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1 INTRODUCTION

This Non-Technical Summary (NTS) summarises the Environmental Statement (ES) prepared for the Onshore Transmission Works (the Development) associated with the Beatrice Offshore Wind Farm (the Wind Farm). The Development is the onshore infrastructure required to facilitate export of power from the Wind Farm to the National Electricity Transmission System (NETS).

The Environmental Impact Assessment (EIA) for the Wind Farm and associated Offshore Transmission Works (OfTW) is reported within a separate ES which accompanied the consent application submitted to Marine Scotland Licensing Operations Team (MS-LOT) in April 2012 and consent under Section 36 of the Electricity Act 1989 was formally granted on 19th March 2014, with marine licences being granted for the Wind Farm and OfTW in August 2014. The OfTW comprises the offshore electricity substations and the export transmission cable up to the point where it reaches land at the Mean High Water Springs. The Wind Farm and OfTW have therefore received all of the required development consents.

In 2012 an application for Planning Permission in Principle (PPP) for the Development was submitted to The Moray Council (TMC) as local planning authority under the Town and Country Planning (Scotland) Act 1997 (as amended). At a meeting of the Council's Development Standards Committee in February 2013, the Development was granted PPP subject to conditions. The decision notice (Ref. 12/01774/EIA) was issued on 22 February 2013.

Further Detailed Planning Permission (DPP) is now being sought from TMC via an application under the Town and Country Planning (Scotland) Act 1997 (as amended) by Beatrice Offshore Windfarm Limited (BOWL). The accompanying ES has been prepared in accordance with the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (as amended) (the EIA Regulations). The ES reports the findings of the Environmental Impact Assessment which has been carried out to assess the likely significant effects of the Development on the environment.

The key elements of the Development are as follows:

- Cable landfall point to the west of Portgordon where the offshore export cables will land;
- Approximately 18.5 kilometres (km) of underground high voltage alternating current (HVAC) cabling running from the landfall site at Portgordon to the substation site; and
- The construction and operation of a new HVAC substation site at Blackhillock, with associated new permanent access.

Further description of the Development is provided in Chapter 6 of this NTS. A full description of the Development is provided in Chapter 6: *Development Description* contained in Volume I of the ES.

The Development as assessed in this ES has varied slightly from the Development that was assessed in the PPP ES. The main differences are:

- Alteration of the cable route crossing of the Burn of Tynet due to concerns over the potential impact on a shallow aquifer that is used for water abstraction;

- Blackhillock Access – Permanent Access Route. A new access point and track is included to enable construction of the substation site. The access track will run from the adopted highway to the southeast of the existing Blackhillock substation to the substation site. This access will involve upgrading and extending an existing track and this requires land outside the PPP red line boundary; and
- Additional construction access point (identified as AP23).

Since the PPP application, which considered options for exporting electricity both as high voltage alternating current (HVAC) and high voltage direct current (HVDC), it has been confirmed that the electricity generated by the Wind Farm will be transmitted as HVAC. Further information is also provided on Horizontal Directional Drilling (HDD) locations, the construction access points and construction compounds. DPP is being sought to encompass the full extent of the works now being proposed.

Environmental effects of the Development have been studied systematically through the EIA process and the results presented within the ES are summarised in this NTS. These documents inform readers of the nature of the Development, likely significant environmental effects, and measures proposed to protect the environment during the construction, operational and decommissioning phases.

The Development substation is located in proximity to the existing Blackhillock NETS substation. SHE-T, owners of the existing Blackhillock substation, have obtained planning permission for the redevelopment of the existing AC substation to include 400 kV, 275 kV and 132 kV capacity, and are also planning a high voltage direct current (HVDC) converter station, 400kV and 132kV switchgear buildings, and control room and storage facility. The existing AC substation at Blackhillock will continue to operate until the new SHE-T AC substation is built, but at which point it will be decommissioned and removed.

An underground transmission cable, part of the Caithness-Moray Transmission Link and leading to the HVDC converter station, will be developed by SHE-T from Blackhillock to Portgordon. The Caithness-Moray cable route follows largely the same route as the Development cable route and at seven locations the cables will cross one another. Following discussions between BOWL and SHE-T it is the current understanding that the Caithness-Moray cable will make landfall to the east of the landfall proposed by the Development. As of January 2015, SHE-T intend to commence work on the underground cable between Blackhillock and Portgordon in 2015.

The ES considers the potential effects of the Development in combination with the SHE-T Projects.

