

**Planning, Sustainability and Economic  
Statement for UK Onshore Construction of  
the UK-Norway Electricity Interconnector  
(NSN Link)**

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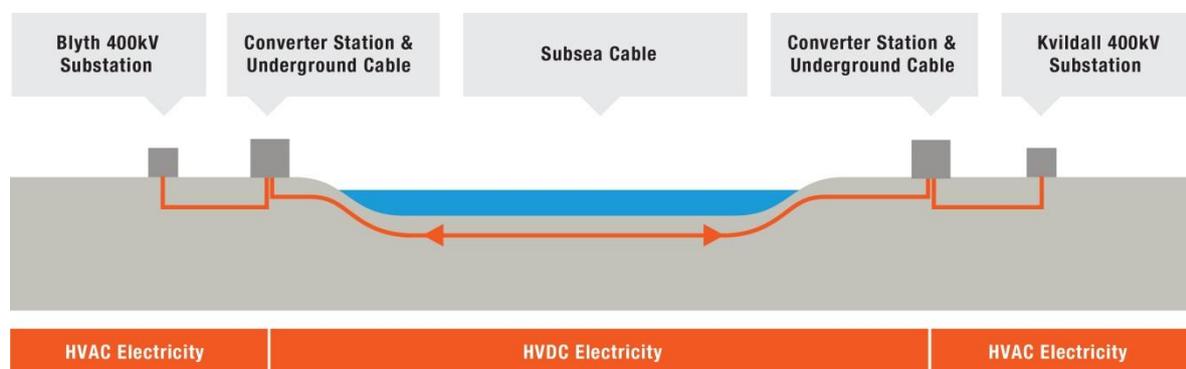
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## 1.0 INTRODUCTION

- 1.1 The UK-Norway Electricity Interconnector (referred to as NSN Link from henceforth) is a proposed high voltage direct current (HVDC) electrical interconnector with an approximate capacity of 1400 megawatts (MW) which will allow the transfer of electrical power via subsea cables between the UK and Norway. The interconnector will be bi-directional allowing the import and export of energy between Norway and the UK. Import and export of electricity will depend on the supply and demand conditions within the two countries' respective electricity grids. The project will bring both long and short term local economic benefit; wider benefit to electricity customers in the UK, Norway and continental Europe; and enhance opportunities for the integration of renewable energy to meet climate change targets.
- 1.2 The UK onshore elements of the project for which planning permission is being sought, and which this Planning Statement refers to as 'the Proposed Development' comprises a converter station on land adjacent to the former Blyth Power Station site, HVDC cables installed below the ground between the converter station and mean low water at Cambois Bay and a high voltage alternating current (HVAC) underground cable connection from the converter station to a new 400kV GIS substation, adjacent to the existing 275kV substation off Brock Lane (subject to a separate planning application).
- 1.3 The UK onshore elements of NSN Link will connect to the other parts of the interconnector which comprise subsea cables, onshore underground cables and a converter station in Norway, as shown in Inset 1.



**Inset 1 Schematic Illustration of NSN Link**

- 1.4 The project is a joint venture between NSN Link Ltd and Statnett. NSN Link Ltd is part of the National Grid group of companies but is separate from National Grid Electricity Transmission (NGET) which operates the high voltage transmission system in Great Britain and owns the network in England and Wales. Statnett is the Norwegian transmission system owner and is also Norway's transmission system operator.
- 1.5 This Planning Statement has been prepared by TEP to accompany an outline planning application (all matters reserved) under the Town and Country Planning Act

1990 submitted to Northumberland County Council for the onshore infrastructure required in the UK for the Interconnector link. This will comprise:

- Two high voltage direct current (HVDC) submarine cables between the mean low water mark and the transition joint pit, where the submarine and land cables will be jointed;
- Two HVDC onshore underground cables from the converter station to the landfall on the coast at Cambois Bay where they will be joined to the subsea HVDC cables;
- A converter station in East Sleekburn, on land adjacent to the former Blyth Power Station coal stocking area, which would convert the HVDC power used in the link to high voltage alternating current (HVAC) for use in the national transmission system and vice-versa;
- Six 400 kilovolts (kV) HVAC underground electricity land cables to connect to a new National Grid Electricity Transmission Plc (NGET) 400kV GIS substation.

- 1.6 A description of the project and study application area is provided in Chapter 2 of this Planning Statement followed by a full description of the Project Development Proposals in Chapter 3. This Planning Statement also provides the planning context and background and demonstrates how the Proposed Development accords with local, regional and national planning policy.

## **2.0 LOCATION AND DESCRIPTION OF THE PROPOSED DEVELOPMENT**

### **General**

- 2.1 The Proposed Development comprises a converter station on land adjacent to the former Blyth Power Station coal stocking area, approximately 2.5 kilometres (km) of underground cables between the converter station and mean low water and approximately 0.5km of underground AC cables from the converter station to a new substation adjacent to the existing Blyth substation, off Brock Lane, which will be owned and operated by NGET and does not therefore form part of this application. A full description of the project elements follows in Chapter 3, but this Chapter provides an overview of the area.
- 2.2 The area to the north of the Blyth estuary is characterised by large scale development which includes large scale industrial buildings, port related development, wind turbines, overhead electricity lines and the existing NGET 275kV substation. There are also large areas of former industrial development. Within this predominantly industrial area there are also small areas of small scale residential development including Cambois and East Sleekburn, agricultural land and recreational activity in connection with the coast.

### **Converter Station Site**

- 2.3 The converter station is proposed on land immediately to the east of the A189 spine road; to the north of East Sleekburn. The site is located approximately 1.5km north east of Blyth, on the northern side of the Blyth Estuary, 1km inland from the coast.
- 2.4 The site of the proposed converter station is greenfield land which forms part of the wider area of land allocated as the Cambois Zone of Economic Opportunity, which provides a simplified planning process in the form of a Local Development Order (LDO) for certain types of development specified in the Order.
- 2.5 The site extends northwards from Brock Lane and is presently arable land. Fergusons Industrial Estate lies to the north of the site and a housing estate lies to the east (comprising Harbour View, Wilson Avenue, Sandfield, Waterfield Road and Northfield). The site is surrounded by hedgerows and a belt of native tree and shrub planting forms screening along the southern and eastern boundaries.
- 2.6 Access to the converter station is proposed off Brock Lane, which connects the Port of Blyth with the strategic road network via the A189 spine road.

### **Underground HVDC Cable Route**

- 2.7 From the low water mark, the subsea cables will be routed below surface to a TJP at Cambois Links via the beach and the existing slipway. From the TJP the cables run along Cambois Links and head inland across agricultural land to the north of housing

along Wembley Gardens. Approximately 1km inland, close to the railway level crossing, the cables heads south through Ferguson's industrial estate towards the proposed converter station site.

2.8 Factors which have influenced the cable route corridor and will continue to define the detailed cable routeing include:

- Avoidance of ecologically sensitive areas and effects on protected species,
- Avoidance of built development
- Minimising disturbance to residential areas including the road network;
- Avoidance of known archaeology;
- Avoidance of other known planning proposals;
- Minimising effects on water courses;
- Minimising risk of encountering contamination;
- Minimising the impact on existing and future land uses; and
- Avoidance of existing utilities and services.

### **Onshore Underground AC Cable Route**

2.9 The proposed HVAC underground cable route runs south west from the converter station site beneath Brock Lane towards the a new 400kV GIS substation, to be located adjacent to the existing 400/275kV substation off Brock Lane. This area comprises arable land, hedgerows and areas of more diverse habitat. There are several overhead lines crossing this area on the approach to the existing substation, which is a large light grey metal clad indoor substation.

2.10 The area to the north of the existing substation is the former Blyth Power Station Site and comprises concrete hardstanding surrounded by security fencing.

### **Need for Development**

2.11 Since 2004 the UK has been a net importer of fuel. In 2011 net imports of coal, crude oil, electricity and gas accounted for 36.5 % of energy used in the UK. The UK remains a net importer of electricity, contributing 1.7 % of electricity supplied in 2011. This is likely to increase significantly over the next few years, with the closure of 12GW of coal-fired power stations, due to stricter European emissions requirements. At the same time, around 7.5GW of nuclear capacity will come to the end of its operating life.

2.12 This reduction in existing generating capacity will lead to a consequent reduction in plant margin (which is the excess of generating capacity during peak demand) and could result in a deficit of energy supply particularly during peak demand. A huge investment in new generating capacity is needed and will include investment in new interconnection between the UK, Europe and Scandinavia. Furthermore, the need to tackle climate change requires a major investment in generation from low-carbon sources, such as wind, nuclear and efficient gas-fired plant.

- 2.13 Electricity interconnectors can act as either a source of generation or demand for the two connected transmission systems and are vital for ensuring a competitive and well-functioning integrated market for energy. Despite the existence of common rules for the international market in electricity, the European Commission recognises that the internal market remains fragmented due to insufficient interconnectors between national energy networks.
- 2.14 NSN Link would be bi-directional allowing the import and export of energy between the UK and Norway largely determined by any price differential between the two remote systems. Power will be bought in the lower priced country and sold in the higher priced country. Norway has additional interconnections with central Europe, so a NSN Link provides further opportunities to trade power between the UK and wider Continental European power markets and further contribute to downward pressure on wholesale prices. Interconnectors such as NSN Link also tend to reduce the frequency and severity of high price spikes in both interconnected markets.
- 2.15 It is anticipated that the interconnector would bring benefits to both countries given that the electricity generation and transmission patterns are different and complementary, securing electricity supplies for the UK and Norway, increasing the potential for shared use of renewable energy from both countries, and provide additional transmission capacity for suppliers and generators of electricity to trade more efficiently.
- 2.16 The North East of England, in particular the Blyth area offers one of the shortest distances between mainland UK and Norway. This is an important aspect in terms of minimising the amount of subsea cable required which, in turn, minimises the marine environmental impact and the investment cost. In addition, Blyth has a strong connection with the renewable energy industry particularly wind energy.

## **3.0 DEVELOPMENT PROPOSALS**

### **Project Wide Development Proposals**

- 3.1 The Proposed Development for which planning permission is being sought forms part of wider development proposals to form NSN Link. The elements of the Project that fall outside the jurisdiction of the Local Planning Authority (Northumberland County Council) comprise HVDC subsea cables passing through UK and Norwegian waters and onshore infrastructure in Hylene, Norway comprising a converter station, substation and onshore cables.
- 3.2 An overview of the wider project follows below with a detailed project description of the UK elements from mean low water for which this planning application applies.

### **Subsea Cables in UK and Norwegian Waters**

- 3.3 The subsea cables are subject to a separate consenting regime under the Marine and Coastal Access Act 2009.
- 3.4 The subsea cables will be of the same type as those described for the intertidal area (i.e. Mass Impregnated (MI) cables). The cables will be installed in separate installation campaigns and will be separated by 20 to 50m depending on local conditions.
- 3.5 Prior to the installation of the cables system, it will be necessary to undertake significant preparation activities including the preparation and deposit of bridging and separation structures over any cables and pipelines that the interconnector cable route crosses. This will involve the deposit of crushed rock, in a berm, over the existing cable or pipeline to create separation between the two assets. Following the cable installation a second layer of rock will be deposited to protect NSN cable.
- 3.6 The cables will be buried into the sea bed by a trenching machine deployed by a support vessel following close behind the installed vessel. To ensure cable protection is immediate, operations will ideally be simultaneous. Alternatively, where installation and burial is not simultaneous, the cables may be buried in a 'post-lay burial' (PLB) operation, whereby a burial machine is deployed days or even weeks later by a separate vessel. There are cable protection issues with PLB as the cable will be exposed on the seabed for a period. To mitigate this, guard vessels will be stationed on the cable to warn other vessels of the position of the cable.
- 3.7 The programme for the commencement of installation has not yet been agreed but it is likely that installation of the subsea cable will begin between 2017 and 2019. In general, installations in European waters are undertaken in the summer season, broadly between April and October. This period is determined primarily by the high probability of adverse weather occurring outside of this period.

- 3.8 The schedule will also be affected by factors such as the requirement for any ecological mitigation, cable delivery and the availability of vessels.

