Table of Contents

1.0 INTRODUCTION
2.0 SITE LOCATION AND APPRAISAL
3.0 LEGISLATION AND POLICY CONTEXT
4.0 VISION AND URBAN DESIGN PRINCIPLES
5.0 DEVELOPMENT DESIGN CONCEPT AND LAYOUT
6.0 ACCESS
7.0 SUSTAINABILITY PRINCIPLES

FIGURES
Figure 1  Site Location Plan
Figure 2  Planning Design Framework
Figure 3  Proposed Converter Station and Substation Site Layout Plan
Figure 4  Proposed Converter Station and Substation Isometric
Figure 5  Proposed Converter Station and Substation Elevations, Floor Plan and Roof Plan
Figure 6  Proposed Converter Station Elevations, Floor Plan and Roof Plan
Figure 7  Proposed Substation Elevations, Floor Plan and Roof Plan
1.0 INTRODUCTION

1.1 This Design and Access Statement has been prepared to support a hybrid planning application relating to the UK onshore elements (the Proposed Development) of the Nemo Link. The Nemo Link is a High Voltage Direct Current (HVDC) interconnector which will connect the electricity systems of the United Kingdom and Belgium. The hybrid planning application relates to the development of a converter station and substation on the former Richborough Power Station site, Richborough, Kent and the installation of underground electricity cables.

1.2 Section 62 of the Town and Country Planning Act 1990 (as amended) requires a Design and Access Statement to be submitted with most forms of planning applications. In addition to the construction of a converter station and substation on the former Richborough Power Station site, the Proposed Development includes the installation of onshore underground cables and subsea cables beneath the inter-tidal area of Pegwell Bay.

1.3 The majority of the Proposed Development falls within the administrative boundary of Thanet District Council (TDC). Approximately 720m of the onshore HVDC cable and a small area at the south east corner of the proposed converter station compound (outdoor hard landscaping and security perimeter fencing) is within the administrative boundary of Dover District Council. This Design and Access Statement accompanies a single hybrid application for planning permission (with some matters reserved) being sought under the Town and Country Planning Act 1990 as follows:

Outline Permission

- Proposed HVDC converter station and 400kV substation – matters of landscaping and access are provided. Matters of appearance, layout and scale are reserved.

Full Permission

- HVDC, HVAC and fibre optic cables - all matters are provided.

1.4 Whilst the underground cables from part of this hybrid application, these additional elements constitute an engineering operation for the purposes of the Town and Country Planning Act 1990 and are therefore not required to be covered by this Design and Access Statement.

1.5 This Statement sets out the design and access principles and concept of the proposed converter station and substation development components including an outline as to how these are reflected in the development layout, visual appearance and landscaping proposals.

1.6 The remainder of this Design and Access Statement is structured as follows:

- Site Location and Appraisal;
- Legislation and Policy Context;
- Vision and Urban Design Principles;
- Development Design Concept and Layout;
- Access; and
- Sustainability Principles.
2.0 SITE LOCATION AND APPRAISAL

Site Location

2.1 The proposed converter station and substation site is in Thanet District and Dover District (see Figure 1 – Site Location Plan) on part of the site of the former Richborough Power Station off Ramsgate Road, Sandwich (A256). The site is approximately 4 kilometres (km) to the southwest of Ramsgate, 3.5km north of Sandwich and 1.6km inland from the east Kent coastline.

2.2 The proposed converter station and substation development will comprise approximately 80,000m² (8 hectares). The overall dimensions of the converter station building are approximately 149m long, 93m wide and 30.3m high with the main substation building approximately 52.2m long, 21.5m wide and 15m high.

2.3 The main access to the former Richborough Power Station site is off Ramsgate Road (A256). Ramsgate Road is a dual carriageway at this point and connects to the East Kent Access Road. The A256 (Ramsgate Road), southeast of the power station, separates the proposed converter and substation site from the Kent coast and Pegwell Bay and Sandwich Bay. The road improvement scheme has also involved constructing a new bypass which connects to the widened A256 at a new roundabout approximately 200m northeast of the Richborough Power Station site and passes north to connect to the A299.

Site Appraisal

2.4 The site of the proposed converter station and substation is derelict and the debris from the demolition of the chimney stack and cooling towers which previously occupied part of the site has been processed for use within the site. Land uses in the vicinity are largely former industrial with Weatherlees Hill Wastewater Treatment Works to the north west of the site and existing and proposed mixed use commercial and industrial development to the south and east. Brownfield land to the west of the proposed converter station and substation, comprising a further part of the former Richborough Power Station site, is proposed to be used for Richborough Energy Park which will comprise other energy generation projects.

2.5 The northern boundary of the proposed converter station and substation site is formed by a car park and electrical equipment south of the land allocated for the Channel Tunnel Rail Link; the eastern boundary is formed by Ramsgate Road; the southern boundary is the immediate southern extent of the steel frame former power station turbine hall which will be retained to form the frame for the converter station. Thanet Offshore Wind Farm substation and the UK Power Networks operated 132kV substation at Richborough provide local electricity supplies and connect the Thanet Offshore Wind Farm to the electricity distribution system. The substations are immediately south of the proposed converter and substation site.
3.0 LEGISLATION AND POLICY CONTEXT

Introduction

3.1 Under section 62 of the Town and Country Planning Act 1990 (as amended) there is a requirement for Design and Access Statements to be submitted with most forms of planning applications. This hybrid planning application includes a converter station and substation which are types of development that require a Design and Access Statement.

