to Schedule 9 Electricity Act	5
	Role of/comment on National Grid	38
	Role of/comment on Ofgem	4
	Role of/comment on UK goverment/DECC	4

Theme	Sub-theme	Count
Reference	Refer to another person's/organisation's submission	87
	Refer to another question/response	6
	Refer to level of public/local opinion	33
	Refer to reports/technical studies/websites	15
	Reference to existing experience in the local area	3
	Reference to existing experience outside UK	3
Routeing and design	Build near existing 400kv line	16
	Build south of existing 400kv line	3
	Comment on 132kv line	1
	Concern about two lines of pylons	34
	Design - of pylons	8
	Design - of underground cables	1
	Design - overhead line technology is out of date	13
	Design - pylon spacing	2
	Design of sealing end compound	1
	Least visual/environmental/landscape impact	5
	Oppose all pylons/overhead lines	18
	Remove 132kV line	12
	Remove redundant overhead lines	9
	Replace 132kv line	31
	Shortest/most direct route/minimise number of pylons	7
	Transmission - GIL	4
	Transmission - HVDC	1
	Transmission - other	1
	Transmission - subsea cables	3
	Underground - across other part of route	17
	Underground - across part of route	14

Theme	Sub-theme	Count
	Underground - all/general/across whole route	98
	Underground - decision-making process	6
	Underground - other comment	17
	Upgrade existing lines	6
	Use existing 132kv line	1
Substation	Castle Hedingham - community proximity/impact	1
	Comment on substation location	2
	Substation is a concern	13
Study Area AB	Bramford - business/tourism/local economy	1
	Bramford - comment on substation	20
	Bramford - community impact not a concern	1
	Bramford - community proximity/concern	1
	Bramford - listed building	1
	Bramford - recreation use/opportunities	1
	Bramford - request undergrounding	3
	Bramford - visual/landscape impact	6
	Burstall - access/maintenance	1
	Burstall - biodiversity and wildlife	3
	Burstall - challenge consultation	4
	Burstall - community proximity/concern	26
	Burstall - cultural heritage	1
	Burstall - follow existing overhead lines	6
	Burstall - listed buildings	1
	Burstall - oppose Corridor 2A	11
	Burstall - oppose Corridor 2B	2
	Burstall - property value	3
	Burstall - proximity to multiple lines	44

Theme	Sub-theme	Count
	Burstall - remove existing lines	2
	Burstall - request undergrounding	47
	Burstall - respondent proximity/concern	7
	Burstall - sealing end compound	1
	Burstall - substation is a concern	9
	Burstall - support Corridor 2A	1
	Burstall - support Corridor 2B	10
	Burstall - visual/landscape impact	27
	Chattisham - community proximity/impact	3
	Chattisham - support Corridor 2B	2
	Chattisham - visual impact mitigation	1
	Chattisham - visual/landscape impact	4
	Flowton - recreation use/opportunities	1
	Hintlesham - avoid existing overhead lines	1
	Hintlesham - biodiversity and wildlife	2
	Hintlesham - business/tourism/local economy	27
	Hintlesham - challenge consultation	8
	Hintlesham - community proximity/impact	21
	Hintlesham - community will not benefit	2
	Hintlesham - concern about two lines of pylons	1
	Hintlesham - cultural heritage	1
	Hintlesham - designated area	4
	Hintlesham - follow existing overhead lines	3
	Hintlesham - Hintlesham Hall	23
	Hintlesham - listed buildings	1
	Hintlesham - oppose alignment	1
	Hintlesham - oppose corridor 2A	3

Theme	Sub-theme	Count
	Hintlesham - property value/saleability	3
	Hintlesham - proximity to multiple lines	4
	Hintlesham - recreation use/opportunities	1
	Hintlesham - remove existing lines	1
	Hintlesham - request undergrounding	25
	Hintlesham - respondent proximity/concern	11
	Hintlesham - support Corridor 2B	5
	Hintlesham - visual impact mitigation	1
	Hintlesham - visual/landscape impact	11
	Hintlesham - visual/landscape impact - not a concern	3
	Hintlesham Woods - biodiversity and wildlife	15
	Hintlesham Woods - community proximity/impact	4
	Hintlesham Woods - designated area	28
	Hintlesham Woods - environmental impact	9
	Hintlesham Woods - environmental mitigation	1
	Hintlesham Woods - health concern	1
	Hintlesham Woods - impact on Forest School	35
	Hintlesham Woods - landowners/farmers	1
	Hintlesham Woods - noise	1
	Hintlesham Woods - oppose 2B	4
	Hintlesham Woods - oppose northern alignment	7
	Hintlesham Woods - property value/saleability	1
	Hintlesham Woods - respondent's proximity/concern	3
	Hintlesham Woods - support 2A	1
	Hintlesham Woods - support 2B	1
	Hintlesham Woods - support alignment	5
	Hintlesham Woods - support northern alignment	17