### **Norwegian Onshore Components of NSN Link**

- 3.9 Onshore infrastructure in the UK will be mirrored in Norway. Components will include:
- Two HVDC subsea cables to make landfall at Djupevika situated at the head of the Hylsfjorden on the Suldal coast in Hylen, which is to the south west of Kvilldal, Norway;
  - From the landfall the subsea cables will be routed via a micro tunnel under a significant physical feature, to the west shore of the Suldalsvatnet Lake. The cables will then be laid on the bed of the lake to a landing at Kvilldalsvika on the eastern shore.
  - At the Kvilldalsvika landfall there will be a transition to onshore underground cables in a transition joint pit (TJP). The onshore underground cables will be routed from the TJP to the converter station.
  - A HVDC converter station with adjoining 400kV electricity substation will be built on land at Kvildal on the north side of Hylen;

### **Proposed Connection of NSN Link to the National Electricity Transmission System (NETS) in the UK**

- 3.10 The proposed converter station will connect to the National Electricity transmission System (NETS) via six 400kV high voltage alternating current (HVAC) underground electricity cables which will run from the converter station to a new 400kV GIS substation adjacent to the existing Blyth 275kV substation.
- 3.11 The new 400kV GIS substation will be owned and operated by National Grid Electricity Transmission Plc (NGET). NGET is part of the same National Grid Plc as National Grid NSN Link Ltd, but NGET and NSN Link Ltd are separate legal entities. Their statutory roles are clearly segregated under the Electricity Act 1989. The development of the grid connection is the responsibility of NGET and is part of its statutory functions as the holder of a licence to transmit electricity under Section 6(1) (b) of the Electricity Act 1989. The operation of an electricity interconnector is a separately licensable activity under Section 6(1) (e) of the Electricity Act. The Act expressly provides that the same person or company may not hold an interconnector licence and a transmission licence. Under its Licence Conditions, NGET is obliged to offer terms for connection to the NETS with National Grid NSN Link Ltd as it is for any other customers seeking a NETS connection.
- 3.12 NGET intend to design and construct a new 400kV substation to the west of the existing Blyth 400/275kV substation. The scheme is at an early stage of development with initial environmental surveys in progress. Whilst the size, location

and technology to be used is yet to be determined, it is currently expected that the substation will be situated within the area indicated in Figure 1.2 included in the ES. It is anticipated that the footprint will not exceed 20mx240m with a height of 15m. In association with the construction of the substation it is possible that there may need to be minor modifications to the location of the tower(s) of the existing 400kV overhead line. As part of the design process there will be engagement with Northumberland County Council and statutory and non-statutory consultees.

## **UK Onshore Elements of NSN Link**

### Converter Station

- 3.13 The converter station will be constructed on land immediately to the east of the A189 spine road, to the north of East Sleekburn drawing ARP-NSN-V3 (Figure 4.1 in ES). The site is located approximately 1.5km north east of Blyth, on the north side of the Blyth estuary and 1km inland from the Northumberland coastline.
- 3.14 The site is one of two sites within Cambois Zone of Economic Opportunity, which are subject to a simplified planning process through a Local Development Order (LDO), which grants planning permission for certain types of development specified in the Order.
- 3.15 Access to the converter station is proposed via a new access off Brock Lane. Permanent roads around the perimeter of the converter station and internal roads will be constructed to provide access to the different building units for regular and ad hoc maintenance activities and for the delivery of materials to site.
- 3.16 Landscaping will be implemented around the perimeter of the converter station to help integrate the proposed development site into the landscape setting. The existing native planting to the road frontage and around the site will be largely retained and supplemented with additional native planting around the converter station site.

### *Converter Station Design*

- 3.17 The converter station will be contained within a secure fence compound. The majority of electrical equipment will be indoors to prevent exposure to saline air. Salt deposition can lead to damage and the need to prematurely replace equipment.
- 3.18 The converter station will comprise a series of interconnected buildings including the following:
- *Valve Halls:* These will comprise four 'wings' each containing the high voltage power electronics which convert electricity from AC to DC and vice-versa. Each hall is nominally 45x30m in plan with a height of up to 25m.
  - *Equipment Halls:* Located between two of the valve hall wings, containing high voltage equipment for smoothing the electrical waveforms. Each hall is nominally 50x35m with a height of up to 20m.

- *Filter Halls:* Connected to the equipment Halls, containing high voltage filtering equipment and interconnections from the transformers. Each hall is nominally 60x35m with a height of up to 20m.
- *Control and Protection Equipment Annexe:* Containing the control panels and associated operator stations, offices, welfare facilities etc. Each hall is nominally 40x20m with a height of up to 15m.
- *DC Switch Hall:* An area that contains the termination of the HVDC onshore underground cables together with HVDC switchgear to connect these to the power electronics. Each hall is nominally 70x50m with a height of up to 25m.
- *Transformer Pens:* These are external to the main building and contain the single phase power transformers which are located in bunds to contain any oil leaks. The bunds will be connected to an oil containment/separation drainage system. These transformers convert the power from the Grid voltage of 400kV to the appropriate voltage to connect to the power electronic equipment. The transformers will be separated into pens by concrete fire protection walls. Noise enclosures will be fitted around the transformers if required. Each of the six pens is approximately 20x20m in size.

3.19 In addition further buildings are required as follows:

- *400kV Switchhouses:* Two buildings to contain the 400kV switchgear together with filtering equipment. These are installed indoors to prevent failures from saline pollution due to the proximity to the sea. Each switch house is approximately 30x40m with a height of up to 15m.
- *Services building:* A building to house electricity supplies to the converter site. The service building is approximately 26x20m.
- *Diesel Generator:* A housing for an emergency standby diesel generator
- *Spare Parts Building:* A building to house spare parts and components, this will be supplemented by hardstanding areas that will be provided for storage of a spare transformer and spare cable drums. The spare parts building is about 40x20m.

3.20 Drawing ARP-NSN-V5 shows the proposed layout of the component parts of the converter station. The converter station building will be constructed from a steel frame and clad with insulated metal panels. Panels will be grey in colour and graduate from dark grey to light grey to the roofline.

3.21 The converter station will be designed for a 40 year lifespan, with only control equipment expected to require replacement during that time.

3.22 Lighting (when required) will be controlled to avoid the unnecessary illumination of areas beyond the development. Glare and the spread of upward light will be kept to a minimum to reduce sky glow and minimise visual intrusion within the open landscape. It is not necessary to illuminate the whole perimeter. The entrance and walkways for access and egress and emergency exits will need illuminating for safety reasons.

- 3.23 The Aerodrome Safeguarding Map for Newcastle International Airport confirms that consultation with the aerodrome safeguarding authority is only required at the proposed location where the proposed development exceeds 90m in height.
- 3.24 The perimeter and internal roads will be used to provide access for regular and ad hoc maintenance activities and for the delivery of materials to site. The access into the converter station site off Brock Lane will be constructed so that it can accommodate the delivery of transformers by large vehicles which comprise Abnormal Indivisible Loads (AILs). The access road will feature deceleration and acceleration tapers on Brock Lane designed in accordance with the traffic regulations for the 60mph speed and classification of the road.
- 3.25 Transformers for the converter station will be delivered during construction under a Transport Order. The route to each part of the site will retain the ability to accommodate these loads. In the event of transformer failure at the converter station, a spare transformer held on site would be installed and the failed transformer removed to a 'spare' storage area. Transportation of the failed transformer to a contractor's factory for repair would then be arranged including the appropriate Transport Order from the Highways Agency for the abnormal movement. Reliability data on transformers of this nature indicates that failures would not be anticipated at intervals of less than 10 years.
- 3.26 Car parking spaces (including disabled spaces) will be provided at the converter station in accordance with Northumberland County Council Car Parking Standards. These will be to the south of the converter station building, and will be for operations staff that will monitor and maintain electrical equipment and plant at the converter station.

*Construction of the Converter Station*

- 3.27 The construction of the converter station is planned to be undertaken over a period of approximately 3-4 years. Work is expected to commence on the preparatory site works in 2016/17, followed by a converter site development, which includes the erection, installation, connection and testing of equipment between 2018 and 2020 which is when the converter station is expected to be commissioned.
- 3.28 Construction will include the activities summarised below:
- *Preliminary Works:* Further site investigation and pre-construction surveys in advance of construction;
  - *Site Preparation and Establishment:* This will include the construction of the access road to the site from Brock Lane, vegetation clearance, development of internal site access and establishment of temporary facilities including site offices, storage areas, welfare facilities, development of electricity and water supplies and the erection of security fencing or hoarding. It is proposed that a laydown area will be established adjacent to the converter station site on its western edge;
  - *Earthworks:* The current site levels fall gently from west to east and vary from 8.6m to 10.4m AOD. Cut and fill works will be required to create a level site

for the converter station. A cut and fill balance will be targeted to minimise material movement external to the site. A cut and fill volume of approximately 15,000m<sup>3</sup> is envisaged.

3.29 Construction platforms and areas of hardstanding will be founded on compacted fill over natural ground following topsoil strip. Piled foundations may be required to support major structures, very heavy equipment and equipment sensitive to settlement. Piles will be designed on the basis of the ground conditions identified by intrusive investigations. A concrete mixing plant may be installed on site to mix concrete for the foundations and footings. Final ground levels will result in a finished floor level of 9.3mAOD.

- *Civil Engineering Works:* Construction of building platforms on the piled foundations, development of the site's permanent drainage system and construction of permanent access, internal roads and car parking arrangements;
- *Buildings Construction:* Construction of all buildings including erection of steel frames and cladding;
- *Cable Installation:* Installation of underground HVDC cables from the landfall to the converter station. Installation of underground HVAC cables to connect to the new substation. Installation of underground 11kV cables within the converter station for auxiliary supplies;
- *Mechanical and Electrical Works:* Installation of high voltage AC and DC electrical equipment in the converter station and the delivery of transformers;
- *Commissioning:* Following completion of all construction works there will be a period of commissioning and testing; and
- *Site Reinstatement and Landscape Works:* Removal of the site construction offices and temporary facilities, land reinstatement and landscape works.

#### *Construction Access Arrangements*

3.30 Prior to commencement of construction, a Traffic Management Plan (TMP) will be prepared in consultation with Northumberland County Council's Highways Department. This will set out all construction access arrangements including agreed access points, delivery routes and times.

3.31 The construction access road into the converter station site will be constructed prior to the commencement of the converter station construction works to enable site access. It is likely that this will remain as a stoned surface during construction, with final surfacing following substantial completion of works on the site.

3.32 During the construction period a range of vehicles will be accessing the site including flatbed trucks delivering plant and equipment, plant including excavators, bulldozers and cranes as well as cars and vans associated with construction staff movement.

3.33 Equipment will be delivered to the site, erected and connected using mobile cranes and hydraulic access platforms. The switchgear and busbars will be delivered to site

in modules, using normal road transport. The modules would be stored on site in designated storage areas until required for erection.

- 3.34 Transformers will be delivered to site on a self-powered modular trailer (SPMT) and would be classed as abnormal indivisible loads (AIL). The transformers may be factory fitted with wheels, and lowered from the SPMT using hydraulic jacks direct onto a permanent rail system built into the transformer footings. Each transformer will then be winched into position on the rail system to allow a rapid transformer change. Alternatively the transformers will be slid into position by use of a hydraulic system.

#### *Construction Site Layout*

- 3.35 The construction site for the converter station will be securely fenced during the construction period and there will be a number of temporary facilities on site including:

- Sites offices including offices and meeting rooms;
- Staff welfare facilities including portable chemical toilets, kitchen and mess room;
- A laydown area for storage areas for construction vehicles, plant, equipment and other construction materials;
- Appropriately bunded areas to be used for the storage of oils and other fuels;
- Wheel washing facilities to be used by construction vehicles and plant;
- Segregated waste and management storage areas.