3.2 The purpose of this Design and Access Statement is to provide the details and demonstrate the thinking behind the design and access elements of the planning application. This Design and Access Statement has been prepared in accordance with the CABE guidance ‘Design and Access Statements: How to write, read and use them’ (2006) and the Communities and Local Government guidance ‘Guidance on Information Requirements and Validation’ (2010).

3.3 A number of planning policies from national to local level are relevant to the Proposed Development. These are discussed in detail and assessed in the accompanying Planning Statement and Environmental Statement (ES). The ES and Planning Statement are the sources of information for the planning context related to the Proposed Development. This Design and Access Statement only summarises the policies relevant to the design and access aspects of the Proposed Development.

3.4 An assessment of the Proposed Development in relation to policy relevant to design and access is presented in Tables 3.1 and 3.2 respectively.

National Planning Policy

National Policy Statement for Energy (EN-1)

3.5 The National Policy Statements (NPS), approved by Parliament in July 2011, set out the most recent Government policy for the delivery of major energy infrastructure. These will be a material consideration in England and Wales, including those which fall under the Town and Country Planning Act 1990 (as amended).

3.6 The Overarching National Policy Statement for Energy (EN-1) notes that the visual appearance of a building is an important factor but functionality, including fitness for purpose and sustainability, is equally important. Applying good design to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetics as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.

National Planning Policy Framework

3.7 The Government published the National Planning Policy Framework (NPPF) in March 2012. The NPPF sets out the Government’s planning policies for England and replaces the majority of planning policy guidance notes including all Planning Policy Guidance (PPG) and most Planning Policy Statements (PPS). Some PPSs remain in place such as PPS10 which was recently published.

3.8 The NPPF is a material consideration in planning decisions and guides the development of Local Plans and emphasises the importance of delivering and planning for sustainable
developments. Policies from the NPPF which are relevant to the design and access aspects of the Proposed Development are outlined below.

Requiring Good Design

3.9 The NPPF establishes the importance of achieving high quality design that has a positive effect on the environment. It states that permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions. Local planning authorities should not refuse planning permission for building or infrastructure that promotes high levels of sustainability because of concerns about incompatibility with an existing townscape.

Regional Planning Policy

Localism Act 2011

3.10 The Localism Act contains provisions to alter the planning system and allow the Secretary of State to make orders revoking Regional Spatial Strategies (RSS). Orders have not yet been made for the revocation. The Government is currently carrying out sustainability appraisals for the revocation of RSSs in due course.

The South East Plan (2009)

3.11 The South East Plan (Regional Policy) was adopted in May 2009. The following policies are noted from this plan as relevant to the design and access aspects of the Proposed Development.

CC4: Sustainable Design and Construction

3.12 The design and construction of all new development, and the redevelopment and refurbishment of existing building stock will be expected to adopt and incorporate sustainable construction standards and techniques. This will include high standards of sustainable development including aspects such as energy, water efficiency, biodiversity gain and securing increased recycling of construction and demolition waste.

Local Planning Policy

3.13 The site of the proposed converter station and substation falls largely within the planning control of Thanet District Council (TDC); a small element of the proposed converter station compound (no buildings) is within the planning control of Dover District Council (DDC).

3.14 The local development plan for TDC comprises the 2006 Thanet Local Plan ‘Saved Policies’ and the emerging policies from the Core Strategy Preferred Options Consultation Document. Local Plan Policy D1 and Core Strategy Policy DCS22 relate to access and design; Local Plan policies TR4, TR12 and TR16 relate to access.

3.15 The local development plan for DDC comprises saved policies from the Dover District Local Plan 2002 and the Core Strategy (adopted 2010). Core Strategy policies DM11, DM12 and DM13 relate to access; in the absence of saved policies from the Local Plan (relevant to design and access), the Kent Design Guide Supplementary Planning Document (SPD) is a material consideration.
3.16 Local Plan Policy D1 (Design Principles) states that developments must achieve a high quality of inclusive design, sustainability, layout and materials. A new development will only be permitted if it:

- Respects or enhances the character or appearance of the surrounding area, particularly in scale, massing, rhythm and use of materials appropriate to the locality;
- Is compatible with neighbouring buildings and spaces and does not lead to unacceptable loss of amenity though overlooking noise or vibration, light pollution, overshadowing, loss of natural light, or sense of enclosure;
- Incorporates provision for disabled access;
- Incorporates new landscape as an integral part;
- Incorporates measure to prevent crime and disorder, promotes the perception of public safety and security;
- Provides safe and satisfactory means of pedestrian and, where provided, vehicle access; and
- Incorporates sustainable drainage systems.