2 POLICY BACKGROUND AND THE NEED FOR THE SCHEME

There are numerous climate change, renewable energy and land-based planning policies relevant to the Development at an international, national, regional and local level. Climate change and the need to reduce carbon emissions underpin these policies and planning policy has been designed to support and deliver a move to low carbon energy production.

At an international level, obligatory targets were set by the United Nations to reduce greenhouse gases for those countries that committed to the Kyoto Protocol. Through this Protocol, the UK committed to reducing greenhouse gas emissions by 12.5% from 1990 levels by 2012. The 2009 Renewables Directive raised this target to 15% by 2020.

Various policies have been published at a national policy level in line with European policy objectives. The UK Renewables Obligation objective was to ensure that renewable sources contributed 10% of UK electricity supply by 2010. The Renewables Obligation Scotland Order (ROS) was amended in April 2011 to reflect a new target of generating the equivalent of 100% of Scotland's gross annual electricity consumption by 2020 from renewable sources. The UK Renewable Energy Roadmap 2011

notes that the development of offshore wind farm sites is critical to achieving the capacity to reach the 2020 target of 15% of UK electricity consumption from renewable resources.

The Scottish Government has its own renewable energy targets. The current targets for renewable energy generation under The Climate Change (Scotland) Act 2009 are:

- At least 30% of all energy demand from renewables by 2020;
- An output equivalent to 100% of Scotland's demand for electricity to be met from renewables by 2020 with an interim target of 50% by 2015; and
- Seeking transmission system upgrades and increased interconnection capable of supporting the projected growth in renewable capacity.

The Scottish Government Renewables Action Plan (2009), updated in 2012, sets out the Scottish Government's key objectives to meet its targets for renewable energy. Objectives include continued development of offshore wind technologies, planning and investing in the necessary grid infrastructure for connecting proposed offshore wind developments, and ensuring the development of Scotland's offshore wind complements Scotland's marine environment.

The Scottish Government's Electricity Generation Policy Statement 2013 sets out the Scottish Government's position on the role of both renewable and fossil fuel thermal generation (coal, gas, oil) in Scotland's future energy mix and considers the changes which will be necessary to meet the targets set by the Scottish Government. It gives clear direction on the need for rapid expansion of renewable energy across Scotland, as part of a balanced energy mix, in order to achieve a secure source of electricity supplies and make the transition to a low carbon economy.

Scottish Government land based planning policies which are relevant to the Development are contained in:

- Scotland's National Planning Framework 3 (NPF3) (June 2014); and
- Scottish Planning Policy (SPP) (2014).

NPF3 stresses the Government's desire to capitalise on Scotland's wind resource and acknowledges an expectation that the pace of onshore wind energy development will be overtaken by a growing focus on Scotland's significant marine energy opportunities; including deployment of offshore wind energy development in the Moray Firth.

SPP sets out the Scottish Government's overall policy for land use planning. SPP acknowledges that the Scottish Government's commitment to increasing the amount of electricity generated from renewable sources is a vital part of the response to climate change.

The current Scottish Government Economic Strategy (2011) includes a commitment to the development of a low carbon economy and renewable energy industry. One of the document's key aims is to decarbonise electricity generation by 2030. Opportunities exist under the low carbon economic strategy across the whole Scottish economy for business and industry. Within the context of

the low carbon transition for Scotland's economy, the strategy sets out the Scottish Government's ambition and immediate actions to increase the value of our low carbon environmental goods and services sector (LCEGS) to more than 10% of the Scottish economy by 2015. This sector includes renewable energy, environmental management and low carbon technologies.

The Development lies entirely within TMC's administrative area and as such TMC will assess the Development against their Development Plan which comprises:

- The Moray Structure Plan (approved in April 2007) (the Structure Plan);
- The Moray Local Plan (adopted in December 2008) (the Local Plan); and
- The Moray Local Development Plan, due for adoption in 2015.

The Structure Plan sets out the overarching strategy for development in TMC area. Importantly, the Structure Plan gives general support to renewable energy development through promoting opportunities for the sensitive development of renewable energy and promoting renewable energy in new development.

The Local Plan interprets the strategic policies established within the Structure Plan into detailed site specific policies and requirements to be applied by TMC when making decisions on planning applications. It offers broad support to renewable energy developments based on the appropriate mitigation of environmental variables.