### **HVDC Underground Cables**

#### Cables in the Intertidal Area

- 3.36 NSN Link will include two subsea HVDC cables between the landfall points at Cambois Bay and Hylen, Norway. The HVDC cables proposed are mass impregnated (MI) cables. This type of cable uses multi-wrapped paper insulation impregnated with mineral oil. The oil is of high viscosity and is captured within the paper insulation and has no free oil to leak out in the event of a cable rupture.
- 3.37 The cable is made up of many layers including a copper core with a screen, the mass impregnated paper layers and an outer dielectric screen made of semi-conducting paper. These layers are then contained in a water tight sheath. The sheath for subsea cables is generally extruded seamless lead. A polyethylene sheath is extruded over the lead sheath to protect it from corrosion. Subsea cables will have an additional layer of galvanised steel wire armour to increase the cable's tensile strength to help it withstand the stresses of the subsea installation. This armour is usually a single layer of wires, helically wound around the cable and covered in a sleeve of bitumen impregnated polypropylene yarn to inhibit corrosion. Where subsea cables are to be installed in very deep waters or over rocky sea beds there may be a double layer of wires in the armour.

*Cable Installation*

- 3.38 The subsea cables will be laid in separately and joined to the HVDC onshore underground cables in the transition joint pit (TJP). The approximate distance between Low Water and the TJP will be 500m.
- 3.39 The TJP will be an excavated pit (approximately 12m long x 5m wide x 3m deep) with a reinforced concrete plinth laid in its base. The cables will be jointed on the plinth and once this is undertaken, the excavation will be backfilled to original ground levels. On completion of works, there will not be any visible sign of the TJP on the surface. The excavation and preparation of the area to construct the joint bay will take approximately 1-2 weeks.
- 3.40 From the low water mark the subsea cables will be routed below the surface to the TJP, via the beach, most likely using trenching techniques, involving a cable way constructed through the existing slipway and trenching across the Cambois Links. Alternatively; conduits may be installed beneath the car park, slipway and possibly the beach. The use of Horizontal Directional Drilling (HDD) or another boring technique has also not been ruled out.
- 3.41 For the most likely installation method – the “open cut” installation method, cables would be landed from a vessel which will approach as far inshore as is possible and involve using mechanical diggers to construct a trench across the beach from low to high water and floating the cable from the ship to the lower end of the trench.
- 3.42 The TJP will be above high water in the agricultural land west of the road known as The Bucca. Access to the site of the TJP will be required off The Bucca for a mechanical excavator and concrete deliveries during the construction work. TJP construction will be completed well in advance of cable landing operations to avoid any possibility of delay to the landing operation.
- 3.43 Access to the beach and slipway will be required from North Cambois Beach public car park for a mechanical excavator, concrete deliveries etc. during the preparation work to the slipway. The slipway will be modified to incorporate a covered trough to house the cables and a head wall to secure the end of the cable armour. These works will be completed in advance of the cable laying operations to avoid any possibility of delay to the landing operations.
- 3.44 Between the head of the slipway and the TJP the cables will be buried in one trench, this trench will be routed via the beach car park and Cambois Links, passing under the Bucca. This trench will be excavated immediately prior to cable installation to minimise disruption.
- 3.45 In preparation for the subsea cables being brought ashore, the beach works area, comprising approximately 2000sqm will be marked off with a tape or a buoy line to warn the public not to enter the works area. On rising tide a shallow water cable laying vessel will move into position as close to the top of the beach as the tidal conditions allow. A pulling device, either a winch or a tracked vehicle, and rollers and

quadrants necessary to guide the hauling rope and subsequently each cable will be put in place. The cables will be laid from the vessel to the shore individually and a hauling rope will be installed between the beach pulling device and a cable end on the vessel running through the slipway cable duct. Construction access to this works area will be via the public car park and existing slipway.

- 3.46 Depending on the tide, the intervening distance between vessel and the slipway may be entirely dry (with installation vessel resting on the seabed) or more probably a combination of dry beach and beach below water. Each cable will be supported at the sea surface by floats attached as the cables leave the vessel and supported on rollers placed on the seabed where it is above the water line.
- 3.47 Each cable will be hauled towards the slipway with floats being removed as necessary. When sufficient length of each cable has been passed to the shore to allow it to be installed in the slipway cable trench and for jointing to an onshore underground cable, it will be secured at the head of the slipway and in the TJP.
- 3.48 Once the cables have been secured at the head of the slipway and in the TJP and tested to confirm that no damage has occurred during the installation process, each cable will be manoeuvred into its correct alignment in relation to the pre-determined route between the slipway and Mean Low Water (MLW). This routes the cables from the TJP via the land trench and the existing slipway to the beach. For cable sections still afloat, the manoeuvring will be accomplished using workboats. Once in the correct position, the remaining floats will be removed and the cables allowed to sink to the seabed. Any cables on dry land leading up to the TJP will be manoeuvred using excavators or similar prior to burial.
- 3.49 In dry areas of the beach, a single trench will be excavated alongside the cables using conventional mechanical excavators adopted for working on soft soils. The excavated material will be placed to one side for back filling. Rollers will be used in the base of the trench to pull the cables along it. The cables installation trench will be approximately 1-2m wide and the cables will be buried to a target depth of circa 2-3m. The temporary works footprint will be approximately 10m. A cofferdam may be required to keep water from entering the trench during excavation.
- 3.50 The cables will be manoeuvred into the bottom of the trench by mechanical excavators and buried with the material excavated from the trench.
- 3.51 The landing operation including landfall preparation and subsea cables installation is expected to take approximately 4 weeks.

#### HVDC Onshore Underground Cables

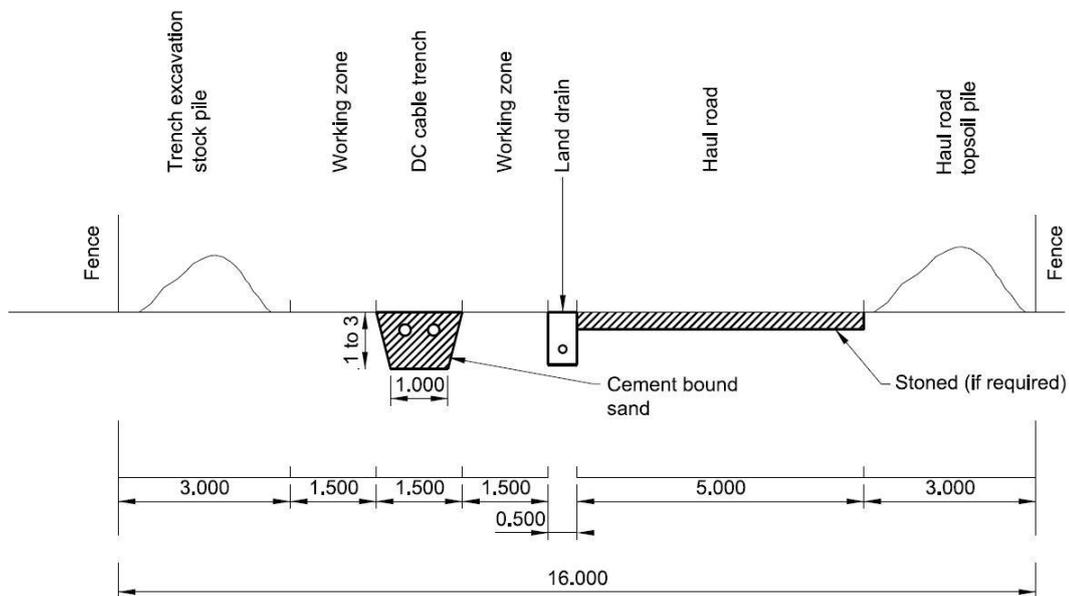
- 3.52 HVDC onshore underground cables will connect the subsea cables to the converter station (a distance of approximately 2km) and will be of mass impregnated design similar to the HVDC subsea cables. This will minimise the complexity of the joint at the TJP. The additional layer of galvanised steel wire armour required for the subsea

cables is not required for the onshore cables. The diameter of each of the onshore underground cables will be approximately 15cm.

- 3.53 The HVDC onshore underground cables will be delivered to a temporary contractor's compound. Temporary works compounds are anticipated to be established close to or on the existing car parking area at North Cambois Beach, adjacent to the waste water treatment works, and immediately south of the Fergusson Business Park. It is anticipated that each drum would hold approximately 500-1000m of onshore underground cable. The compounds will form the bases for the onshore underground cable installation works from which the main items of plant and workers will travel, minimising the need for transport.
- 3.54 Cable installation will include excavation, laying the cables, jointing and terminating and testing the cables and will be undertaken in parallel as the construction of the converter station between 2019 and 2020.
- 3.55 Prior to the commencement of works along the onshore underground cable route, a photographic inventory will be taken and in particular records of the presence and condition of items such as fences and gates will be made and, where possible, agreed with the landowner prior to commencement
- 3.56 Secure temporary fencing will be erected around the working area (which will vary as the onshore underground cables installation progresses). The fencing will define the working area, protect any sensitive areas and prevent third party access. Access gates will be installed that are suitable for both personnel and for movement of plant and equipment.
- 3.57 The onshore underground cables will be installed onshore primarily in excavated trenches; either direct placed or in pre placed ducts. Standard trenching techniques will be used for excavation. Where the onshore underground cables will cross obstructions, such as the railway a "trenchless technology", such as horizontal directional drilling (HDD), thrust boring or pipe jacking will be considered.
- 3.58 The description of installation techniques below refers to the different parts of the cable route from the TJP to the Converter Station.

*Open Trench Installation*

- 3.59 Where possible open trench installation techniques will be used. Prior to excavation, the surface will be cleared of vegetation. Trenches will be excavated by hydraulic excavators, except where any risk to existing services is identified where digging by hand will verify the position of existing services. The trench cross section will be approximately 1.5m at the surface and will taper to 1m at the bottom of the trench. Excavated topsoil and subsoil will be stored separately for reinstatement.
- 3.60 The construction area will consist of a working swathe of about 16m as shown in Inset 2 This will allow provision of a haul route along the length of the cable, sufficient operating space around the works, areas for stockpiling top soil and excavated material, and space for security fencing.



**Inset 2: Typical HVDC Onshore Underground Cables Working Swathe**

- 3.61 The trench integrity will be assessed in different soil types, and where required the sides will be battered, benched, or shuttered with timber or metal sheets secured by cross braces. This will prevent collapse and will protect personnel during the works.
- 3.62 Prior to the onshore underground cables being laid, a layer of cement bound sand (CBS) approximately 60cm deep will be placed in the bottom of the trench and surrounding the cables. The CBS will help dissipate heat generated when the cables are in operation and will ensure the onshore underground cables are installed on a surface which is smooth and consistent.
- 3.63 Concrete slabs will be installed 60cm above the top of each cable and plastic warning tape will be laid directly over the slabs. The material excavated from the trench will be used to complete backfilling of the trench. The topsoil will be used to ensure that the upper profile of the backfilled trench is restored to the previous condition. Any excess subsoil will be removed from site.
- 3.64 A permanent easement of approximately 7m will be required above the HVDC onshore underground cables.
- 3.65 Temporary measures such as damming and pumping may be required to facilitate open trench installation to cross watercourses.

*Ducted Installation*

- 3.66 Some cable route sections could be installed in ducts. Ducts increase the cables' protection and increase installation flexibility.

3.67 Ducts can be installed prior to the installation of the cables, and thereby reduce the length of time required for each sections construction. Cables are then installed later via regular jointing bays and a nose pull method.

3.68 Ducting will however increase the thermal resistivity and reduce the cables ratings, and a stabilised material may be required in the ducting to improve the heat dissipation.

*Trenchless Technology*

3.69 Sections of the onshore underground cables will need to be installed by a trenchless technique to avoid surface disturbance, for example to cross the railway line, the main roads and potentially larger watercourses.

3.70 These techniques require a 'launch pit' working area from which the main driving of the rig will be undertaken and a 'receptor pit' working area which will receive the end of the crossing.

3.71 The launch and receptor pit working areas will require some temporary roadways to be constructed to provide suitable access for drilling plant and associated equipment.

3.72 Two ducts would need to be installed at each trenchless crossing. The depth of the crossings will depend on surface features. Crossings would be completed in advance of cables delivery to avoid any possibility of delay to the installation.