Theme	Sub-theme	Count
	Hintlesham Woods - support southern alignment	6
	Hintlesham Woods - too much focus on environment	4
	Hintlesham Woods - visual/landscape impact	9
	Non location specific - community proximity/concern	2
	Non location specific - support undergrounding	13
	Non location-specific - biodiversity and wildlife	1
	Non location-specific - business/tourism/local economy	6
	Non location-specific - challenge COR	5
	Non location-specific - cumulative impact	7
	Non location-specific - designated area	8
	Non location-specific - follow existing lines	1
	Non location-specific - listed buildings	3
	Non location-specific - oppose 2A	18
	Non location-specific - oppose northern alignment	1
	Non location-specific - request undergrounding	2
	Non location-specific - respondent's proximity/concern	5
	Non location-specific - support 2B	44
	Non location-specific - visual/landscape impact	13
	Non specific-location - oppose 2B	40
	Non specific-location - support 2A	42
	Other specific location	3
Study Area C	Brett Valley	1
	Brett Valley - cultural heritage	4
	Brett Valley - impact on designated area	2
	Brett Valley - oppose pylons	1
	Brett Valley - request undergrounding	7
	Brett Valley - support southern alignment	1

Theme	Sub-theme	Count
	Brett Valley - visual/landscape impact	8
	Hadleigh - community proximity/concern	1
	Hadleigh - conservation area	1
	Hadleigh - cultural heritage	2
	Hadleigh - impact on business/tourism/local economy	1
	Hadleigh - proximity to multiple lines	28
	Hadleigh - respondent proximity/concern	1
	Hadleigh - sealing end compound	1
	Hadleigh - support southern alignment	1
	Hadleigh - underground existing line	1
	Hadleigh - visual/landscape impact	2
	Layham - community proximity/impact	2
	Layham - visual/landscape impact	1
	Non location-specific - biodiversity and wildlife	1
	Non location-specific - community proximity/impact	3
	Non location-specific - follow existing lines	1
	Non location-specific - impact on business/tourism/local economy	1
	Non location-specific - listed buildings	1
	Non location-specific - remove 132kv line	2
	Non location-specific - request undergrounding	4
	Non location-specific - respondent's proximity/impact	1
	Non location-specific - sealing end compound	2
	Non location-specific - visual/landscape impact	5
	Non specific-location - suggest pylon location	1
	Non-location specific - cultural heritage	1
	Other specific location	1
Study Area D	Layham Quarry - listed building	1

Theme	Sub-theme	Count
	Layham Quarry - sealing end compound	4
	Layham Quarry - visual/landscape impact	1
	Non location-specific - biodiversity and wildlife	1
	Non location-specific - build south of existing line	1
	Non location-specific - community proximity	3
	Non location-specific - cultural heritage	1
	Non location-specific - impact on designated area	2
	Non location-specific - request undergrounding	3
	Non location-specific - sealing end compound	2
	Non location-specific - support alignment	1
	Non location-specific - visual/landscape impact	3
	Other specific location	3
	Polstead - designated area	2
	Polstead - sealing end compound	1
	Polstead - visual/landscape impact	1
	Polstead Heath - community proximity/concern	2
	Polstead Heath - concern about two lines of pylons	1
	Polstead Heath - recreation use/opportunities	1
	Polstead Heath - remove overhead line	1
	Polstead Heath - request undergrounding	1
	Polstead Heath - respondent proximity/concern	3
	Polstead Heath - sealing end compound	3
	Polstead Heath - undergrounding not necessary	1
	Polstead Heath - visual/landscape impact	1
Study Area E	Boxford - respondent proximity/concern	2
	Boxford - sealing end compound	1
	Boxford - visual/landscape impact	2

Theme	Sub-theme	Count
	Dedham Vale AONB - business/tourism/local economy	2
	Dedham Vale AONB - designated area	6
	Dedham Vale AONB - minimise construction impact	2
	Dedham Vale AONB - recreation use/opportunities	1
	Dedham Vale AONB - sealing end compound	12
	Dedham Vale AONB - support removal of 132kv line	1
	Dedham Vale AONB - support undergrounding	28
	Dedham Vale AONB - underground existing lines	8
	Dedham Vale AONB - undergrounding not sufficient	8
	Dedham Vale AONB - visual/landscape impact	15
	Non location-specific - support 132kV line removal	1
	Non location-specific - support undergrounding	3
	Non location-specific - undergrounding not necessary	1
	Non location-specific - visual/landscape impact	2
	Polstead - community proximity/concern	2
	Polstead - concern about two lines of pylons	1
	Polstead - recreation use/opportunities	1
	Polstead - request undergrounding	1
	Polstead - respondent's proximity/concern	1
	Polstead - sealing end compound	2
	Polstead - support proposals	1
	Polstead - visual/landscape impact	2
	Stoke-by-Nayland - recreation use/opportunities	1
	Stoke-by-Nayland - visual/landscape impact	1
Study Area F	Arger Fen SSSI - impact on area	4
	Assington - business/tourism/local economy	1
	Assington - designated area	1