A new Moray Local Development Plan (LDP) is in the course of preparation and will replace the Moray Structure Plan 2007 and the Moray Local Plan 2008. The LDP will provide a single forward planning document that presents a vision and spatial strategy for directing growth in Moray for the next 10 – 20 years.

TMC submitted the LDP for examination on 26 September 2014, following consultation. A Reporter has been appointed by the Scottish Ministers to carry out an examination of the LDP and the Reporter's findings are anticipated around June 2015. Once the Reporter's findings have been incorporated into the adopted Plan and agreed by TMC the LDP is likely to become a material consideration in determining planning applications until it becomes the adopted plan. Therefore the policies of the proposed LDP have also informed the technical assessment in the ES.

3 EIA PROCESS AND METHODOLOGY

An EIA for the Development has been carried out in accordance with the EIA Regulations.

Environmental assessments have been carried out to identify any effects that may be significant in terms of the EIA Regulations. Where possible, potentially significant effects have been identified at an early stage and their avoidance or minimisation has been prioritised at the design stage. This is referred to within the ES as 'embedded mitigation', i.e. mitigation that is embedded within the design of the Development.

Mitigation, beyond that embedded in the design of the Development has also been considered and proposed to, where possible, prevent significant residual effects, i.e. the effects of the Development that remain assuming the successful implementation of the identified mitigation measures.

In accordance with the EIA Regulations, the assessment has also considered cumulative effects. By definition these are effects that result from cumulative changes caused by reasonably foreseeable actions together with the Development.

4 CONSULTATION

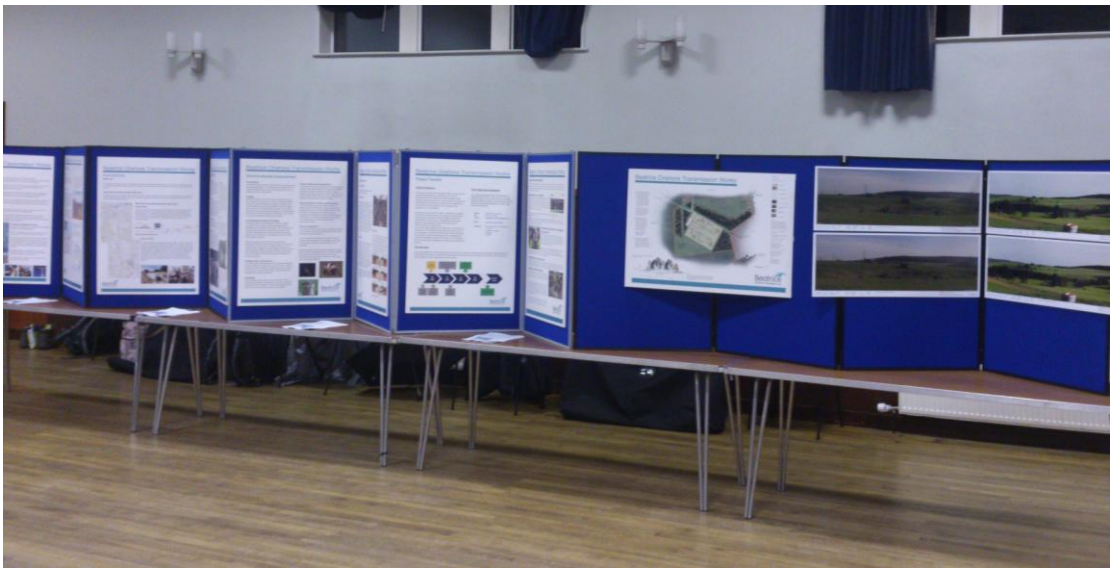
Consultation was undertaken throughout the EIA process for both the PPP ES and DPP ES. In support of the planning application, a stand-alone Pre-Application Consultation (PAC) Report was

prepared which reports in detail the process and outcomes of the consultation carried out for the Development.

EIA Scoping was carried out for the Development as part of the wider transmission works Scoping Report (i.e. for both the offshore and onshore transmission works). The purpose of Scoping is to outline the Development to key stakeholders so that their comments can be incorporated into the EIA process.

Since the PPP ES the Development has not be subject to a new formal scoping exercise. Instead it was agreed with TMC that targeted consultation would be undertaken with selected consultees.

In support of the Development, a number of public exhibitions took place that were designed to provide an opportunity for the public to ask questions, understand the proposals and provide feedback. The most recent exhibitions in November 2014 explained the changes to the Development since the PPP application. Full details of the exhibitions are detailed in Chapter 4: Consultation of the ES (Volume 1) and in the PAC Report.