3.73 The void between the cable and the duct will be filled with a bentonite material to seal the void and aid heat dissipation.

*Joint Pits*

3.74 Joint bays will be required at approximately 500m centres. This will be the point where separate cable lengths are jointed and their location is partly determined by the length of cable that can be transported on a cable drum and partly determined by identifying an appropriate with access.

3.75 The excavation, preparation and construction of a joint bay is approximately 1-2 weeks. An area of hard standing (approximately 20mx20m) is required for delivery of the cable drum with sufficient space for a crane to offload the cable drum from a low loader.

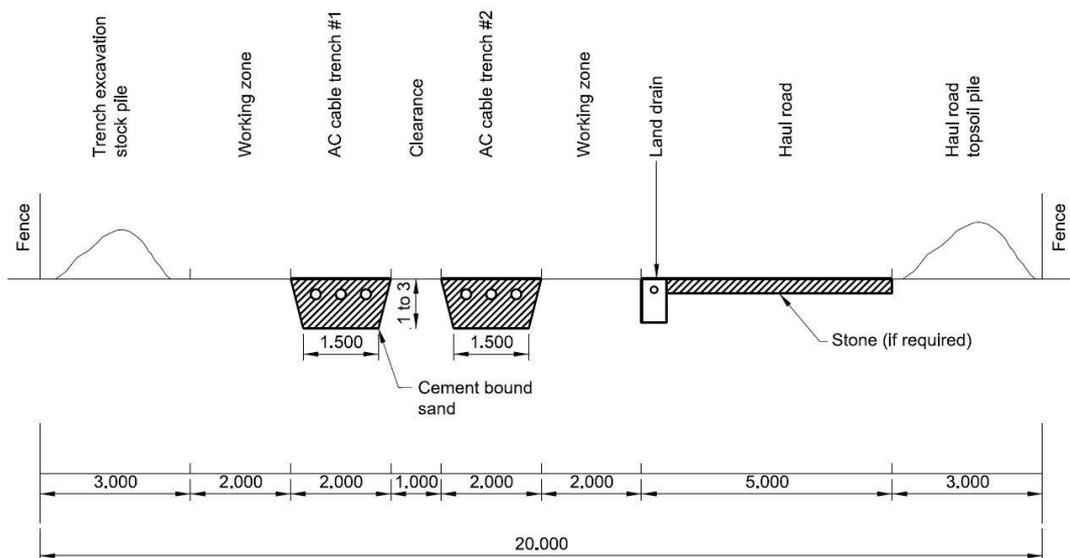
3.76 The construction of each jointing enclosure takes approximately 2-3 days and the jointing and testing will take approximately 7-10 days which will require 24 hour working. This activity will require local power supply, air-conditioning and internal lighting. On completion the removal of jointing equipment will take days 2-3 days and burial of the jointing pit and the reinstatement of the ground will take approximately 1 week.

3.77 Approximately three joint pits will be required in addition to the transition joint pit at the coast. The approximate locations are close to the railway crossing adjacent the

Northumbria Water treatment works; to the south of Ferguson’s Business Park and close to Cow Gut.

*HVAC Land Cables*

3.78 Six 400kV HVAC cables will connect the converter station to a new 400kV substation. The HVAC cables will be the same type as the HVDC cables (mass impregnated – MI) and will be approximately 150mm in diameter. The total length of the HVAC cables route is less than 1km. They will be laid in two banks of three, with a separation gap between them. A construction corridor of about 20m will be required as shown in Diagram 2. This will accommodate a haul route along the length of the cable, sufficient operating space around the works, areas for stockpiling top soil and excavated material, and space for drainage and temporary security fencing.



**Inset 3: Typical HVAC Underground Cable Working Swathe**

**Cable Route Description**

3.78 The cable routing studies sought to define an indicative cable route which avoided or minimised environmental effects and took account of existing and proposed development proposals. The following factors particularly influenced the cable routing studies:

- Designated sites of nature conservation;
- Presence of protected species;
- Proximity to residential areas;
- Archaeology;
- Highways;
- Planning proposals;
- Water courses;

- Risk of encountering contamination;
- Utilities and services; and
- Land use

3.79 Several options were considered in the identification of the indicative HVDC underground cable route and these options are outlined in Chapter 6 Alternatives. The preferred indicative cable route is described below. It has been split into sections for ease of reference across the assessment Chapters and these sections are shown on Figure 4.5 of the Environmental Statement.

#### Section 1: Landfall

3.80 From mean low water the subsea cables will be trenched in the beach with the original beach sediment used to backfill following installation. The cables would then either be trenched through the slipway or pulled through pre-installed ducts within the slipway. The slipway will be reinstated to full working condition on completion. The cables will then run north through open grassland, known locally as Cambois Links, parallel and to the east of the road known as The Bucca (or Cambois Farm Road) before heading west across The Bucca to a TJP close to the north of properties at Cambois Farm on Heightly Court.

#### Section 2: Agricultural Land to the North of Wembley Gardens

3.81 From the TJP the cables run west through agricultural land to the north of Wembley Gardens. Standard open trench installation techniques will be used to lay the cables within this section with the land reinstated to agricultural use on completion. The standard working width including access, trenching and working areas is up to 16m. Where the cable route crosses existing hedgerows a section of 10-16m of hedgerow will be removed at each crossing during cable installation. Hedgerows will be replanted on completion and existing field drainage in agricultural land will be reinstated where disturbed.

3.82 The screen planting to the north of Wembley Gardens will be retained as part of the Proposed Development. The cable route continues in a south westerly direction running parallel to Wembley Gardens towards Northumbria Water treatment works.

3.83 A Joint Pit (JP) is required in this area with the exact location to be confirmed by the cable contractor. The JP (as with the TJP) is the point at which cables are jointed and will involve working activities as outlined above. This will include appropriate provision for the delivery and offloading of the cable drum and the construction of a temporary access/laydown area.

#### Section 3: Railway Line

3.84 The cables will cross the railway line and road using a trenchless technique to enable the cables to be installed without surface disturbance. The trenchless technique will require the construction of a launch pit and receptor pit which will require temporary roadways to provide suitable access for drilling plant and associated equipment.

#### Section 4: Ferguson Business Park

- 3.85 The cables will run due south along the access track/PRoW which runs between Ferguson's Business Park (to the west) and Sleekburn Business Centre (to the east). A temporary closure of the PRoW will be required during the installation of cables and a temporary diversion route will be put in place and appropriately sign posted.
- 3.86 The cables will be installed in Section 4 using standard open trenching techniques. Existing underground services will be negotiated in the detailed cable routeing, and the realignment of existing fence lines may be required in agreement with landowners. The surface of the track will be reinstated on completion.

#### Section 5: Scramble Track/Agricultural Land

- 3.87 A JP will likely be required to the south of the industrial development. From here the cable route will run south through agricultural land or along the edge of an area of bare ground presently used for a scramble track, continuing southwards towards the water course called Cow Gut. The exact cable route will be determined by the crossing point of Cow Gut.
- 3.88 The crossing of Cow gut will be via one of the following three options:
- Using the existing culvert
  - A new open trench crossing
  - Cable bridge
- 3.89 The assessments consider each of these options. A third JP will likely be required close to the north or south of Cow Gut.

#### Section 6: Converter Station Site

- 3.90 From Cow Gut the cable route runs south through an area of plantation towards the proposed converter station site. The cables will be installed using standard open trench installation and will require the removal of a swathe of up to 16m of juvenile planting. The ground will be reinstated on completion with a grass seed mix and low growing native shrubs as tree species will affect the rating of the cables.

#### Section 7: HVAC Underground Cables from Converter Station to NGET Substation

- 3.91 From the converter station site two swathes of HVAC cables will run south across Brock lane to the proposed NGET 400kV substation. Each swathe will require the removal of approximately 15-20m of juvenile planting along the road frontage and the roadside hedgerow.
- 3.92 Open cut techniques will be used to install ducts within Brock Lane to enable the cable installation. Traffic management will be put in place to retain access during the works. The road surface will be reinstated to appropriate highway standards on completion.
- 3.93 The HVAC cables run in a south east direction through agricultural land with a connection at the proposed NGET 400kV substation (subject to a separate planning

application). Agricultural land will be reinstated on completion and hedgerows will be replanted.

### **General Construction Information**

#### *Environmental Management*

- 3.94 During construction, the appointed Contractors will be required to operate under a detailed site specific Construction Environmental Management Plan (CEMP). It will, as a minimum, set out the requirements to implement the mitigation measures identified within this ES. The CEMP will set out a variety of control measures for managing the potential environmental effects of construction works including control and management of noise, dust, surface water runoff, waste and pollution control. In addition, the site environmental management will be audited by the developer and appropriate specialist environmental consultants.

#### *Contractor Responsibilities and Communication*

- 3.95 Contractors will be required to conform to all relevant legislative and statutory requirements and to comply with British Standards and relevant codes of good practice during construction works.
- 3.96 Communication will be undertaken with local residents and communities who may be affected by or interested in the works. Typical communications include the delivery of leaflets to local properties, newspaper advertisements and the establishment of a 'freephone' telephone number for interested persons to call with questions or observations on the works.
- 3.97 The approach to communication during the works is intended to ensure that potential causes for complaints or disturbance are avoided where possible and that if any issues of concern arise, there is a means of communicating with the developer on that issue.

#### *Staffing and Employment*

- 3.98 The number of staff on site will vary according to the construction phase and activities being undertaken.
- 3.99 Staff levels will be at their highest during the converter station earthworks and civil engineering works phases. Staffing levels will generally decrease as construction is progressed through to the commissioning phase.
- 3.100 The appointed Contractors will employ a Site Environmental Manager (SEM) or Environment Clerk of Works (ECoW) who will be responsible for the preparation and implementation of the CEMP ensuring that mitigation measures identified in this ES are appropriately implemented. The SEM or ECoW will be supported by environmental specialists such as ecologists or archaeologists as required.

#### *Hours of Working*

- 3.101 The assessments in this ES have assumed that construction activities generally will take place on weekdays between 07.00 and 19.00 and at weekends between 07.00

and 14.00. There will be some periods, such as cable jointing, where 24 hours working will be required. However, exact arrangements will be agreed with Northumberland County Council.

*Construction waste and Spoil*

3.102 Subject to geotechnical testing, all excavated materials will be re-used on site wherever possible. Where waste materials are to be disposed of off-site, this will be at licensed waste disposal facilities in accordance with a Site Waste Management Plan (SWMP). The SWMP will be prepared by the Contractor in consultation with the Environment Agency (EA). A high level SWMP has been prepared as an accompanying document to this planning application.

*Construction Timescales*

3.103 Estimated timescales for the construction of the UK onshore elements of NSN Link are set out in Table 3.1 below:

**Table 3.1 Estimated Construction Timescales**

UK Onshore element of NSN Link	Timescales							
	2016/17	2017/18	2018/19	2019/20				
Converter site works								
Construct converter station and lay cables								
Converter site development (e.g. install equipment, connect, test and commission)								
Cable installation (excavate, lay joint and terminate and test)								

**General operation and Maintenance**

3.104 The converter station will have a small workforce on site (approximately 2-3 personnel) and the site will be subject to infrequent inspections and maintenance visits whilst in operation. The frequency and duration of maintenance visits will be dependent on the manufacturer’s recommendations for the equipment installed.

3.105 Inspections and safety checks of the converter station will be undertaken periodically so it is likely that a small number of staff (approximately 6 personnel per day) will be present on site on an ad hoc basis. NSN Link Ltd will be responsible for on-going maintenance and upkeep of the converter station. This will include regular inspection of the site and equipment as well as safety checks. From time to time during refurbishments, detailed inspections and replacement of some components, there may be larger numbers of personnel on site.

**Decommissioning**

3.106 The anticipated operational life of the converter station and cables is approximately 40 years. This could however be extended dependent on the operation of the component parts and will be assessed during the operation of the link.

- 3.107 The decommissioning of the converter station would involve similar activities to those described previously for construction. The main components would be dismantled and removed for recycling wherever possible or for the disposal in accordance with the relevant waste disposal regulations at the time of decommissioning.
- 3.108 The underground cables may be cut and left in the ground at the end of their operational lives or could be removed. Removal would involve similar activities to installation.