Theme	Sub-theme	Count
	Assington - oppose northern alignment	1
	Assington - oppose southern alignment	1
	Assington - request undergrounding	4
	Assington - respondent proximity/concern	5
	Assington - visual/landscape impact	5
	Leavenheath - community proximity/concern	2
	Leavenheath - oppose undergrounding	1
	Leavenheath - respondent proximity/concern	2
	Leavenheath - sealing end compound	3
	Leavenheath - visual/landscape impact	3
	Non location-specific - biodiversity not a concern	1
	Non location-specific - business/local economy/tourism	1
	Non location-specific - community proximity/concern	2
	Non location-specific - cultural heritage	1
	Non location-specific - designated area	8
	Non location-specific - environment	1
	Non location-specific - follow existing 400kV line	1
	Non location-specific - landowners/farmers	1
	Non location-specific - request undergrounding	23
	Non location-specific - sealing end compound	14
	Non location-specific - support route alignment	3
	Non location-specific - visual/landscape impact	12
	Other specific location	2
Study Area G	Alphamstone - biodiversity and wildlife	1
	Alphamstone - designated area	1
	Henny - biodiversity and wildlife	1
	Henny - health concern	1

Theme	Sub-theme	Count
	Henny - impact of undergrounding	1
	Henny - landowners/farmers	1
	Henny - respondent proximity/concern	1
	Henny - sealing end compound	1
	Henny - visual/landscape impact	1
	Lamarsh - biodiversity and wildlife	2
	Lamarsh - construction impacts	1
	Lamarsh - health concerns	1
	Lamarsh - landowners/farmers	1
	Lamarsh - listed buildings	1
	Lamarsh - respondent proximity/concern	3
	Lamarsh - sealing end compound	1
	Lamarsh - visual/landscape impact	2
	Non location specific - construction	1
	Non location specific - least visual/landscape/landscape impact	1
	Non location-specific - biodiversity and wildlife	1
	Non location-specific - construction impacts	1
	Non location-specific - cultural heritage	2
	Non location-specific - designated area	1
	Non location-specific - sealing end compound	7
	Non location-specific - substation is a concern	1
	Non location-specific - support undergrounding	10
	Non location-specific - visual/landscape impact	5
	Other specific location - biodiversity and wildlife	2
	Other specific location - designated area	2
	Other specific location - listed building	2
	Other specific location - sealing end compound	3

Theme	Sub-theme	Count
	Stour Valley - access/maintenance	1
	Stour Valley - archaeological sites	2
	Stour Valley - biodiversity and wildlife	2
	Stour Valley - business/tourism/local economy	1
	Stour Valley - construction impacts	1
	Stour Valley - cultural heritage	4
	Stour Valley - designated area	8
	Stour Valley - environment	1
	Stour Valley - recreation use/opportunities	1
	Stour Valley - sealing end compound	13
	Stour Valley - support southern route	3
	Stour Valley - support undergrounding	27
	Stour Valley - underground existing lines	6
	Stour Valley - undergrounding not sufficient	7
	Stour Valley - visual/landscape impact	16
	Twinstead - construction impacts	1
	Twinstead - cultural heritage	1
	Twinstead - request undergrounding	1
	Twinstead - sealing end compound	5
	Twinstead - substation	2
	Twinstead - visual/landscape impact	3
Socio-economic impacts	Community - cumulative impacts	6
	Community - equality/equity issues	2
	Community - will not benefit directly	5
	Community benefits/social investment	1
	Community proximity/impact - general concern	35
	Community proximity/impact - less with 2A	2

Theme	Sub-theme	Count
	Community proximity/impact - less with corridor 2B	5
	Community proximity/impact - worse with corridor 2B	1
	Compensation - process	11
	Compensation - specifics	10
	Compulsory purchase	1
	Future generations/future impact - general concern	20
	Impact on business/tourism/local economy	63
	Impact on landowners/farmers	13
	Impact on local schools	3
	Impact on property value/saleability - general concern	50
	Impact on quality of life	3
	Impact on recreation use/opportunities	7
	Landowner rights - comment	1
	Proximity to multiple lines	1
	Question socio-economic assessment	15
	Respondent's proximity - general concern	32

Appendix H

Landscape and visual assessment of interim SEC Locations 2, 3 and 4

1. This Appendix addresses issues raised in representations regarding the landscape and visual effects of Sealing End Compound Locations 2,3 and 4 on the eastern edge of the Stour Valley and either side of the Dedham Vale AONB. The siting of a Sealing End Compound at Location 1 on the western edge of the Stour Valley is dealt with in the body of the report.