Consultation will continue between BOWL, decision makers and stakeholders throughout the EIA process. BOWL is committed to ensuring stakeholders, including members of the public, are kept informed of progress before and during the construction phase, as well as on commencement of operation.

5 SITE SELECTION AND CONSIDERATION OF ALTERNATIVES

This EIA has considered the use of alternative sites, alternative designs and the 'no development' alternative. Alternatives have been evaluated on the basis of technical, engineering and environmental constraints identified during the design and EIA process. This process is reported in Chapter 5: *Site Selection and Alternatives* of the ES (Volume 1).

The site selection process for the Development was undertaken to establish the optimum cable landfall location and subsequent cable route options to potential onshore grid connection/ substation sites. Further design options to be considered were concerned with the method of electricity transmission (AC or DC), and therefore the type of substation required, and the routing of the permanent access track to the substation site.

In order to connect to the NETS the Wind Farm requires a dedicated AC substation to convert electricity generated from the Wind Farm to a higher voltage suitable for onward transmission. All available NETS substations on the mainland, within approximately 40 km of the coastline of the Moray

Firth, were identified as potential grid connection points. Of these, five existing substations were considered. The decision on the connection point took into account the location of these substations, and the possible cable routes and landfall points required to connect to them. A potential 13 cable route options were considered between the Wind Farm and the five potential connection points.

Landfall options were considered on environmental merit, distance from substation, proximity to centres of population and technical feasibility. Five landfall options were assessed which resulted in land to the west of Portgordon being chosen as the preferred option, despite being part of Spey Bay Site of Special Scientific Interest (SSSI). Consultation with Scottish Natural Heritage (SNH) recommended mitigation in the form of HDD beneath the SSSI to minimise the effects on the SSSI. The other landfall options were rejected due to having greater impacts on landscape and visual, cultural heritage, ecological or human receptors.

The cable route links the landfall point to the substation. The cable route was identified and designed by taking into consideration technical, physical, social and environmental constraints. An indicative cable route was proposed in the PPP ES however following detailed engineering investigations this has subsequently been altered for the DPP application as follows.

- Alteration of the cable route south of the landfall site, at a crossing of the Burn of Tynet, due to concerns over the potential impact on a shallow aquifer that is used for water abstraction. The alteration extends for approximately 1.8 km of the cable route.
- Reduction in the width of the cable route corridor from approximately 1,000 m to between 50 m and 70 m;
- Identification of HDD locations;
- Identification of all temporary working areas including twenty six site access points and ten construction compounds;

The consideration of the landfall and cable route options led to the choice of Blackhillock as the connection point. This was due to its relatively short cable route, relative lack of environmental constraints and designations and lower onshore grid constraints compared to the alternatives examined.

It is a requirement for the Development substation to connect into the upgraded Blackhillock NETS substation. In considering the location of the Development substation, nine potential locations for the substation were identified along the cable route. These were assessed in terms of landscape sensitivity, proximity of residential properties, proximity of cultural heritage assets, access, and visibility. Two locations were identified as preferred options. Further electrical engineering considerations highlighted the importance of being in close proximity to the NETS Blackhillock substation and further environmental and engineering considerations determined the preferred location.

The location of the substation remains unchanged since the PPP ES however, the design and layout of the electrical equipment within the substation boundary has been further refined. Most notably the substation is now going to be constructed on a single gradient slope with relatively minor earth works required opposed to the tiered design presented within the PPP ES.

Given the topography of the substation site, an earth bund will be constructed around the substation in order to provide screening. The bund will be planted with vegetation and trees which will in time grow to partially screen the substation. The bund, approximately 1.5 m in height, will extend along the full length of the northeast edge, and along part of the northwest edge of the substation site. Planting will be with specimens not exceeding 1.7 m in height. After 15 years growth the species will have matured and, given typical growth rates, will be up to approximately 8 m high. The planting, together with the bund, will provide partial screening of the substation and filtering of views from the north, west and east.

The substation site requires a new permanent access. The access would be used for abnormal loads and for the main construction traffic at the substation site. This route would be required to facilitate the delivery of abnormal loads associated with the substation construction, which will be heavy and wide, and as such the access track requires to be designed to accommodate the anticipated loads.