3.17 Core Strategy Preferred Options Consultation Document Policy DCS22 states that new development will be of a high quality inclusive design and employ sustainable construction methods and layout. It should:

- Relate to the surrounding development form and layout and strengthen links to the adjacent areas;
- Be well-designed, respect and where possible enhance the character, context and identity of its location: particularly in scale, massing, rhythm, and use of materials appropriate to the locality;
- Be compatible with neighbouring buildings and spaces and not lead to unacceptable loss of amenity through overlooking, noise or vibration, light pollution, overshadowing, loss of natural light, or sense of enclosure;
- Incorporate where practical a high degree of permeability for pedestrians and cyclists and also consider access for public transport and provide safe and satisfactory means of pedestrian and vehicle access including provision for disabled access;
- Retain and enhance features that contribute to biodiversity and the quality of the local environment including open spaces, gaps in development, mature trees, and other vegetation;
- Incorporate new landscaping as an integral element, including, where appropriate, wildlife habitats, wildlife corridors and initiatives for their long term management;
- Incorporate measures to prevent crime and disorder, promote public safety and security and the perception of public safety and security;
- Incorporate, where practical and appropriate, high quality integrated public art which is relevant to the site and locality;
- Provide for discreetly located service areas for development including cycle stores, clothes drying facilities and refuse disposal/dustbin storage;
- Incorporate sustainable drainage systems; and
- Incorporate challenging sustainable design and construction standards contributing towards achieving zero carbon emissions, improving water efficiency and minimizing waste.
Dover District Council

3.18 The Kent Design Guide (also applicable for TDC) SPD states that good design means:

- Enriching existing character – reinforcing local patterns of development and landscape while not ruling out innovation;
- Diversity – making places with variety in the form of buildings, in materials and in the mixture of uses;
- Understandable places – having a clarity of form and layout which is easy to comprehend;
- Achieving a pride of place – development with attractive, lively and pleasant public places that draw people together and create a sense of place;
- Easy movement – easy to get to and move through; routes that are safe and welcoming; and
- Enduring and flexible places – built to last and energy-efficient according to the intended use but with the ability to be easily used for another purpose.

Land Use and Transport

Thanet District Council

3.19 Local Plan Saved Policy TR4 makes provision for road and highway improvements including Phase 2 of the East Kent Access which is now complete.

3.20 Local Plan Saved Policy TR12 states that the Council wishes to promote the use of cycling through implementing a network of cycle routes.

3.21 New development will be required to make satisfactory provision for the parking of vehicles (including, where appropriate, service vehicles) as set out in Local Plan Saved Policy TR16.

Dover District Council

3.22 Core Strategy Policy DM11 states that planning applications for development that would increase travel demand should be supported by a systematic assessment to quantify the amount and type of travel likely to be generated and include measures that satisfy demand to maximise walking, cycling and the use of public transport.

3.23 Core Strategy Policy DM12 states that access arrangements of development proposals will be assessed with regard to the Highway Network set out in the Local Transport Plan for Kent. Planning applications that would involve the construction of a new access or the increased use of an existing access onto a trunk or primary road will not be permitted if there would be a significant increase in the risk of crashes or traffic delays unless the proposals can incorporate measures that provide sufficient mitigation

3.24 Core Strategy Policy DM13 states that provision for parking should be a design led process based upon the characteristics of the site, the locality, the nature of the proposed development and its design objectives. Provision for non-residential development, and for residential cycle provision, should be informed by Kent County Council Guidance SPG 4, or any successor.

3.25 Tables 3.1 and 3.2 below set out the extent to which the Proposed Development is in accordance with relevant policies relating to design and access.
Table 3.1: Assessment of Policy in Relation to Design

<table>
<thead>
<tr>
<th>Policy Summary</th>
<th>Assessment of Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPPF 7. Requiring Good Design</td>
<td>The Proposed Development demonstrates good design through the location of the converter station and substation on derelict brownfield land. As part of the design process, assessments of the impact of the Proposed Development on landscape and views and on archaeology and cultural heritage have been undertaken to ensure the effects of the Proposed Development are as low as possible and avoid severe adverse effects. The siting of the substation is in accordance with National Grid’s guidelines for substation location, the Horlock Rules which is presented in in Appendix 4.1.</td>
</tr>
<tr>
<td>EN-1 The visual appearance of a building is an important factor but functionality, including fitness for purpose and sustainability, is equally important. Applying good design to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area.</td>
<td>Part of the proposed converter station will re-use the existing frame of the old turbine hall. The scale of the converter station buildings will be broken up by treatment to the cladding so that there is a gradual fading of colour from the bottom to the top. A recessive green colour is proposed, lightening gradually to off-white on the upper elevations which will be seen against the sky. This will reduce the apparent bulk of each converter station building in general views. The substation, lower in height than the converter station will be finished in a recessive green cladding to match the lower sections of the converter station.</td>
</tr>
<tr>
<td>Kent Design Guide SPD Good design means:</td>
<td>The converter station and substation buildings will be similar to those already in the local area and those of the proposed Energy Park. The site will be subject to a landscaping scheme proposed for the Richborough Energy Park with provision for its implementation separate from the proposed Energy Park if necessary. Additional native</td>
</tr>
<tr>
<td>Enriching existing character – reinforcing local patterns of development and landscape while not ruling out innovation;</td>
<td></td>
</tr>
<tr>
<td>Diversity – making places with variety in the form of buildings, in materials and in the mixture of uses;</td>
<td></td>
</tr>
<tr>
<td>Understandable places – having a clarity of form and layout which is easy to comprehend;</td>
<td></td>
</tr>
<tr>
<td>Achieving a pride of place – development with attractive, lively and pleasant public places that draw people together and create a sense of place;</td>
<td></td>
</tr>
<tr>
<td>Easy movement – easy to get to and move through; routes that are safe and welcoming;</td>
<td></td>
</tr>
<tr>
<td>Enduring and flexible places – built to last and energy-efficient according to the intended use but with the ability to be easily used for another purpose.</td>
<td></td>
</tr>
<tr>
<td>Thanet Local Plan 2006 Saved Policies Policy D1: New development will only be permitted if it:</td>
<td></td>
</tr>
<tr>
<td>Respects or enhances the character or appearance of the surrounding area, is compatible with neighbouring buildings and spaces;</td>
<td></td>
</tr>
<tr>
<td>Incorporates provision for disabled access; and</td>
<td></td>
</tr>
<tr>
<td>Incorporates sustainable drainage systems.</td>
<td></td>
</tr>
</tbody>
</table>
Core Strategy Preferred Options Document, Thanet District Council