Interim Sealing End Compound Location 2 (eastern edge of Stour Valley).

2. In arriving at the interim sealing end compound (SEC) Location 2 on the eastern edge of the Stour Valley, the land between this point and the tree belt known as 'Ash Ground', to the southeast of Assington Thicks, was surveyed to identify an appropriate location.

3. SEC Location 2 is set on higher ground (approximately 70m AOD) to the eastern edge of the Stour Valley within fields surrounded by hedgerows. To the west of Location 2, the topography drops down towards the River Stour, while to the east the land is relatively flat and open.

4. There is an area of deciduous woodland immediately to the south of SEC Location 2. The only other woodland in this area, which coincides with a southern overhead alignment in Study Area F, is the woodland belt at Ash Ground which is set in a tributary valley with higher ground to either side. This higher ground on each side means that the screening benefits of locating a SEC close to Ash Ground would be limited. A SEC location elsewhere in the vicinity would be in open arable land.

5. SEC Location 2 takes advantage of a natural depression on the edge of the Stour valley side and existing tall hedgerows, hedgerow trees and the parcel of mature woodland to the immediate south would assist in accommodating the SEC and minimising negative effects.

6. Appletree Wood is to the north east of SEC Location 2 and other woodland blocks and belts in the area combine to form a relatively well wooded landscape, which would help to limit views of a SEC, particularly from the north and south. Viewpoints close to the existing 400kV and 132kV overhead lines have open views west and east, across large fields. Views of land to the immediate west are lost as land falls away into the Stour Valley. This valley edge location would allow views toward the SEC at Location 2 from the western side of the valley, particularly from higher ground on the valley slopes, although these views would be more distant (approximately 2 to 3km).

7. A SEC and termination pylon at Location 2 would have a negative effect on the Stour Valley Special Landscape Area, as well as the Rolling Valley Farmlands and Ancient Rolling Farmlands landscape character areas. As part of the construction of the new connection, the existing 132kV overhead line would be removed. This would be replaced by a new 400kV overhead line to the east of the SEC (which would run broadly parallel to and to the south of the existing 400kV line) and there would be an underground cable connection to the west. The presence of the existing 400kV and 132kV overhead lines and the nearby Assington Masts lessens the scale of negative effects resulting from the introduction of a SEC and termination pylon.

8. A SEC at Location 2 would be approximately 1km in any direction from the existing road network. The construction of a 3m wide permanent access road to the SEC would have a negative effect on landscape character and hedgerows, although mitigation would lessen these effects in the long-term. SEC locations between Location 2 and Ash Ground which are closer to the existing road network are also on open arable land and closer to residential properties.

Visual Assessment (prior to mitigation)

9. In terms of views from the public rights of way, there are likely to filtered views of the SEC and open views of the termination pylon from the path that rises up from the B1508 towards Workhouse Green, once part way up the valley slope (0.5km to the northwest is the nearest viewpoint along the route). Where the footpath from Abbots Meadow (near Dorking Tye House) passes through the field adjacent to the SEC (less than 0.5km to the south), there would be filtered views of the proposed SEC infrastructure and open views of the terminal pylon.

10. There are potential views from Upper Road at the eastern end of Workhouse Green and also from the same road north of Dorking Tye House, although due to intervening hedgerows, woodland and distance (approximately 1km), views of the SEC are likely to be heavily filtered and obscured from many parts. Open views of the termination pylon would be possible.

11. The private visual receptors that would experience the greatest visual effect as a result of a SEC at Location 2 include Sawyers Farm (less than 0.5km to the north) which would be likely to have filtered views of a SEC and open views of a termination pylon. From Workhouse Green there are potential views of the SEC from residential properties to the south and east of the settlement, although many of these are likely to be filtered by garden boundary vegetation. There are a few south facing properties on Upper Road (at a distance of approximately 0.75km) that are likely to have views of the SEC but filtered by intervening hedgerows. All these properties are likely to have open views of part of the termination pylon. Existing views are of 400kV and 132kV pylons crossing fields.

12. Other potential receptors are Yorley Farm and Stanton Farm (both approximately 0.75km distant) and properties associated with Dorking Tye House to the east (approximately 1km distant). There would be filtered and oblique views of the top of the SEC from these locations and open views of the termination pylon are likely. There are four residential properties in the vicinity of Roper's Hall to the southeast of SEC Location 2, although due to garden vegetation and intervening hedgerows and distance from the SEC (1km), views are unlikely.

13. Residential properties to the west and south are either distant or separated from the SEC by intervening topography and vegetation.