## 4.0 LEGISLATION AND POLICY CONTEXT

### Introduction

- 4.1 This section provides an assessment of the relevant national, regional and local planning policy framework in relation to the Proposed Development.

### National Planning Policy

#### National Planning Policy Framework (NPPF)

- 4.2 The National planning Policy Framework (NPPF) published in March 2012 sets out the Government's planning policies for England. Some Planning Policy Statements that pre-dated the NPPF remain in place such as PPS10 (Planning for Sustainable Waste Management).
- 4.3 The NPPF is a material consideration in planning decisions and guides the development of Local Plans. Policies from the NPPF relating to the Proposed Development are outlined below.
- 4.4 The NPPF highlights the importance of delivering and planning for sustainable development and states a presumption in favour of sustainable development which is based around 12 principles that should under-pin plan making and decision taking. The following four principles are particularly relevant to the Proposed Development.
- *'Drive and support sustainable economic development to deliver the homes, business and industrial units, infrastructure and thriving local places that the country needs';*
  - *'Seek to secure high quality design and a good standard of amenity for all existing and future occupants of land and buildings';*
  - *'Support the transition to a low carbon future in a changing climate...and encourage the reuse of existing resources including conversions of existing buildings...'; and*
  - *'Contribute to conserving and enhancing the natural environment...prefer[ing] land of lesser environmental value where consistent with other policies in this framework.'*
- 4.5 The NPPF sets out 13 sub-topics beneath the goal of Delivering Sustainable Development. The most relevant of these to the project are set out below.

#### *Promoting Sustainable Transport*

- 4.6 The NPPF highlights the importance of transport policies in facilitating sustainable development and contributing to wider sustainability and health objectives. It also states that encouragement should be given to solutions that support reductions in greenhouse gas emissions and reduce congestion.

- 4.7 The project would increase the renewable energy supply in the UK and therefore will help to reduce greenhouse gas emissions.

*Building a Strong, Competitive Economy*

- 4.8 The Government is committed to '*meeting the twin challenges of global competition and of a low carbon future*' using the planning system to support economic growth. Delivery of the Project would support the move towards a low carbon future as the benefits of interconnectors between countries include supporting the use of renewable power generation such as wind power. The ability to trade electricity between countries allows better use of renewable energy when resources are available and support increased security of supply which sustains the economic growth of the nation.

- 4.9 The proposed converter station would be built on land which falls within the Cambois Zone of Economic Opportunity. Two sites within the Cambois Zone of Economic Opportunity (including the converter station site) are subject to a Local Development Order (LDO), which grants planning permission for development which conforms to the provisions set out in the LDO. Whilst the proposed converter station does not accord with all the provisions of the Order, it is complementary to the aspirations of the Order. The LDO seeks to attract businesses requiring large non-estate sites which fall within Use Classes B1 Business, B2 General Industry and B3 Storage and Distribution, and will be similar in scale and nature to the proposed converter station. The development proposals also reinforce plans for the further development of off-shore industries in the area, creating jobs and increasing economic activity in the area.

- 4.10 A detailed assessment of the social and economic effects of the Proposed Development have been considered as part of the environmental assessment which accompanies this planning application.

*Requiring Good Design*

- 4.11 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 buildings or infrastructure that promotes high levels of sustainability because of concerns about incompatibility with an existing townscape.

- 4.12 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 development are minimised as much as possible. The siting of the converter station seeks to complement future development opportunities in the area, and match existing structures within the area, such as the existing substation on the former Blyth Power Station site.

- 4.13 The buildings at the converter station will be similar to those already in the local area and those likely to be built as part of the remaining LDO sites in the future. The land

surrounding the converter station site is owned by the energy company RWE Npower and could potentially see the land developed for energy related businesses, including off shore wind energy related industries, which would complement the interconnector project. RWE Npower, have also previously announced their intention to develop a coal power station on the former Blyth Power Station site.

*Meeting the Challenge of Climate Change, Flooding and Coastal Change*

- 4.14 The NPPF sets out the importance of the planning system in securing reductions in greenhouse gas emissions, minimising vulnerability and providing resilience to the impacts of climate change. Decision making can also support the delivery of renewable and low carbon energy, and associated infrastructure, which is central to the economic, social and environmental dimensions of sustainable development.
- 4.15 The Project helps to meet the challenge of climate change by contributing to managing fluctuations in supply and demand which often occurs in renewable energy generation and thereby indirectly providing better opportunities for development of renewable energy projects internationally through the integration of the North-European power markets.
- 4.16 The Proposed Development is on land that is at low risk of tidal and fluvial flooding, although landfall and sections of the cable route travel through Flood Zones 2 and 3. A Flood Risk Assessment has been carried out to ensure the risk of flooding in the local area or elsewhere would not increase as a result of the development. The Flood Risk Assessment and site drainage forms part of the Hydrology and Flood Risk Assessment submitted as part of the Environmental Statement (ES), which accompanies this application.

*Conserving and Enhancing the Natural Environment*

- 4.17 The planning system has a role in contributing towards and enhancing the natural and local environment. Valued landscapes and ecosystems should be protected, with development prevented from adversely affecting soil, air or water, or from causing noise pollution and land instability. Effective use of land by re-using land that has been previously developed should be encouraged.
- 4.18 The potential effects on the natural environment as a result of the Project have been assessed within the Ecology Assessment as part of the wider Environmental Impact Assessment that has been carried out on the environmental effects of the Proposed development and which accompanies this application.
- 4.19 The subsea cables will fall to land and connect with the onshore underground cables in Cambois Bay, and will lie within 2km of a number of areas important for wildlife including 10 designated sites. These are:
- Northumbria Coast Special Protection Area (SPA)/Ramsar Site;
  - Northumberland Shore Site of Special Scientific Interest; (SSSI);
  - Cresswell and Newbiggin Shores SSSI;
  - Castle Island Local Nature Reserve (LNR);
  - Bedlington Country Park LNR;

- Paddock Wood LNR;
- Wansbeck Estuary Local Wildlife Site (LWS);
- Sleekburn Fen LWS;
- Blyth Estuary LWS; and
- Ha'penny Woods (LNR/LWS).

- 4.20 The proposed landfall lies within 1km from the boundary of the SPA/Ramsar site to the north and 2km from the boundary to the south, but are adjacent to the Northumberland Shore SSSI boundary, which covers the coastal habitats up to the mean high water mark.
- 4.21 In addition to the above protected sites, the dune system along the coastline is a S.41 Habitat of Principal Importance for the Conservation of Biodiversity.
- 4.22 Where impacts have been identified during the ecological assessments, appropriate mitigation measures have been included to reduce any adverse effects, this includes reinstating and supplementing any landscaping removed as part of the cable installations.

*Conserving and Enhancing the Historic Environment*

- 4.23 Chapter 12 of the NPPF provides policy provisions for conserving and enhancing the historic environment. It states Local Planning Authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting as it notes that the significance of a heritage asset can be harmed or lost through development within its setting.
- 4.24 An assessment of the effect of the proposed development on any heritage assets has been looked at in more detail in the Environmental Assessment.

**Regional Planning Policy**

- 4.25 The Localism Act contains provisions to alter the planning system and allow the Secretary of State to make orders revoking Regional Spatial Strategies (RSS). An order was laid before Parliament to formally revoke the North East RSS on 22<sup>nd</sup> March 2013. The Northumberland County and National Park Joint Structure Plan Alteration (February 2005) was also revoked as part of the Order, with the exception of Policy S5, concerning the Green Belt extension around Morpeth. The Council also resolved to have regard to the housing requirement figures contained in the revoked Regional Spatial Strategy on an interim basis until the adoption of the Northumberland Core Strategy.

**Local Planning Policy**

- 4.26 Current Planning Policies for Northumberland are contained in a number of documents that were produced and approved by the following former Local Planning Authorities in Northumberland.

- Alnwick
- Berwick-Upon-Tweed
- Blyth Valley
- Castle Morpeth
- Tynedale
- Wansbeck
- Northumberland County

- 4.27 In April 2009, these seven Local Planning Authorities merged together to form one single Local Planning Authority – Northumberland County Council. The plans and policies produced individually by each of the seven Local Planning Authorities have been brought together to form the ‘Northumberland Consolidated Planning Policy Framework’.
- 4.28 The Consolidated Planning Policy Framework forms the statutory Development Plan for Northumberland, and comprises ‘saved’ policies from the seven former Local Planning Authorities, as well as Policy S5 from the former Northumberland Structure Plan and Local Development Framework documents as they are adopted.
- 4.29 NSN Link falls within the former District of Wansbeck. The Wansbeck District Local Plan was adopted in July 2007 and currently forms part of the Consolidated Planning Policy Framework for Northumberland County Council.
- 4.30 Preparation of the Northumberland Local Development Plan (the Local Plan) has commenced. Stage 1 of the Core Strategy Preferred Options document was consulted on during February and March 2013. Consultation on Stage 2 of the Preferred Options which sets out NCC’s preferred approach to housing, employment and Green Belt ended on 2nd January 2014. While neither of the Preferred Options Consultation Documents have been adopted, they are still a material consideration in determining planning applications.
- 4.31 The area is currently identified in the Wansbeck District Local Plan as part of the Cambois Zone of Economic Opportunity. Policy EMP3 maintains Cambois as an area suitable for development by large employers, requiring large sites in non-estate locations and includes development proposals in use classes B1, B2 and B8. The area has since become established as an energy production location, particularly following the development of the UK’s first pilot offshore wind farm in 2000 and the development of the National Renewable Energy Centre (Narec) and the subsequent blade testing facilities on the Blyth Estuary.
- 4.32 Emerging planning policy recognises the growth in the low carbon, renewable energy economy in Blyth and includes the creation of a strategic employment area within the Blyth Estuary Renewable Energy Zone (BEREZ). BEREZ was established in 2010 and is a public/private sector partnership, including Northumberland County Council, to support investment in the low carbon sector at six sites north and south of the River Blyth. All of which have been given Enterprise Zone (EZ) status.

- 4.33 The proposed converter station site and part of the HVDC underground cable route corridor, south of Fergusson's Business Park are located on land which forms one of the BEREZ strategic sites; the East Sleekburn Strategic Site, which is identified for use as a blade or nacelle manufacturing plant or other major manufacturing operations associated with the Port and offshore renewables. It is also subject to a Local Development Order (LDO), which offers a potential fast-track planning approval for developments specified within the Order. This is described in further detail below.
- 4.34 The relevant adopted local planning policies from the Wansbeck District Local Plan (2007) are set out in Table 4.1 below, whilst Table 4.2 sets out relevant draft policies from the Preferred Options stages of the emerging Core Strategy.

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Table 4.1 Wansbeck District Local Plan (2007)

Planning Policy	Policy Summary	Assessment of Policy
Policy GP1 – General Policy	In combination with other policies in the Plan, including site allocations, Policy GP1 helps to promote a sequential approach to development, which gives priority to the re-use of previously developed land and buildings and development in existing urban areas.	<p>A number of factors were taken into account when determining the location of the Proposed Development including:</p> <ul style="list-style-type: none"> <li>• Proximity to the coast (to minimise DC and AC connections where possible;</li> <li>• Absence of environmental constraints;</li> <li>• Industrial allocations or close to existing industrial uses;</li> <li>• Close to an existing substation or 400kV overhead line with capacity for a tee connection/new substation development; and</li> <li>• Close to a proposed substation or 400kV overhead line with capacity for a tee connector/new substation development.</li> </ul> <p>The proposed converter station site is within 1km of the Blyth coastline, close to the former Blyth power station within the Cambois Zone of Economic Opportunity, which is allocated for the development of businesses requiring a large site in a non-estate location which fall within Use Classes B1 Business, B2 General Industry and B3 Storage or Distribution. Whilst the proposed converter station falls within the <i>sui generis</i> Use Class, the proposed converter station will be a similar scale and character with both existing and proposed land uses.</p>
Policy GP4 - Accessibility	The policy provides that new development should be located to reduce the need to travel and to minimise journey length. It should be accessible by a range of transport modes including buses, walking and cycling, making clear that developments which are only accessible by car will not be permitted.	<p>This policy provides that all new development should be accessible by a range of transport modes. However, the converter station will only require a small workforce (2-3 people), with occasional visits for maintenance etc. and is therefore not likely to have any impact on the local road network.</p> <p>The Port of Blyth, which is a deep water, rail, connected port, provides an opportunity to transport construction materials by water and/or rail, reducing the impact during construction.</p>
Policy GP5 – Landscape Character	This policy recognises that landscape and topographical features make an important contribution to the character and attractiveness of the District. It seeks to ensure that development that would have an adverse effect on the character or appearance of those areas which contribute most	The Northumberland Landscape Character Assessment (August 2000) identifies the whole development area as part of the Blyth and Wansbeck Estuaries character area (41a). Key landscape characteristics include an intensively developed landscape, with large scale industrial structures and former industrial sites present in all views from this area.