DCS22: New development should:
- Relate to the surrounding development form and lay-out.
- Be compatible with neighbouring buildings and spaces.
- Be well designed, respect and where possible enhance the character, context and identity of its location.
- Retain and enhance features that contribute to biodiversity and the quality of the local environment.

Additional native landscaping is proposed at the south western elevation as part of this planning application.

Table 3.2: Assessment of Policy in Relation to Access

<table>
<thead>
<tr>
<th>Policy</th>
<th>Assessment of Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thanet Local Plan 2006 Saved Policies</td>
<td></td>
</tr>
<tr>
<td>Policy D1: A new development will only be permitted if it provides safe and satisfactory means of pedestrian and, where provided vehicle access.</td>
<td>The site has been designed to include disabled parking spaces and access into the converter station and substation buildings. The total number of parking spaces is in accordance with the standards set out in the Thanet District Local Plan 2006 – Saved Policies.</td>
</tr>
<tr>
<td>Policy TR12: The Council wishes to promote the use of cycling though implementing a network of cycle routes.</td>
<td>The converter station and substation will require a maximum of 6 personnel on site per day. The site is adjacent to the Viking Coastal Trail (Sustrans Route 15) suitable for access on foot or by bicycle. Cycle parking is proposed on site. There will be 6 spaces for bicycles included within the converter station and substation site.</td>
</tr>
<tr>
<td>Core Strategy Preferred Options Document, Thanet District Council</td>
<td></td>
</tr>
<tr>
<td>Policy DCS22: Incorporate where practical a high degree of permeability for pedestrians and cyclists and also consider access for public transport and provide safe and satisfactory means of pedestrian and vehicle access including provision for disables access.</td>
<td>A transport assessment has been undertaken to determine the effects of construction traffic on the local highway network during construction and operation. No significant transport effects will arise (see Chapter 11 of the ES).</td>
</tr>
<tr>
<td>Provide for discreetly located service areas for development including cycle stores, clothes drying facilities and refuse/disposal/dustbin storage.</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.2: Assessment of Policy in Relation to Access
<table>
<thead>
<tr>
<th>Policy</th>
<th>Assessment of Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dover District Council Adopted Core Strategy 2010</strong></td>
<td></td>
</tr>
<tr>
<td>Policy DM11: Planning applications for development that would increase travel demand should be supported by a systematic assessment to quantify the amount and type of travel likely to be generated and include measures that satisfy demand to maximise walking, cycling and the use of public transport.</td>
<td></td>
</tr>
<tr>
<td>Policy DM12: Planning applications that would involve the construction of a new access or the increased use of an existing access onto a trunk or primary road will not be permitted if there would be a significant increase in the risk of crashes or traffic delays unless the proposals can incorporate measures that provide sufficient mitigation.</td>
<td></td>
</tr>
<tr>
<td><strong>Thanet Local Plan 2006 Saved Policies</strong></td>
<td></td>
</tr>
<tr>
<td>Policy TR4 makes provision for road and highway improvements including Phase 2 of the East Kent Access which is almost completed.</td>
<td>This route will be included in the Transport Management Plan for construction traffic. The use of a major road network will ensure that construction traffic avoids the local road network as far as possible. Access to the construction of the converter station and substation site will be from the access on the A256 which will avoid use of minor roads by construction traffic.</td>
</tr>
<tr>
<td><strong>Thanet Local Plan 2006 Saved Policies</strong></td>
<td></td>
</tr>
<tr>
<td>Policy TR16: New development will be required to make satisfactory provision for the parking of vehicles (including, where appropriate, service vehicles).</td>
<td>The site has been designed to include disabled parking spaces and access into the converter station and substation buildings. The total number of parking spaces is in accordance with the standards set out in the Thanet District Local Plan 2006 – Saved Policies.</td>
</tr>
<tr>
<td><strong>Dover District Council Adopted Core Strategy 2010</strong></td>
<td></td>
</tr>
<tr>
<td>Policy DM13: provision for parking should be a design led process based upon the characteristics of the site, the locality, the nature of the proposed development and its design objectives. Provision for non-residential development, and for residential cycle provision, should be informed by Kent County Council Guidance SPG 4, or any successor.</td>
<td>Car parking on site is influenced by the operational requirements which mean that there needs to be sufficient space for workers attending for refurbishment or emergency works to equipment. There will be 31 parking spaces for the converter station and substation which will include 3 disabled spaces.</td>
</tr>
</tbody>
</table>
4.0 VISION AND URBAN DESIGN PRINCIPLES

4.1 The Nemo interconnector will allow the exchange of electricity between Belgium and the UK which will support energy efficiency and low carbon generation from renewable sources by helping to manage fluctuations in generation and demand.