14. The effect on views beyond the locality would be limited by topography and vegetation, although there would be views of the SEC and termination pylon from the western side of the Stour Valley. These would be viewed at a distance of approximately 2 to 3km and would be seen in the context of the existing 400kV overhead line. In the long-term, views of the SEC would be obscured by woodland planting.

15. The construction of a SEC at Location 2 would have a negative effect on views from the visual receptors described above. Existing mature vegetation does much to assist in filtering views toward SEC Location 2 from the majority of these receptors, although intervening vegetation would not assist in filtering views of the termination pylon. However the scale of change or degree of effect on visual amenity is lower due to the presence of existing pylons in the vicinity.

16. As part of the construction of the new connection, the existing 132kV overhead line would be removed. This would be replaced by a new 400kV overhead line to the east of the SEC (which would run broadly parallel to and to the south of the existing 400kV line) and there would be an underground cable connection to the west. The presence of the existing 400kV and 132kV overhead lines lessens the scale of negative effects resulting from the introduction of a SEC and termination pylon.

    Residual Effects (with mitigation) and Conclusions

17. Given the presence of existing overhead lines in the landscape and following 15 years establishment of mitigation measures, a SEC at Location 2 would lead to minor negative long-term effects on the local landscape character and views, as the SEC and permanent access would be largely screened by tree and hedgerow planting.

18. There would be long-term cumulative effects from the SEC, termination pylon and new 400kV overhead line. The new 400kV overhead line on a southern alignment would for a short distance cross Study Area G, which has been assessed as having a moderate negative effect on landscape character and views in the long-term (in the options appraisal of Study Area G in Chapter 11). Existing landscape features would assist in accommodating a SEC at this location, however the pylons (including the termination pylon) at this point on high ground above the valley would have an effect on the landscape and views of the Stour Valley. It is recognised that this part of the overhead line would be crossing an area of landscape which is managed by The Dedham Vale AONB and Stour Valley Partnership and is of greater than local importance.

19. Given the presence of existing overhead lines in the landscape, the termination pylon associated with the SEC at Location 2 would lead to a no greater than moderate negative long-term effect on the local landscape character and views and a minor negative indirect effect on the landscape and views within the valley to the west.

20. The negative effects described above would occur alongside the wider long-term benefits that the removal of the existing 132kV overhead line would bring. Overall a SEC at Location 2 would have minor negative effects on landscape character and visual amenity in the long-term.

Interim Sealing End Compound Location 3 (west of Dedham Vale AONB).

21. In arriving at the interim sealing end compound (SEC) Location 3 on the western edge of the Dedham Vale AONB, the land between this point and in the vicinity of the A134 was surveyed to identify an appropriate location.

22. SEC Location 3 does not fall within one of the Special Landscape Areas designated by Babergh District Council. The Dedham Vale AONB boundary lies less than 0.5km to the east and approximately 1.5km to the south. Although close to the AONB to the east, infrastructure at Boxford Fruit Farm creates separation between the SEC location and Box Valley.

23. SEC Location 3 is on a plateau landscape (interfluve) between the Box and Stour valleys, with nearby shallow tributary valleys forming gentle undulations. The local landscape consists of large open arable fields with a mixture of intact and gappy hedgerows, with hedgerow trees and also some open field boundaries. Woodland cover is limited to small pockets of woodland and linear woodland, however these together with tall hedgerows and hedgerow trees combine to form wooded horizons which limit views. The nearby presence of the busy A134/ B1068 is an urban influence on this landscape. The existing 400kV and 132kV overhead lines are characteristics of the landscape. SEC Location 3 is located adjacent to a line of young shelter belt trees which define the western edge of Boxford Fruit Farm's orchards and the orchard to the east contains support structures.

24. Arable land to the east and west of the A134 is relatively open. There are no existing woodland blocks against which to site a SEC to assist in backgrounding and screening, however mature trees to the northern edge of Leavenheath offer screening in the area between the A134 and Boxford Fruit Farm. These would assist in minimising effects on landscape and views. At this location additional woodland planting to screen the SEC in the long term will be important.

25. A SEC and termination pylon at Location 3 would have a negative effect on the Ancient Rolling Farmlands landscape character area. A SEC and termination pylon at this location would also have a negative indirect effect on the AONB to the east, however given the nature of the intervening land-use between SEC Location 3 and the AONB boundary this would be limited. As part of the construction of the new connection, the existing 132kV overhead line would be removed. To the east of the SEC this would be replaced by a 400kV underground cable route and to the west by a new 400kV overhead line (which would run approximately 85m parallel to and to the south of the existing 400kV line). The presence of the existing 400kV and 132kV overhead lines lessens the degree of negative effect resulting from the introduction of a SEC and termination pylon.

26. A SEC at Location 3 would be close to the existing B1068 and A134 which would minimise the effects of a 3m wide permanent access on landscape character.