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Planning Policy	Policy Summary	Assessment of Policy
	to the quality and distinctiveness of the local landscape, will not be permitted.	The proposed converter station is therefore in keeping with the landscape character and landscape features of the area.
GP6 – Trees and Hedgerows	Policy GP6 seeks to protect trees, woodlands and hedgerows and encourages new planting (particularly of native species), and development which would result in the loss of healthy trees which make an important contribution to the quality of the environment, will not be permitted unless there are overriding social or economic benefits of doing so.	The cable route is likely to run through several agricultural fields and field boundaries. However, as the land will be reinstated once the cables have been installed, the impact will be temporary.
Policy GP7 – Best and Most Versatile Agricultural Land	Development which would have an adverse and irreversible effect on the best and most versatile agricultural land will only be permitted if it can be demonstrated that the development cannot be accommodated on poorer quality land that is not subject to sustainability constraints.	
Policy GP8 – The Coastal Zone	The Coastal Zone, as defined on the Proposals Map, will be protected and, where possible, improved. Development in or affecting the Coastal Zone will only be permitted if: <ul style="list-style-type: none"> <li>a) a coastal location is essential and no suitable alternative site exists; and</li> <li>b) development would not cause harm to coastal systems and habitats.</li> </ul>	The Proposed Development falls within the Coastal Zone as defined on the Proposals Map. A coastal location is essential for the landfall of the subsea cables.  During construction there will be a visual impact within the coastal zone, however, following reinstatement and during operation there will be no visible impact of the cable affecting the character of the area and will not cause any long term harm to coastal systems and habitats.
Policy GP10 – Sites of National Importance for Nature Conservation	Development which is likely to have an adverse effect will not be permitted unless the reasons for development clearly outweigh the nature conservation value of the site, and there are no reasonable alternatives. Planning conditions and/or planning agreements will be used to mitigate any adverse effects.	Northumberland Shore is a designated SSSI, due to its value in terms of birdlife.  Potential effects on Ecology and Biodiversity are considered in the accompanying Ecological and Biodiversity survey.
Policy GP12 – Protection of Species	This policy ensures that protected species and their habitats are not harmed by development. Where development is permitted, which affects a site providing habitat for a protected species, planning conditions and/or agreements will be used to	Pre –application discussions have taken place with Natural England throughout the progression of the Project, in line with Policy GP12.

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	ensure the species are protected. In addition, Policy GP12 strongly advises development to undertake pre-application consultations with Natural England to avoid delays.	
Policy GP13 – Biodiversity and Wildlife Networks	<p>The value to biodiversity of all sites proposed for development will be considered when planning applications are determined whether or not they are designated sites. Particular importance will be attached to the protection of priority habitats and species in Wansbeck.</p> <p>Where proposals affect a habitat which contributes, or could potentially contribute, to a network of natural habitats the developer will be required to protect and enhance the network.</p>	The potential for priority habitats and species exists (as identified in the Northumberland Biodiversity Action Plan (2000)). These are considered in the Ecological and Biodiversity Survey attached. Where necessary mitigation will be put in place to ensure the protection of natural habitats particularly during construction.
Policy GP21 - Archaeology	Where evidence suggests that a proposed development could disturb archaeological remains, the developers will be required, before their planning application is determined, to provide information on the character and extent of the remains and any measures they propose to mitigate the impact of development. A field evaluation will be required if judged necessary.	An assessment of the Historic Environmental Assessment forms part of the ES which accompanies this application. No significant adverse effects are anticipated.
Policy GP22 – Flood Risk and Erosion	<p>Policy GP22 provides that developers should consider both the impacts of flood risk and erosion on the proposed development as well as the impact of the development on flood risk and erosion elsewhere. Where development is proposed in areas of flood risk a flood risk assessment is required.</p> <p>In coastal situations, work should not prejudice the ability of coastal features and processes to form natural sea defences.</p>	<p>A FRA has been undertaken, and forms part of the Hydrology and Flood Risk assessment within the accompanying ES (Ramboll UK_61031746_E02_Flood Risk Assessment_Nov 2013)</p> <p>The cable route and converter station site are all considered to be at low risk from flooding and any impact on coastal features would be limited to the construction phase only and are not anticipated to cause any long term adverse effects.</p>
Policy GP23 – Pollution and nuisance	When determining planning applications, the authority will consider whether a proposed development has the potential to cause pollution or	It is not anticipated that the Proposed Development will have a significant impact on health and safety, local amenity or the environment in general. The accompanying ES has assessed the impact of the Proposed

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Planning Policy	Policy Summary	Assessment of Policy
	<p>nuisance. Planning permission will not be granted for development liable to cause significant harm to either:</p> <ul style="list-style-type: none"> <li>a) human health and safety</li> <li>b) the amenity of local residents and other land users</li> <li>c) the quality and enjoyment of all aspects of the environment</li> </ul>	<p>Development in terms of air quality, noise and vibration and the impact on hydrology. No significant adverse effects have been identified.</p>
Policy GP25 - Noise	<p>Policy GP25 relates specifically to noise, and states that any likely impact of development in relation to noise, will be assessed in terms of the following:</p> <ul style="list-style-type: none"> <li>a) any disturbance to people living in the area;</li> <li>b) any disturbance to other noise-sensitive uses such as hospitals, schools, colleges, offices and community buildings; and</li> <li>c) any effect on people's enjoyment of the outdoor environment including gardens, parks, the coast and the countryside; and</li> <li>d) any disturbance to wildlife or livestock; and</li> <li>e) whether any potential conflict can be resolved by the use of planning conditions or obligations.</li> </ul> <p>Proposals which would cause significant harm in terms of the above criteria will be refused.</p>	<p>The converter station will operate within acceptable noise levels and will include appropriate mitigation, identified in the Noise and Vibration assessment, which forms part of the ES.</p>
Policy GP30 – Visual Impact	<p>All proposed development will be assessed in terms of its visual impact. Developments which in visual terms would cause significant harm to the character or quality of the surrounding environment will be refused.</p>	<p>Photomontages have been produced and demonstrate that there will be limited views of the converter station from a range of viewpoints and will not therefore cause significant harm to the character or quality of the surrounding environment.</p>
Policy GP31 – Urban Design	<p>The policy sets out the key principles that must be addressed to ensure good urban design. These include development which:</p> <ul style="list-style-type: none"> <li>a) Promotes character;</li> <li>b) Encourages accessibility;</li> <li>c) Encourages adaptability; and</li> <li>d) Promotes diversity</li> </ul>	<p>The proposed converter station will be similar in scale and nature to surrounding development (both existing and proposed).</p> <p>The scale of the converter station buildings will be reduced by use of appropriate coloured cladding which will include a gradual fading of colour from the bottom to the top. A recessive grey 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 of the converter station</p>

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		buildings.
Policy GP32 – Landscaping and Public Realm	<p>This policy requires developers to incorporate a high standard of landscape treatment in their developments. This should include:</p> <ul style="list-style-type: none"> <li>a) The retention of valuable landscape features;</li> <li>b) The inclusion of new landscape features which are appropriate to the development and its location;</li> <li>c) The inclusion of landscape features which enhance the visual quality of the development, reduce its impact and provide habitat for the district's wildlife; and</li> <li>d) Arrangements put in place for the future management and maintenance of all landscaped areas.</li> </ul>	Retention of valuable landscape features and the inclusion of new features will be incorporated into the detailed design of the project. Any impact is likely to be confined to construction phases only, and is not expected to have any long term effects.
Policy GP34 – Resource Conservation and Integrated Renewable Energy	Developments are required to demonstrate that they have been designed to conserve energy and water. Major developments (10 or more residential units or non-residential units exceeding 1000sqm) are required to produce 10% of predicted energy use to be provided on site from renewable sources.	The Project will allow the exchange of electricity between the UK and Norway which will support energy efficiency and low carbon generation from renewable sources by helping to manage fluctuations in generation and demand.
Policy GP35 – Crime Prevention	<p>Proposals should include measures which discourage criminal activity. This could include:</p> <ul style="list-style-type: none"> <li>• promotion of mixed use development and other schemes that increase the range of activities that maximize the opportunities for surveillance;</li> <li>• maximizing the amount of defensible space which is controlled, or perceived to be controlled, by occupiers; and</li> <li>• a high standard of street lighting.</li> </ul>	Crime prevention measures will be incorporated in the detailed design proposal, which includes the installation of a security fence around the converter station site to prevent unauthorised access to the converter station.
Policy GP36 – Comprehensive Development	Policy GP36 is concerned with making full use of land which is suitable for development, and does not permit development which would prejudice the future comprehensive development of other land which is either allocated for development in the plan or which has reasonable prospects in terms of	The Project complements development which is likely to come forward on adjacent land particularly that associated with the Cambois Zone of Economic Opportunity and the former Blyth Power Station site. It is also ideally located to support the off-shore energy industries in the area.

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Planning Policy	Policy Summary	Assessment of Policy
Policy EMP3 – Cambois Zone of Economic Activity	<p>plan policies of coming forward for development.</p> <p>Defined on the Proposals Map, the Cambois Zone of Economic Activity provides an opportunity for developments requiring large sites in non-estate locations.</p> <p>Development for Use Classes B1, B2 and B8 are permitted provided;</p> <ul style="list-style-type: none"> <li>• Development cannot be accommodated in a designated employment area</li> <li>• If development is proposed on greenfield land, there are not suitable brownfield sites</li> <li>• Proposals must include large amounts of tree planting and other forms of landscaping</li> </ul>	<p>The converter station site falls within the area defined as the Cambois Zone of Economic Opportunity on the Wansbeck Proposals Map and within a Local development Order which has been put in place on the converter station site.</p> <p>Major environmental improvements are sought for Cambois to enhance the environment for local residents and create new areas for recreation and wildlife, as well as improving the attractiveness of the area for investors. The development proposals help support this aspect of the policy, complementing the aspirations for the area and future land uses.</p>
Policy T3 – Provision for Cyclists	Developers will be required as a condition of planning permission to provide cycle parking as part of their developments.	The proposed converter station will only require a very small workforce (2-3 people) with occasional visits for maintenance etc. Accessibility is therefore only a small consideration. As such, assessments have focused on the impacts associated with construction, and identified the opportunity to utilise the Port of Blyth, to transport construction materials by water and/or rail.
Policy T4 – Provision for Walking	Developers will be required to provide safe, convenient and pleasant routes for pedestrians. Proposals to extinguish or divert public rights of way, or close other footpaths, will not normally be supported	
Policy T5 – Access for People with Reduced Mobility	Developers are required to make appropriate provision for those with reduced mobility as part of their developments.	The converter station will meet the required DDA standards which will be incorporated into the detailed design.
Policy T6 – Traffic Implications of New Development	New developments vary greatly in terms of scale, character and location but all should provide satisfactory arrangements for access, internal circulation and servicing. Policy T6 seeks to ensure that proper consideration is given to such matters as part of the development control process.	The Proposed Development is not anticipated to have a significant impact on the existing road network and the proposed internal road layout; servicing and delivery provisions are adequate for construction, operation and maintenance requirements.
Policy T7 - Parking Provision in New	Policy T7 establishes that car parking will be an important consideration when proposals are being considered, taking account of:	Appropriate car parking provision will be included in the development proposals, in accordance with NCC's parking standards.