4.2 The overriding principles behind the development of the converter station and substation are to ensure appropriate efficiency and safety of operation, safety of authorised workers and visitors, and the safety of others.

4.3 These principles translate into a concept that seeks to provide appropriate operational space, including electrical clearances, and space for maintenance and anticipated repair operations within the substation and converter station. The concept also envisages the ability to provide replacement equipment in a timely manner to ensure minimal disruption or interruption to operation; appropriate entry and exit provisions for workers; and security fencing to actively deter access to others to ensure their safety.

4.4 The proposed converter station and substation layouts have been designed to ensure safe and efficient operation but have also been designed to minimise the impact of the development on the surrounding landscape and townscape comprised of existing built form. This is achieved through their proposed location on the former Richborough Power Station site where there are the existing 132kV United Kingdom Power Networks (UKPN) and Thanet Offshore Wind Farm substation and other industrial buildings nearby.

4.5 The main converter station building will be constructed in part around the steel frame of the former Richborough Power Station’s turbine hall which was left in situ following demolition works. The functional relationship between the converter station and the substation i.e. the conversion of electricity from HVDC (from the converter station) to high voltage alternating current (HVAC) (substation) and the limited space available on the proposed site contribute significantly to the design and orientation of building and equipment. The layout also allows sufficient space for large and heavy equipment to access the converter station and substation compounds and be transported safely within them.

4.6 The design of outdoor equipment is typically fixed by its function and there is little that can be done to alter its appearance. It is proposed that the scale of the converter station buildings will be broken up by treatment to the cladding so that there is a gradual fading of colour from the bottom to the top. A recessive green colour is proposed, lightening gradually to off-white on the upper elevations which will be seen against the sky. This will reduce the apparent bulk of each converter station building in general views. The substation, lower in height than the converter station, will be finished in a recessive green cladding to match the lower sections of the converter station.

4.7 A security fence is required to be installed surrounding the converter station and substation site to prevent unauthorised access.
4.8 The Proposed Development has been designed through the implementation of the following design principles:

- To integrate the development sensitively with the established surrounding landscape and land use context;
- To ensure a safe and secure environment for both people and wildlife; and
- To maintain and respect the historical features of the site and surrounding area.

4.9 The Proposed Development incorporates high quality design in the location of the converter station and substation site on brownfield land adjacent to the proposed Richborough Energy Park which will have a similar industrial nature. There is parking provision and access to the converter station and substation buildings for people with impaired mobility.

4.10 Sustainable Drainage System (SUDS) has been designed for the converter station and substation; surface water run-off will be appropriately managed to ensure discharge levels are no greater than existing and will not result in flood risk.
5.0 DEVELOPMENT DESIGN CONCEPT AND LAYOUT

Introduction

5.1 This Design and Access Statement accompanies a hybrid planning application, of which the proposed converter station and substation is subject to an outline planning application with matters of landscaping and access provided, and matters of appearance, layout and scale reserved (see Chapter 1 for further details).

5.2 A Planning Design Framework (see Figure 2 of this document and Planning Drawing 20) has been developed setting out the consent components of the hybrid application. Figure 3 (see also Planning Drawing 21) sets out a worst case scenario for the proposed site layout of both the converter station and substation; this includes maximum height and floor space parameters for the converter station and substation main buildings and maximum height parameters for all other electrical equipment. The layout and position of the converter station and substation buildings and equipment will be confirmed at the reserved matters stage (should the hybrid planning application be granted) and will not exceed the parameters detailed as part of this planning application.

Layout

5.3 The layout of the proposed converter station and substation is based on the most efficient use of space which allows safe operation, maintenance and repair or replacement of the equipment during the anticipated operational life.

5.4 The specific design of the converter station and substation has been informed by the following criteria:

- The inherent requirement of the electrical infrastructure required;
- The need to maintain a secure and safe site; and
- The inaccessibility of the site to the general public.

5.5 The part of the planning application site for the converter station and substation comprises an area of approximately 80,000m² (8 hectares) which will include temporary construction laydown areas and access routes associated with the development. An additional construction laydown area is proposed on land immediately west of the proposed substation outside of the red line boundary.

5.6 The overall space required cannot be reduced beyond that which allows technical performance in addition to safe operation and maintenance.

5.7 All outdoor areas where plant is installed will be surfaced in stone chippings. The converter station and substation will be enclosed by a 2.4m high palisade fence with a 4m high electrified pulse security fence, installed on the internal side of the palisade fence. Internal surfaced roads will be required to access the buildings, for maintenance and car parking.

5.8 A 3D isometric representation of the proposed converter station and substation is shown at Figure 4. The elevations of the proposed converter station and substation are shown at Figures 5, 6 and 7.
The converter station will comprise the following components:

- **Main Building:** This will contain specialist HVDC electrical equipment including the power electronics equipment that converts electricity from AC to DC (and vice-versa). The main building will be constructed in part around the steel frame of the former Richborough Power Station’s turbine hall which was left in situ following demolition works. The main building will comprise three main parts. The tallest part to a maximum height of approximately 30.8m will be based around the former turbine hall frame and will be approximately 38.3m long and 93m wide. The remaining two parts will be approximately 25m high, 65.1m long and 93m wide (main extension) and 18m high, 45.7m long and 65.5m wide (transformer extension). The total length of the main building will be approximately 149m. Lightning conductors will be installed approximately 5m higher than the roof of the main building.