Visual Assessment (prior to mitigation)

27. Potential public views of the SEC and termination pylon are from the B1068, Harrow Street, the A134, Assington Lane, the brow of Brick Kiln Hill (on the boundary of the Dedham Vale AONB on the west side of the Box Valley), the public rights of way between the B1068 and Harrow Street and the public right of way which runs between the A134 and Assington Lane. The B1068 is a relatively busy road. Without mitigation there would be near and open views of the permanent access road, SEC and termination pylon from the section of the road, to the south of the arable field at SEC Location 3, where there is little vegetation to the field boundary. Without mitigation, there would be open glimpses of the SEC and termination pylon from the eastern section of Harrow Street. These views

would be more distant (over 0.5km) and filtered in places by gappy mature hedgerow. The A134 is a busy road with existing tall hedgerow on its northern side. Fleeting and heavily filtered views of the termination pylon at the SEC are possible at a viewing distance of over 0.5km. Views of the SEC and termination pylon from Assington Lane and Brick Kiln Hill would be more distant (1km) and filtered by intervening vegetation.

28. Without mitigation, there would be open views of the SEC and termination pylon from the majority of the public rights of way which cross the large arable field south of the B1068 and connect with Harrow Street. There would be distant and filtered views of the SEC and distant and open views of the termination pylon from the public right of way between Assington Lane and the A134, where hedgerow (which flanks parts of the public right of way) does not obscure views entirely.

29. Stewards Barn is the nearest residential property which would experience the greatest effect on views. Upper storey windows would be likely to have to have open oblique views across the B1068 of the permanent access road, SEC and termination pylon, 0.25km to the north. Views would be more filtered from ground floor windows due to vegetation in the front curtilage and a mature hedgerow to the northern side of the B1068. Also near to this potential SEC location is Stewards Farm (0.25km), although views of the SEC and termination pylon would be filtered by a belt of mature vegetation. Views of the SEC from other residential properties on the northern edge of Leavenheath, west of Stewards Farm would probably be obscured by intervening vegetation, but it is likely that there would be a mixture of filtered and open views of the termination pylon from these properties. There would be filtered and oblique views of the SEC from Blackthorn Lodge, approximately 0.25km to the east of SEC Location 3 and open views of the termination pylon. Properties on the southern side of the B1068 would not see the SEC, but are likely to have some views of the termination pylon. Views would be obscured in places by intervening built form and vegetation. All these properties are likely to have existing views of the 400kV and 132kV pylons to the north.

30. More distant views of the SEC are possible from residential properties at Harrow Street Farm and Harrow Lodge (over 0.5km to the southeast). Without mitigation, the farmstead at Harrow Street Farm, is likely to have open views of the SEC and termination pylonfrom second storey windows and heavily filtered views from ground floor windows. There are likely to be filtered, distant and oblique views of the SEC from Harrow Lodge (adjacent to Harrow Street Farm), with open views of part of the termination pylon from second storey windows over the top of intervening tall hedgerows. Also at a distance of 0.5km to the west, Adam's Well and Bramwell House would have heavily filtered views of the SEC and potential open views of the upper part of the termination pylon above intervening vegetation. These properties have existing views of 400kV and 132kV pylons in the adjacent arable field.

31. Residential properties with more distant views at Assington House (approximately 1km distant) and Turk's Hall, Firs Farm and Glebe Cottage (all over 1km distant) are less likely to see the SEC, but are likely to have open views of the termination pylon above intervening vegetation. These properties have existing views of 400kV and 132kV pylons in the adjacent arable field.

32. The effect on views beyond the locality would be limited by topography and vegetation, although there would be distant views of the termination pylon from the Dedham Vale AONB, between 1.5 and 3km to the east. These views would be from the public right of way in the Box Valley where the termination pylon would be visible above intervening topography and from a small number of visual receptors on the eastern side of the Box Valley. There would also be distant views of a termination pylon from parts of the AONB to the south, such as the higher ground to the western edge of Stoke by Nayland

(approximately 3km distant). The termination pylon would be seen in the context of the existing 400kV overhead line.

33. The construction of a SEC at Location 3 would have a negative effect on views from the visual receptors described above. Existing vegetation does much to assist in filtering views toward SEC Location 3 from the majority of these receptors, although in the main intervening vegetation would not assist in filtering views of the termination pylon. However the scale of change or degree of effect on visual amenity is lower due to the presence of existing pylons.

34. As part of the construction of the new connection, the existing 132kV overhead line would be removed. This would be replaced by a new 400kV overhead line to the west of the SEC (which would run broadly parallel to and to the south of the existing 400kV line) and there would be an underground cable connection to the east. The presence of the existing 400kV and 132kV overhead lines lessens the scale of negative effects resulting from the introduction of a SEC and termination pylon.