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Planning Policy	Policy Summary	Assessment of Policy
Development	<ul style="list-style-type: none"> <li>• The scale and type of development;</li> <li>• Accessibility by a range of transport modes;</li> <li>• The level of area wide parking standards and restrictions; and</li> <li>• The potential for environmental problems and safety issues.</li> </ul>	

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Table 4.2 Preferred Options Consultation Documents

Planning Policy	Policy Summary	Assessment of Policy
Policy 1 – Sustainable Development	<p>This provides an overarching policy which reflects the presumption in favour of Sustainable Development, which includes:</p> <ul style="list-style-type: none"> <li>a. Building a strong economy;</li> <li>b. Providing access to housing;</li> <li>c. Supports and improves access, health, infrastructure, social and cultural wellbeing;</li> <li>d. Conserves and enhances the natural, historic and built environment;</li> <li>e. Makes the most efficient and effective use of available resources (e.g. land, water, minerals, buildings);</li> <li>f. Demonstrates high quality design which respects and enhances local distinctiveness;</li> <li>g. Is resilient to economic, social and climatic change;</li> <li>h. Is aligned with the objectives of the Core Strategy.</li> </ul>	<p>The Project will allow electricity exchange between the UK and Norway which will support energy efficiency and low carbon generation from renewable sources by helping to manage fluctuations in generation and demand.</p> <p>Any impacts on Landscape and Ecology are anticipated to be temporary and the project complements the aspirations of the area (as identified in the Cambois Zone of Economic Opportunity LDO), and may encourage further economic development in the area, such as those associated with the off shore energy industries or other power industries.</p>
Policy 2 – Spatial Distribution	<p>The Core Strategy will focus the majority of new development in Northumberland's main towns and service centres. Additional large-scale development and growth will be focused on key locations in: Blyth, Cramlington, Ashington and Morpeth.</p>	<p>The converter station is proposed in a location that has been specifically designated for the development of large-scale developments and complements potential future developments, such as the growing off-shore energy industries that are emerging in the area – The Blyth Estuary Renewable Energy Zone (BEREZ).</p>
Policy 6 – South East Northumberland Delivery Area.	<p>The County has been divided up into separate delivery areas. The South East Delivery Area includes the main settlements of Ashington, Bedlington, Blyth, Cramlington and Amble.</p> <p>Policy 6 aims to tailor the delivery approach to meet the specific development needs of the area. These include:</p> <ul style="list-style-type: none"> <li>• Focusing large-scale development and growth on key locations in Blyth, Cramlington, and Ashington; and</li> </ul>	<p>The Project will allow electricity exchange between the UK and Norway which will support energy efficiency and low carbon generation by helping to manage fluctuations in generation and demand. This will complement the Blyth Estuary Renewable Energy Zone and other off-shore related industries that are emerging in the area, as well as encouraging further development within the Cambois Zone of Economic Opportunity which has Enterprise Zone status.</p>

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Planning Policy	Policy Summary	Assessment of Policy
	<ul style="list-style-type: none"> <li>• Prioritising the Blyth Estuary Renewable Energy Zone strategic employment area for economic development within the low carbon and environmental goods and services sector and for renewable and low carbon energy generation;</li> </ul>	
Policy 13 – BEREZ Strategic Employment Area	The BEREZ strategic employment area is prioritised for economic development within the low carbon and environmental goods and services sector, and for renewable and low carbon energy generation.	<p>The Cambois Zone of Economic Opportunity is identified as one of 3 BEREZ sites.</p> <p>As the project enables electricity exchange between Norway and the UK, it will support energy efficiency and low carbon generation from renewable sources by helping to manage fluctuations in generation and demand. It therefore has very close connections with the renewable and low carbon energy generation and conforms to the aspirations set out in Policy 13.</p>
Policy 30 – Sustainable Design and Construction	Draft Policy 38 is commitment to sustainable design and construction which strives to achieve high energy efficiency and low or zero carbon energy generation where viable, and sets out a list of criteria which all new development proposals must satisfy.	<p>Sustainable design and construction standards will be considered at the detailed design stage. Currently the proposals relate to outline planning consent with all matters reserved.</p> <p>Details with regards to sustainable design and construction will be considered further (should planning permission be granted) once a contractor has been appointed.</p>
Policy 36 – Large-scale Renewable and Low Carbon Energy Development	Large-scale renewable and low carbon energy development proposals will be supported in order to contribute to energy generation and a reduction in CO <sup>2</sup> emissions, unless the benefits are clearly outweighed by significant adverse effects on the environmental, social and economic wellbeing.	The Policy is consistent with the NPPF and does not require developments to demonstrate overall need for renewable or low carbon energy. Development will be supported providing impacts are (or can be made) acceptable. Environmental, social and economic wellbeing will not be adversely affected by the proposed development (as demonstrated in the supporting ES), although some temporary impacts have been identified during construction.
Policy 40 – Principles for Accessibility	<p>New developments should make adequate provision of pedestrian and cycle access and links to existing networks will be sought where appropriate. All development proposals should where appropriate and viable promote accessibility by:</p> <ul style="list-style-type: none"> <li>• Reducing the need to travel;</li> <li>• Supporting investment in infrastructure for</li> </ul>	<p>This policy provides that all new development should be accessible by a range of transport modes. However, this will only have a small workforce (2-3 people at a maximum at any one time) with additional personnel required during occasional visits for maintenance etc.</p> <p>As the site is close to the Port of Blyth, which is a deep water rail connected port, there is the opportunity to transport construction materials by water and/or rail thus reducing the impact on the road</p>

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Planning Policy	Policy Summary	Assessment of Policy
	sustainable modes of travel; <ul style="list-style-type: none"> <li>• prioritising access for pedestrians and cyclists; and</li> <li>• Considering the transport and accessibility needs of the whole community when planning and assessing development.</li> </ul>	network.
Policy 41 – Parking Standards for Residential and Non-residential Development	This policy retains the Council’s current car parking standards with the need to consider: <ul style="list-style-type: none"> <li>• The scale and type of development;</li> <li>• Accessibility by a range of transport modes;</li> <li>• The level of area wide parking standards and restrictions; and</li> <li>• The potential for environmental problems and safety issues.</li> </ul>	Appropriate car parking provision in accordance with the Council’s current car parking standards will be provided.
Policy 43 – The Effects of Development on the Road Network	Development which will impact on the road network will be required to: Include appropriate measures to mitigate the adverse effects; <ul style="list-style-type: none"> <li>• Minimise conflict between different types of road user;</li> <li>• Facilitate the safe use of the public highway;</li> <li>• Provide appropriate access and egress to/from the development;</li> <li>• Minimise any adverse impact on communities, including noise and air quality;</li> <li>• Where necessary, contribute to the improvement of access to key services and facilities; and</li> <li>• Provide access to sustainable transport provisions, where appropriate.</li> </ul>	No additional impact on the existing road network is anticipated and the proposed internal road layout and the servicing and delivery provisions are adequate.
Policy 50 – Natural and Historic Environment	Development proposals should seek to conserve, protect and enhance Northumberland’s distinctive and valued natural and historic environment by: <ul style="list-style-type: none"> <li>• Giving great weight to the protection of international and national designated nature</li> </ul>	No long term significant adverse effects are anticipated as demonstrated in the supporting ES.

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Planning Policy	Policy Summary	Assessment of Policy
	<p>and historic conservation sites;</p> <ul style="list-style-type: none"> <li>• Applying an ecosystem approach to minimise impacts on biodiversity and providing net gains in biodiversity where possible;</li> <li>• Understanding the significance of heritage assets and their settings and the potential effect of proposals;</li> <li>• Protecting and enhancing the character, quality and distinctiveness of the landscape;</li> <li>• Preventing harm to geological conservation interests;</li> <li>• Preventing harm from unacceptable levels of soil, air and water pollution as well as adverse impacts on land stability;</li> <li>• Soil should be protected through sustainable use and re-use ;</li> <li>• Limiting the impact of urbanising effects in those areas identified as tranquil; and</li> <li>• Identifying opportunities to enhance understanding and enjoyment of the natural, historic and built environment.</li> </ul>	
Policy 51 – Natural Environment	Development proposals should seek to conserve and enhance Northumberland’s natural environment. Proposals that would result in significant harm to Northumberland’s natural environment will only be permitted where the harm cannot be avoided, adequately mitigated or, as a last resort, compensated.	The Proposed Development will not lead to significant harm to Northumberland’s environment. Mitigation measures have been identified as part of the extensive environmental assessments and will be included where assessments demonstrate a need.
Policy 52 - Landscape	Development proposals should seek to conserve and enhance the distinctive character and quality of Northumberland’s landscape having regard to the Northumberland Landscape Character Assessment.	<p>The Northumberland Landscape Character Assessment (August 2000) identifies the whole development area as part of the Blyth and Wansbeck Estuaries character area (41a). Key landscape characteristics include an intensively developed landscape, with large scale industrial structures and former industrial sites present in all views from this area.</p> <p>The proposed converter station is therefore in keeping with the landscape character and landscape features of the area.</p>

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Planning Policy	Policy Summary	Assessment of Policy
Policy 53 – Historic Environment & Heritage Assets	Development proposals should seek to conserve, enhance and promote the quality and integrity of Northumberland’s distinctive and valued historic environment and heritage assets. Proposals that would result in significant harm will only be permitted where the harm cannot be avoided, adequately mitigated against or, as a last resort, compensated.	An assessment of the Historic Environment (which includes archaeology) has been undertaken and no significant adverse effects are anticipated.
Policy 56 – Water Environment	<p><i>Flood Risk</i> Development proposals will be required to consider the effects of the proposed development on flood risk, both on-site and off-site, having regard to the policy approaches contained within the relevant Catchment Flood Management Plan.</p> <p><i>Water Quality</i> The strategy for water quality is to maintain and improve the water quality of Northumberland, having regard to local river basin management plans and the findings of the Northumberland Water Cycle Study.</p>	The cable route and converter station site are all considered to be at a low risk from flooding and is not considered to have any adverse long term effects on water quality in the area – see accompanying ES (Chapter 13 Hydrology and Flood Risk).
Policy 57 – Coastal Erosion and Coastal Change Management	<p>Development proposals should avoid areas vulnerable to coastal change or add to the impacts of physical changes to the coast. Such development proposals must be proven appropriate and sustainable when assessed against the relevant management approach for the area as set out in the Shoreline Management Plan.</p> <p>Development proposals in areas vulnerable to coastal change will be required to:</p> <ul style="list-style-type: none"> <li>• Demonstrate the need for a coastal location that overrides the risk of coastal change and provides wider sustainability benefits;</li> <li>• Provide a Coastal Change Vulnerability Assessment which demonstrates that the development is safe over its planned lifetime;</li> <li>• Demonstrate that the coastal environment is not significantly adversely affected;</li> <li>• Provide an assessment of the impact of the</li> </ul>	Any impact on coastal features would be limited to the construction phase only and limited through the utilisation of the existing slipway. As such no long term adverse effects are anticipated.

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	development on existing coastal defence infrastructure.	

## **Supplementary Planning Guidance**

### Wansbeck Design Guide SPD (2007)

- 4.35 The Wansbeck Design Guide SPD provides an overarching and core design policy (Design Guide Policy CD1) which forms a core element of the Council's planning policy, to ensure that the quality of the urban and rural environments are of the highest possible standards.
- 4.36 Policy CD1 sets out the criteria which development proposals are expected to achieve in order to create a high quality, sustainable environment which enhances and complements the natural and built assets of Wansbeck. These include:
- Promoting sustainable development of the highest quality and encourage innovation and excellence in design to create places of distinction and a sense of place;
  - Maximising the use of previously developed land and promote good quality mixed use developments;
  - Promoting design solutions that maximise the use of renewable resources and resource conservation;
  - Maintaining and enhancing the amenities and character of residential areas, securing good relationships with existing development, and respecting the scale and nature of development;
  - Creating safe, permeable development and spaces that encourage walking and cycling;
  - Safeguarding and enhancing the historic environment;
  - Protecting and enhancing rural and urban open spaces and the biodiversity of the district; and
  - Safeguarding and enhancing nature and conservation sites of international, national and local importance.
- 4.37 The Design Guide also sets out the requirements for Design and Access Statements including the need to undertake analysis of the physical context of the proposals, and takes account of the options developed and their evaluation, and provide a conclusion as to why the proposals provide an optimum design response to the site and its setting.
- 4.38 As the Proposed Development is only seeking outline planning consent with all matters reserved, detailed designs have yet to be established. Once a contractor has been appointed, the requirements set out in the Design Guide will be incorporated into the detailed design.