- **Service Building:** There will be a service building attached to the eastern extent of the northern face of the main building which will house the control room, workshop, auxiliary power supply and cooling system. This building will be approximately 27.4m long, 13.6m wide and 14.5m high.

- **Storage building:** This will be attached to the western extent of the northern face of the main building and will be used for the storage of equipment spares and tools. The dimensions are the same as the Service Building.

- **Single Phase Converter Transformers:** Each transformer is approximately 10.2m long, 8.2m wide and 9.8m high. These transform the voltage from the national transmission system voltage level to the DC converter station voltage level. The transformers will be outdoors north of the main buildings. There will be four transformers on site. Three will be in use at any one time and one will be a spare in case of a fault arising on one of the operational transformers. Each of the transformer bays will be separated from the adjoining one by concrete fire walls and acoustic enclosures. The transformer bays may have a system of rails constructed in the footings to allow quick removal and replacement of a transformer in the event of failure in service. The transformer bays will be provided with bunding, drainage and an underground oil containment system to prevent any transformer oil escaping into the environment.

- **Mechanically Switched Capacitor (MSC):** This compound will be used to regulate and stabilise transmission voltages. This will be approximately 30.2m long by 25m wide with a height of approximately 11.8m.

- **Shunt Reactor:** This has similar dimensions to a Single Phase Transformer and will also be used to regulate voltages.

- **Outdoor High Voltage Electrical Equipment:** This connects the transformers, MSC compound, shunt reactor to the electrical plant in the Main Building and also to the underground cables that connect the converter station to the substation. The equipment includes busbars, circuit breakers, switches, insulators and other connecting equipment. The tallest equipment will be overhead gantries at approximately 15m high.

- **Distribution Network Operator Substation:** This will provide low voltage (11kV) supplies to the converter station from the local electricity network.
Diesel Generator: This will be approximately 8m long, 3m wide and 3.5m high and will be used to provide back-up electricity supply in the event of a failure of the low voltage electricity supply from the Distribution Network Operator.

Substation

5.10 A new 400kV substation is required to connect the converter station to the national grid electricity transmission system. The 400kV substation forms part of this planning application, however, the connection between the substation and the national grid is still in early development and does not form part of this planning application. The connection project is being promoted separately by National Grid Electricity Transmission (NGET).

5.11 A 400kV Gas Insulated Switchgear (GIS) substation will be built in a separately fenced compound immediately west of the proposed converter station.

5.12 The proposed substation will occupy a footprint of approximately 2.65 ha, and will contain indoor and outdoor electrical equipment. It includes a GIS Hall containing the switchgear, outdoor Gas Insulated Busbars (GIB), overhead line gantries, two Supergrid Transformers (SGTs), along the southern extent of the site, a Mechanically Switched Capacitor (MSC) and a Static Var Compensator (SVC) compound in the northern part of the substation compound. The MSC and SVC are specific types of equipment used to regulate and stabilise transmission voltages and will be located on the north west corner of the substation site. The SVC compound will contain a transformer and outdoor electrical equipment with a small building for control and operation of the equipment.

5.13 The GIS Hall will be approximately 52.2m long, 21.5m wide and 15m high, central to the substation site and will take the form of a structural steelwork frame, clad with profiled metal panels, similar to the external appearance of the converter station.

5.14 The Supergrid transformers are approximately 22.5m long by 13.3m wide with a height of 10.6m. The MSC enclosure is approximately 30.2m long, 25m wide and approximately 11.8m for the tallest equipment. The SVC equipment would be approximately 52.6m long, 39m wide and 6.3m high for the tallest equipment. There are 3 buildings connected to the SVC equipment these would be approximately 12m long, 10.2m wide and 4.4m high.

5.15 The substation compound will also contain an amenity building 16m long, 12m wide and 4.2m high, a diesel generator building comprised of a single storey pre-fabricated modular unit 8m long, 3m wide and 3.5m high and a fire water tank, 6m high.

5.16 The layout of the substation includes two overhead line gantries in the south west corner of the site approximately 12.7m in height. NGET is currently assessing options for the connection between the substation and the national grid electricity transmission system. The connection would be the subject of a separate consenting process. The layout of the substation has included two overhead line gantries, on the basis that of the technology types that could be utilised for the connection, the use of overhead line gantries to provide the terminal connection to the substation, would be the tallest equipment that could be proposed within the substation to perform this function.

5.17 The maximum height of the remaining outdoor electrical equipment required to connect the above equipment together, will be approximately 8m.

5.18 All outdoor areas where plant is installed will be surfaced in stone chippings. The substation will be enclosed by a 2.4m high palisade fence with a 4m high electrified pulse security fence installed on the internal side of the palisade fence. Internal surfaced roads will be required to access the buildings, for maintenance and car parking.
5.19 External lighting will be installed within the fenced compound containing the substation. This will only operate when access to the site is required, during maintenance activities or emergencies outside daylight hours. Lighting will be controlled to avoid the unnecessary illumination of areas beyond the development.

5.20 Permanent access to the substation will be a continuation of the permanent access developed to the converter station. Direct access into the substation compound is to the north of the converter station site. Thirteen car parking spaces will be provided.

5.21 The substation would be an unmanned site subject to inspections and maintenance visits whilst in operation. The frequency and duration of maintenance visits will be dependent on the manufacturer’s recommendations related to the equipment installed on-site.