Residual Effects (with mitigation) and Conclusions

35. Given the presence of existing overhead lines in the landscape and following 15 years establishment of mitigation measures, a SEC at Location 3 would lead to minor negative long-term effects on the local landscape character and views, as the SEC and permanent access would be largely screened by tree and hedgerow planting.

36. There would be long-term cumulative effects from the SEC, termination pylon and new 400kV overhead line. The new 400kV overhead line on a southern alignment in Study Area F has been assessed as having a moderate negative effect on landscape character and views in the long-term (in the options appraisal of Study Area F in Chapter 10 of the COR). It is recognised that there would be views of the termination pylon and 400kV overhead line from parts of the Dedham Vale AONB, which is of national importance.

37. Given the presence of existing overhead lines in the landscape, the termination pylon associated with the SEC at Location 3 would lead to a no greater than moderate negative long-term effect on the local landscape character and views and a minor negative indirect effect on the AONB to the south and east.

38. The negative effects described above would occur alongside the wider long-term benefits that the removal of the existing 132kV overhead line would bring. Overall, a SEC at Location 3 would have minor negative effects on landscape character and visual amenity in the long-term.

Interim Sealing End Compound Location 4 (east of Dedham Vale AONB).

39. In arriving at the interim sealing end compound (SEC) Location 4 on the eastern edge of the Dedham Vale AONB, land between Holt Road within the AONB (west of Dollops Wood) and Millfield Wood (south of Polstead Heath) was surveyed to identify an appropriate location.

40. A SEC within the AONB would have direct negative effects on landscape, which would not comply with the statutory purpose to conserve and enhance the AONB.

41. SEC Location 4 sits on the edge of a plateau landscape (interfluve) between the Brett and Box valleys. A tributary to the River Box runs southward in a small valley which lies to the immediate west of SEC Location 4. A north-south linear belt of woodland (Dollops Wood) is associated with this small valley and creates visual separation between the AONB to the west and the non-designated landscape to the east. As well as Dollops Wood, there are a number of other mature woodland blocks and belts within the local landscape, which form wooded horizons limiting views across open fields. The local landscape consists of predominantly arable fields, with some pasture and orchards. Fields range in size and are irregular in shape. A number of field boundaries are defined by lines of hedgerow trees, which together with woodland limit views. The existing 400kV and 132kV overhead lines cross through and already influence the local landscape.

42. The Dedham Vale AONB boundary lies immediately to the west and south of SEC Location 4. Although close to the AONB, intervening mature woodland at Dollops Wood limits views between the AONB and land to the east at the AONB's boundary. Intervening topography and hedgerow trees limits views from the AONB to the south. SEC Location 4 is not in one of the Special Landscape Areas designated by Babergh District Council.

43. South of Polstead Heath mature woodland at Millfield Wood, the existing overhead lines pass between two woodland blocks, known as Millfield Wood. This location offers an opportunity to accommodate a SEC adjacent to mature woodland which would offer screening. Views from Polstead Heath, to the immediate north of the northern block of woodland, are largely prevented by mature vegetation, although a SEC approximately 0.4km to the south of the village would have a negative effect on visual amenity. A SEC elsewhere in the area considered would be on open arable land with no local screening features, other than tall hedgerow.

44. The existing landscape features in the vicinity of Location 4 would assist in accommodating a SEC. There is the potential for a SEC at this location to take advantage of a natural depression on the western edge of an arable field. In addition, there is a belt of mature trees to the immediate west of SEC Location 4, with Dollops Wood offering additional screening. The open field to the east will mean that mitigation by way of additional planting to supplement tall hedgerows will be important.

45. A SEC and termination pylon at Location 4 would have a negative effect on the Ancient Rolling Farmlands landscape character area. A SEC and termination pylon at this location could also have a negative indirect effect on the AONB to the east and south, however given the separation offered by woodland and topography at the AONB boundary this would be largely limited to the effect of the termination pylon. As part of the construction of the new connection, the existing 132kV overhead line would be removed. This would be replaced by a new 400kV overhead line to the east of the SEC (which would run 85m parallel to and to the south of the existing 400kV line) and with an underground cable route to the west. The presence of the existing 400kV and 132kV overhead lines would

lessen the scale of negative effects resulting from the introduction of a SEC and termination pylon.

46. A SEC at Location 4 could have a negative effect on Heath Road and associated hedgerow and hedgerow trees as a result of the 3 metre wide permanent access road to the SEC. However, negative effects on existing hedgerow/hedgerow trees could be largely avoided by utilising an existing gap for the access to the SEC and mitigation by way of planting would minimise effects of the access road in the long term.