### Northumberland East Sleekburn Sites Local Development Order (February 2013)

- 4.39 The Local Development Order (LDO) grants planning permission exclusively for the erection of buildings and/or the use of land and associated development for Use Classes B1 (a), B1 (b), B1 (c); B2 and B8 (and ancillary Use Classes A1 and A3),

removing the need to seek formal planning permission, subject to meeting the requirements and conditions contained in the Order.

- 4.40 Converter stations are considered to be *Sui Generis* and do not therefore fall within the permitted Use Classes stipulated within the LDO. The provisions of the LDO cannot therefore be used in the consenting process of the converter station and formal planning permission is therefore being sought.
- 4.41 However, as the LDO sets out certain aspirations for the site, regard should therefore be had to the requirements and conditions set out in the LDO, if only to ensure compliance and compatibility with future developments on the site.

#### Access and Site Layout

- 4.42 The main access road to the two LDO sites from the A189 (Spine Road) is Brock Lane, which is the proposed access route for the converter station. The LDO confirms that the existing highway is potentially suitable for the transportation of very large components (subject to minimal adjustments) and therefore capable of accommodating abnormal loads, which would be required for the delivery of transformers as part of the converter station development.
- 4.43 In terms of site layout, the LDO sets out a condition stating that development should be positioned so as not to prejudice future development in the wider LDO area and should take account of development restrictions associated with the overhead lines which cross the site. The converter station has been positioned as close to the edge of the site as possible, to achieve a large developable area for future development on the remaining part of the site, whilst limiting the loss of screen planting and limiting the impact on residential amenity. In addition, no buildings or areas of assembly, unloading, stacking or moving material or tall structures such as lighting columns are proposed underneath the overhead lines.

#### Development Scale

- 4.44 The LDO sets a maximum height of 35m AOD for all buildings. The tallest buildings proposed as part of the Proposed Development, relate to the converter station valve halls and DC switch hall which are anticipated to be up to 25m in height – well below the LDO maximum height limit.

#### Landscaping

- 4.45 The LDO sets a requirement for a high quality landscaping scheme to be submitted for a site or development area which for the converter station site, should include the retention of at least a 50m wide strip of existing planting on the site's western boundary, and where possible a minimum 10m wide strip along the southern boundary.
- 4.46 As much of the existing planting is to be retained as possible as part of the Proposed Development. Additional planting will be created where the need is identified as part of the Landscape and Visual assessments

### Transport, Parking and Access

- 4.47 In order to comply with the provisions of the LDO, development exceeding set floorspace thresholds is required to submit a Transport Assessment. A Transport Assessment has been undertaken for the Proposed Development as part of the environmental Assessment which accompanies this planning application, which considers the impacts of the Proposed Development on transport during construction, operation and decommissioning.
- 4.48 The LDO also seeks to ensure accessibility of the site through the consideration of servicing requirements, manoeuvring, loading/unloading, highway safety and must provide adequate parking for commercial vehicles, employees and visitors and cycle parking facilities. Servicing and parking facilities are proposed within the converter station site and includes circulation space to enable manoeuvring. These have been assessed as part of the Traffic and Transport assessment to ensure adequate parking and access provision to minimise danger, obstruction and inconvenience to users of the adjoining highway.

### Sustainable and Surface Water Drainage

- 4.49 Details of drainage works are required to be submitted and approved by the LPA in order to comply with the condition set out in the LDO. This should include an assessment of potential Sustainable Drainage System (SUDS).
- 4.50 On site drainage proposals have been prepared for the converter station site. This includes the provision of SUDS which would be implemented to effectively manage the pollution risk arising from the proposed converter station and paved areas as well as provide the required attenuation volume, which may include pervious pavement, mini-swales, bio-retention or planters, as well as small ponds or basins.

### Land Contamination and Ground Conditions

- 4.51 The LDO includes a condition which requires developments to determine the level of ground contamination present and remediation detailed and approved by the LPA. In addition, where development falls within the Coal Mining Referral Area, a Coal Mining Risk Assessment Report must also be submitted and approved by the LPA in consultation with the Coal Authority.
- 4.52 Chapter 12, Geology and Land Quality of the supporting ES describes a range of surveys and desk-based assessments which have been used including Environment Agency mapping, British Geological Survey Maps and Coal Mining Authority reports and surveys and have been included as part of the Geology and Land Quality assessment.

### Archaeology

- 4.53 A programme of archaeological work is required to be undertaken as part of the requirements set out in the LDO. These include submitting a written scheme of investigation, the completion of the archaeological recording scheme and where required, a programme of analysis, reporting, publication and archiving.

- 4.54 As part of the Historic Environment assessment (Chapter 10) of the ES, receptors have been identified as part of the initial desk-based studies, which identified conservation areas, scheduled and non-scheduled monuments as well as areas of know and potential archaeological remains. The information collated as part of these studies has been used to establish the baseline for the historic environmental assessment and appropriate mitigation have been identified.

#### Lighting

- 4.55 In accordance with the LDO new lighting should be designed in accordance with Institute of Lighting Engineers Guidance Notes For The Reduction Of Obtrusive Light and should be positioned so as to protect the interests of amenity, prevent nuisance and distraction and protecting species and habitats.
- 4.56 As described in paragraph 3.22 above, lighting (when required) as part of the converter station site will be controlled to avoid the unnecessary illumination of areas beyond the development. Glare and the spread of upward light will be kept to a minimum to reduce sky glow and minimise visual intrusion within the open landscape. It is not necessary to illuminate the whole perimeter. The entrance and walkways for access and egress and emergency exits will however need illuminating for safety reasons.

#### Noise

- 4.57 Noise from construction, piling and operations on site should be assessed using BS5228 and BS4142 respectively prior to the commencement of development under the provisions of the Order and a scheme for the effective control of noise and vibration from premises shall be submitted and approved in writing by the LPA. In addition, the LDO limits noise associated with construction, operation and decommissioning to 55db(LAmax) at designated sites during the over wintering period October – March.
- 4.58 A full Noise and Vibration assessment has been undertaken as part of the ES. A range of legislation, guidance and industry best practice has been used to inform the assessment including BS5228 and BS4142.

#### Dust, Particulates, Odour and Ventilation

- 4.59 The LDO requires that where a proposed development would result in emissions of dust, particulates, fumes or odours from the construction or operation of the site, a scheme be submitted for the effective control of such emissions.
- 4.60 A desk-based air quality assessment has been undertaken as part of the environmental assessments to determine the potential air quality effects on receptors arising from the construction and operation of the Proposed Development, and a Construction Environmental Management Plan (CEMP) has been produced which identifies mitigation measures to be implemented where required during the construction stage to reduce or remove impacts such as dust, particulates, fumes and odours on receptors.

Ecological Assessment and Mitigation

- 4.61 A number of ecological matters are raised which need to be addressed as part of the conditions for the LDO. These include;
- Making provision for suitable undisturbed feeding and roosting habitat for wading birds and provision for suitable habitats for Grayling butterfly and reptiles;
  - Bat accesses shall be created prior to any filling, sealing or other works to tunnels, or other voids;
  - Construction pits/trenches/foundations should include escape ramps for otters;
  - Where the site has developed a short perennial/ephemeral vegetation type of floristic interest the seed-bank should be trans-located to landscaping within or off-site or a seed collection method should be carried out; and
  - No vegetation/site clearance shall be undertaken on the site or area of the development phase between the 1st March and 31st August unless it has been confirmed that no birds nests are being built or in use, eggs or dependent young will be damaged or destroyed
- 4.62 A full ecological assessment has been undertaken as part of the ES for the Proposed Development and appropriate mitigation has been identified in the interests of the conservation of biodiversity and the protection of species and their habitats.
- 4.63 Schedule 3 of the LDO sets out a requirement to demonstrate how the proposed development has had regard to achieve high quality and inclusive design. In particular, it should demonstrate how the development responds to local character and to heritage assets; how the development optimises the potential of the site; and how the development is adaptable and can respond to changing social, technological and economic conditions.
- 4.64 In addition, Schedule 4 sets out a number of conditions which relate to design and access. These include:
- Development to be positioned in such a way as not to prejudice future development of the wider LDO area;
  - The maximum heights of buildings must not exceed 35m AOD;
  - All buildings should be designed to ensure energy consumption is minimised and all buildings over 500sqm will be required to achieve BREEAM 'very good' accreditation or achieve a minimum of 10% of its energy consumption from renewable sources;
  - A high quality landscaping scheme shall be implemented for the site or area of the development phase during the first full planting season and be appropriate to the setting; and
  - All new buildings and associated development will be required to be fully accessible, having regard to the needs of the disabled and less mobile people, servicing requirements, manoeuvring, loading/unloading and highway

safety and must provide adequate parking for commercial vehicles, employees and visitors and cycle parking facilities.

## 5.0 CONCLUSIONS

- 5.1 The Proposed Development will allow the transfer of electrical power between the high voltage grid systems of Norway and the United Kingdom. The power would be able to flow in either direction at different times, depending on the supply and demand in each country. The project contributes to a low carbon future by allowing better use of renewable energy when resources are available and the ability to trade electricity over NSN Link will contribute to a downward pressure on wholesale electricity prices. In addition, the project is consistent with EU and UK policy (as demonstrated in Chapter 4).
- 5.2 The site of the proposed converter station is on land currently identified as part of the Cambois Zone of Economic Opportunity and has an adopted Local Development Order (LDO) for the site and adjacent site, which grants planning permission for certain types of development specified in the order without the need for planning permission. Permitted develop includes large scale industrial units. Electricity infrastructure such as converter stations are however classified as *sui-generis* development, as such the Proposed Development is exempt from benefiting from the simplified planning regime of the LDO and is therefore subject to formal planning procedures.
- 5.3 Development Plans seldom make allocations for electricity infrastructure, therefore in considering where developments of this nature could be located; developers typically seek locations where the existing character shows similarity with those of the development, such as where there are existing industrial uses which are unlikely to be adversely affected by such development. The location of the proposed converter station on land allocated for large scale, non-estate industrial development (as set out in the LDO) is consistent with this approach and consistent with the emerging proposals to form the Blyth Estuary Renewable Energy Zone (BEREZ) as set out in the Core Strategy Preferred Options Consultation Document.
- 5.4 The converter station site off Brock Lane offers excellent access to the trunk road network via the A189 and opportunities to utilise Battleship Wharf at Blyth Harbour for the delivery of construction materials and equipment. The levels of traffic generated during the construction phase of the development are not considered to be significant and will not result in adverse effects on the local highway network. Once in operation, the Proposed Development is not considered to have a significant impact on the local road network, and the converter station site can be accessed from sustainable transport routes such as the Coast and Castles Cycle Route (National Cycle Network Route 1).
- 5.5 The subsea and onshore underground cables can be installed without causing long term disturbance or harm to land and no significant adverse environmental effects are anticipated. Where identified mitigation will be put in place to avoid or reduce potential effects.

- 5.6 The proposed converter station is within 2km of a number of internationally and nationally designated nature conservation areas. Ecological surveys have been undertaken to assess the effects of the Proposed Development on these designated sites and the findings form part of the ES and supporting material accompanying this planning application. The assessment shows there to be no significant adverse.
- 5.7 Although the development is not in full accordance with the development plan, due to it comprising of a bespoke *sui generis* form of development, it does not conflict with the policies, aims and objectives of the development plan, and does in fact complement the local and wider aspirations of the area, in particular the low carbon energy sectors.