General

5.22 The converter station and substation buildings will be clad in galvanised steel around steel frames. A recessive green colour lighten gradually to a green-white finish will be used on the converter station building which will enable it to appear recessive in the surrounding landscape. The substation will be finished in a recessive green cladding to match the lower sections of the converter station.

5.23 The converter station and substation have been carefully designed to consider the existing and proposed surroundings, including the Thanet Offshore Wind Farm substation and the United Kingdom Power Networks (UKPN) substation immediately south of the proposed site and the proposed Richborough Energy Park.

5.24 An assessment of the effect of the proposed converter station and substation on views including consideration of existing built form is included in the ES. The assessment concludes that the proposal will have no greater effect than minor-moderate adverse on some views and a lower effect on all other views (see ES Chapter 10 for further details).

5.25 The proposed converter station and substation will be immediately north of the existing Thanet Offshore Wind Farm substation. The former Richborough Power Station is a derelict brownfield site; however, there is a proposal for the creation of an Energy Park adjacent to the proposed converter station and substation. The converter station and substation have similar design characteristics to other forms of energy development such as those that would be in the Richborough Energy Park.

5.26 The tallest part of the proposed converter station and substation will be the valve halls of the converter station which is proposed to be based on the frame of the former turbine hall retained at the site of the former Richborough Power Station. An assessment of the effect on landscape character including consideration of existing built form is included in the ES. The assessment concludes that after 15 years following establishment of the structure planting proposals, surrounding the converter station and substation, the residual effects on landscape character would be minor adverse.

5.27 Landscaping will be implemented around the perimeter of the converter station and substation to help integrate the proposed development site into the landscape setting. Landscaping will largely consist of tree planting at the eastern boundary with existing shrub and poplar trees at the northern boundary being retained and enhanced. Species rich grassland, areas for a mixture of native and fruit tree planting and ecological corridors are also proposed as part of the wider landscaping works for the estate road which is currently being developed under a separate planning application by Richborough A Limited.
6.0 ACCESS

6.1 Access to the site will be provided by a new estate road network (subject to a separate planning application submitted by Richborough A Limited) from the existing A256 roundabout with Ramsgate Road and Sandwich Road. The main access point (approximately 5m wide) would be at the eastern side of the site from the existing primary access road from the A256 roundabout. A separate access (also from the A256 roundabout and approximately 5m wide) will be used to deliver the transformers.

6.2 Access to the converter station compound will be at the eastern extent of the site off the proposed RAL estate road; access to the substation compound will be at the northern extent of the site, also off the proposed estate road.

6.3 A temporary construction laydown area will be established to accommodate construction personnel, offices, toilets, mess facilities, car parking facilities and construction plant and machinery. These laydown areas will be in place for the duration of the construction period. Upon completion of construction activities, the laydown facilities will be removed and the ground restored to a cleared site available for future use as part of the proposed Energy Park.

6.4 Equipment will be delivered directly to the construction laydown area where it will be held before being taken to its intended installation location. Any fabrication work will take place off-site or within the converter station and substation compound areas. A security fence will be erected around the substation site and the compound areas.

6.5 The converter station is likely to operate with approximately 6 personnel per day divided between 3 shifts over a 24 hour period. The substation will operate unmanned with only occasional inspection and maintenance required. The frequency and duration of maintenance visits will be dependent on the manufacturer’s recommendations related to the equipment installed on-site. Maintenance is likely to include switchgear checks and relay testing. An area of vehicular parking, comprising 31 parking spaces including disabled parking will also be created within the substation and converter station compound to allow for routine maintenance works. Sixteen car parking spaces plus two disabled spaces will be provided in the converter station compound. These are divided into two areas of parking to the east and west of the converter station building. Twelve car parking spaces plus one disabled space will be provided in the substation compound.

6.6 Exceptional maintenance may be required at some point in the equipment lifecycle. For example, this could be repair, maintenance or replacement of switchgear or a transformer. Such maintenance will be highly infrequent; any replacement plant required to be brought to site will be appropriately planned to ensure disturbance effects can be minimised as far as possible. It is likely that the delivery of any large plant (such as transformers) will use access routes proposed as part of this planning application.

6.7 Access to the substation and converter station will be restricted and strictly controlled via secure metal electronic gates. Only construction personnel, maintenance staff and visitors will be able to access the site. No public access to the site will be permitted and there are appropriate measures in place to ensure public safety is not compromised. Physical prevention and surveillance measures such as the erection of a 2.4m high palisade fence with a 4m high electrified pulse security fence installed inside it will prevent unlawful access.

6.8 Access provisions are of sufficient width to enable emergency vehicles to access the site in the event of an emergency. Access and egress routes for emergency vehicles and staff (pedestrians and vehicles) will be via the separate access points.
7.0 SUSTAINABILITY PRINCIPLES

7.1 The design of the proposed converter station and substation development is influenced by the principles and objectives of sustainable development, as defined in the previous Government’s Sustainable Development Strategy ‘Securing the Future’. It is further supported by the coalition Government’s ‘Mainstreaming Sustainable Development’. The guiding principles of these strategies are:

- Living within environmental limits;
- Ensuring a strong, healthy and just society;
- Achieving a sustainable economy;
- Promoting good governance; and
- Using sound science responsibly.