Visual Assessment of Location 4 (prior to mitigation)

47. Potential public views of the SEC and termination pylon are from the public right of way and minor road network in the vicinity of SEC Location 4. There would be open views of both the SEC and termination pylon from the public right of way which crosses the arable field between Sprotts Farm and Heath Road, immediately north of the proposed SEC. There would be a mixture of open and filtered views of the SEC and open views of the termination pylon from part of the public right of way which runs to the immediate south of the proposed SEC location between Sprotts Farm and Heath Road and which broadly follows the Dedham Vale AONB boundary, with tall hedgerow vegetation offering some screening. There would also be some open views from the public right of way which crosses an open arable field between Rockalls Hall and Heath Road (between 0.25 – 0.5km to the east). There would be more distant filtered views of the SEC at Location 4 from the public right of way which runs between Millfield House and Millwood Road (approximately 0.6-1.0km distant), with open views of the termination pylon above intervening vegetation. There would also be open views of the termination pylon above intervening vegetation on the public right of way between Sprotts Hall and Sprotts Farm as well as the public right of way through Sprotts Farm which are both within the AONB (at distances of approximately 0.25km).

48. Public views from the minor road network would include a mixture of open and filtered views of both the SEC and termination pylon from a 1km section of Heath Road to the south of Millfield House at a nearest distance of 0.25km. It is anticipated that there would be distant filtered views of a SEC and more open views of a termination pylon from the part of Millwood Road between the gap in Millfield Woods. There would be open views of a termination pylon above vegetation from parts of Holt Road (on the AONB boundary west of Dollops Wood).

49. Existing views from these public viewpoints include the 400kV and 132kV overhead lines.

50. The residential property that would experience the greatest effect on views would be Rockalls Hall, which prior to mitigation could have open views of a SEC and terminal pylon from third storey west facing windows at a distance of 0.5km. Views from other parts of the property would be filtered by mature vegetation to its curtilage. Other views from private residences would be limited by distance and intervening vegetation, but it is anticipated that there would be heavily filtered views of a SEC from properties at the southwestern edge of Polstead Heath (approximately 0.75km to the northeast), White Hall (0.5km to the northeast) and Millfield House (0.5km to the northeast) and open views of a termination pylon. Other residential properties would have open views of a termination pylon over intervening vegetation, but no view of a SEC. These include the holiday cottages at Sprotts Farm (0.25km to the west), Sprotts Hall (0.5km to the northwest), High Trees Farm and Orchard Bungalow (both 0.75km to the northwest) and properties at the very eastern edge of Whitestreet Green (over 1km to the west). Existing views from all these locations contain the 400kV and 132kV overhead lines.

51. The effect on views beyond the locality would be limited by topography and vegetation, although there would be distant views of the termination pylon from high ground near Stoke by Nayland (3km to the south) in the Dedham Vale AONB. The termination pylon would be seen in the context of the existing 400kV overhead line.

52. The construction of a SEC at Location 4 would have a negative effect on views from the visual receptors described above. Mature vegetation to the immediate south and west of SEC Location 4, as well as vegetation to field boundaries and property curtilages would assist in minimising effects. The scale of change on visual amenity is lessened by the presence of existing pylons.

53. As part of the construction of the new connection, the existing 132kV overhead line would be removed. This would be replaced by a new 400kV overhead line to the east of the SEC (which would run broadly parallel to and to the south of the existing 400kV line) and there would be an underground cable connection to the west. The presence of the existing 400kV and 132kV overhead lines lessens the scale of negative effects resulting from the introduction of a SEC and termination pylon.

Residual Effects (with mitigation) and Conclusions

54. Given the presence of existing overhead lines in the landscape and following 15 years establishment of mitigation measures, a SEC at Location 4 would lead to minor negative long-term effects on the local landscape character and views, as the SEC and permanent access would be largely screened by tree and hedgerow planting.

55. There would be long-term cumulative effects from the SEC, termination pylon and new 400kV overhead line. The new 400kV overhead line on a southern alignment in Study Area D would have a moderate negative effect on landscape character and views in the long-term (as described in the options appraisal of Study Area D in Chapter 8 of the COR). Given the presence of existing overhead lines in the landscape, the termination pylon associated with the SEC at Location 4 would lead to a no greater than moderate negative long-term effect on the local landscape character and views.

56. A SEC and termination pylon at this location would also have a negative effect on the setting of the AONB to the south and west. It is recognised that with mitigation and in the long term there would be filtered views of the SEC and open views of the upper part of the termination pylon from the public rights of way at the boundary of the Dedham Vale AONB (which is of national importance), approximately 0.1km to the south and to the immediate west. Given the buffering offered by woodland at the AONB, wider views from the AONB would be limited from most locations to the effect of the termination pylon. The termination pylon and SEC would be viewed in the context of the existing 400kV overhead line. This would result in a minor to moderate indirect negative effect overall on the AONB to the south and west in the long term.

57. The negative effects described above would occur alongside the wider long-term benefits that the removal of the existing 132kV overhead line would bring. Overall, a SEC at Location 4 would have minor negative effects on landscape character and visual amenity in the long-term.