7.2 The NPPF is underpinned by sustainability principles on an economic, social and environmental basis. The proposed converter station and substation address the principles of sustainability primarily through the re-use of brownfield land for a development appropriate to its function and location. The NPPF supports the effective reuse of land which is not of high environmental value.

7.3 The Nemo interconnector will help to deliver wider sustainability goals related to increased efficiency of connecting demand with generation of electricity and supporting renewable and low-carbon power generation.

7.4 It will facilitate energy exchange between the UK and Belgium supporting the use of renewable energy and contributing to a low carbon future.

7.5 The Proposed Development is based on and implements aspects of planning policy and guidance on good design and inclusive access relevant to its function and purpose.
Figure 1
Site Location Plan
Richborough A Limited
Estate Road (Subject to Separate Pending Planning Application)
Converter Station and Substation - Outline Planning Application
Matters of Access and Landscape are provided, Matters of Scale, Layout and Appearance are Reserved

Note: Layout and position of converter station and substation buildings and equipment to be confirmed at Reserved Matters stage.
Converter Station and Substation Design Parameters

Layout and position of converter station and substation buildings and equipment to be confirmed at Reserved Matters stage.

Converter station main hall and main hall extensions (see items 1-3 below) shown are equal to the maximum height and floor space parameters detailed below.

Substation GIS building (see item 13 below) shown is equal to the maximum height and floor space parameters detailed below.

1. Main Hall
   - Max. height 30.8m
   - Max. floor space 2351.9m²

2. Main Hall Extension
   - Max. height 25m
   - Max. floor space 1054.3m²

3. Main Hall Transformer Extension
   - Max. height 16m
   - Max. floor space 3746.3m²

4. Transformers
   - Max. height 8.8m

5. MSC
   - Max. height 11.8m

6. Shunt Reactor
   - Max. height 10m

7. Fan Banks
   - Max. height 2m

8. Spares Building
   - Max. height 4.3m

9. Distribution Network Operator Building
   - Max. height 3m

10. Diesel Generator
     - Max. height 3.5m

11. Fire Tank
     - Max. height 6m

12. Pump House
    - Max. height 3m

13. GIS Building
    - Max. height 15m
    - Max. floor space 1123.3m²

14. SVC Buildings
    - Max. height 4.4m

15. SVC Equipment
    - Max. height 6.3m

16. Super Grid Transformers
    - Max. height 10.6m

17. MSC
    - Max. height 11.8m

18. Compensator Transformer
    - Max. height 11.0m

19. Amenity Building
    - Max. height 4.2m

20. Storage Units
    - Max. height 2.5m

21. Fire Tank
    - Max. height 6m

22. Diesel Generator
    - Max. height 3.5m

23. Distribution Network Operator Building
    - Max. height 3m

© Crown copyright, all rights reserved. 2013 Licence number 100020245
Reproduced from Ordnance Survey digital map data © Crown copyright 2013. All rights reserved. Licence number 100020245

Project
Nemo Link

Title
Figure 3
Proposed Converter Station and Substation Site Layout Plan

Sheet No
D2700.096

Scale
1:2500 @ A3

Date
15/02/13

Drawn
AJG

Checked
BC

Approved
BC
Converter Station Valve Hall
(existing building frame)

Converter Station Valve Hall
(new extension)

Gas Insulated Substation (GIS) Building

Super Grid Transformers (SGT)

Mechanically Switched Capacitor (MSC)

Gantries

Shunt Reactor

Fire Water Tank

Fire Water Pump House

Car Park

Control Room

Converter Transformers

Spares Building

Distribution Network Operator (DNO) Building

Amenity Building

Static Var Compensator (SVC)

Diesel Generator

Storage Units

Distribution Network Operator (DNO) Building

Note:
Layout and position of converter station and substation buildings and equipment to be confirmed at Reserved Matters stage
Figure 5
Proposed Converter Station and Substation Elevations

Note:
Converter station and substation scale, layout and appearance to be confirmed at Reserved Matters stage.
Figure 6
Proposed Converter Station Building Elevations, Floor Plan and Roof Plan

Converter station valve hall (existing building frame)
Converter station control room
Converter station valve hall (new extension)
5m x 5m Roller shutter doors (colour finish to be agreed with LPA)

Insulated metal roofing/cladding system (detailed finishes to be agreed with the LPA at a later date via planning condition)
RAL - 9016 Traffic White or similar
RAL - 9018 Papyrus White or similar
RAL - 6011 Pastel Green or similar
RAL - 6021 Pale Green or similar
RAL - 6011 Reseda Green or similar
RAL - 9018 Papyrus White or similar
3m Red brick base

Lightning conductor

Note:
Converter station scale, layout and appearance to be confirmed at Reserved Matters stage.
Figure 7
Proposed Substation Building
elevations, floor plans and roof plan

Note:
Substation scale, layout and appearance to be confirmed at
Reserved Matters stage

Substation Annex
Main GIS Hall

- Metal security doors
  (RAL colour to be agreed with LPA)
- Roller shutter door
  (RAL colour to be agreed with LPA)
- Insulated metal cladding system finished in
  RAL 6011 Reseda Green or similar (detailed
  finish to be agreed with the LPA at a later
date via planning condition)
- Polycarbonate translucent cladding
- Apertures to allow GIB to enter the building
- Insulated metal roofing system finished in
  RAL 6011 Reseda Green or similar (detailed
  finish to be agreed with the LPA at a later
date via planning condition)