As part of the PPP ES consideration was given to upgrading Denwell Road (N), from the A96 trunk road to the north, and the existing access track. Since the PPP ES, and following further engineering studies, it is considered that the upgrade of Denwell Road would result in excessive land take and construction impacts on local properties.

As a result of this an alternative access option has been considered that will run from the U43H Denwell Road (S), southeast of the existing Blackhillock substation, to the Development substation site. This route makes use of an existing high specification junction onto the A96 trunk road and the upgraded road to Blackhillock used by SHE-T for their Blackhillock substation upgrade works. This route has a more favourable gradient and has less of an impact on the public road network.

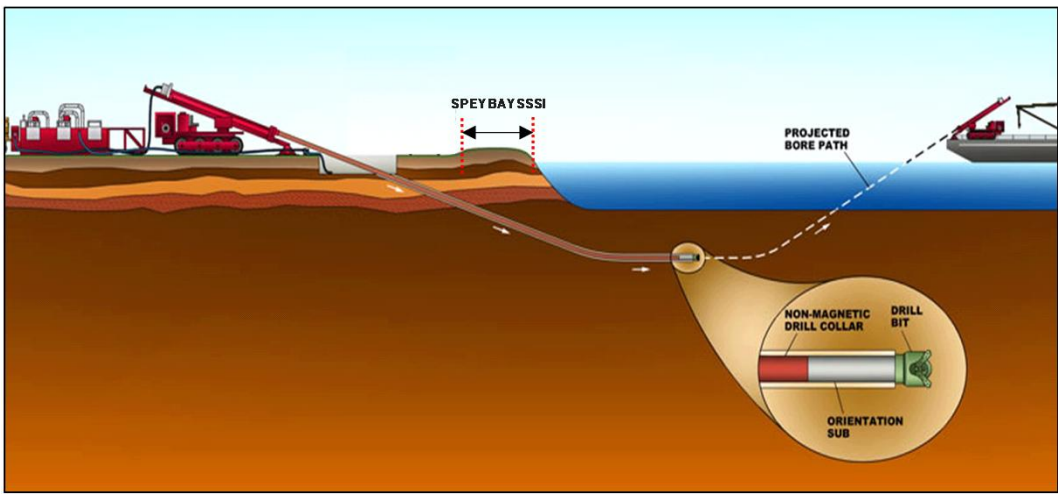
6 DEVELOPMENT DESCRIPTION

The Development comprises all of the onshore elements required to connect the Wind Farm to the NETS. The ES describes and assesses the Development under four main headings: the Landfall, the Cable Route, the Substation and Access. The Development contains the following elements:

- Landfall;
- Cable Route;
- Substation; and
- Access.

6.1 LANDFALL

The landfall works will involve the pulling ashore of the offshore cables to connect with the onshore cables in transition bays. The cable will be pulled through underground drilled ducts using a technique known as horizontal directional drilling (HDD).



A temporary working area/ compound will be required at the landfall site along with a temporary construction vehicle access during construction works.

The underground ducts which the cable will be pulled through will be formed using HDD. The use of HDD will protect the integrity of the SSSI and ensure that the offshore cables make landfall with minimised environmental effects. Two cable ducts will be required to take the two cable bundles.

The HDD works will involve drilling an arc between two points, known as the launch site and receiving site, to pass up to 30 m underneath the SSSI. The launch site will be on shore and the receiving site will be offshore. The effects of the receiving site have been assessed in the Wind Farm ES and are not assessed in this ES.

Following the completion of the HDD works, reinstatement work will be undertaken and all temporary equipment removed.

Onshore transition bays are required to join the offshore export cable to the onshore cables. These are reinforced concrete lined underground chambers with surface access. There are two export cables requiring two onshore transition bays which will be located adjacent to each other.

The construction of the transition bays is likely to involve:

- Excavation of the transition bay chambers;
- Construction of the concrete chamber walls utilising shuttering and reinforced concrete;
- Back filling areas around the transition bay; and
- Removal and disposal of any surplus excavated material.

The landfall working area will be located on agricultural land and will include a contractor's compound. The compound will have welfare facilities, site offices and the storage of plant and machinery.

Adjacent to each transition bay there will be a link box. Link boxes are used at cable joints and terminations to provide easy access for cable testing and fault location purposes. Link boxes will require a number of surface level access covers. The area around the transition bays will be backfilled upon completion of the jointing works, but permanent access will be required to the link boxes during the operational lifetime of the Wind Farm for maintenance purposes.

6.2 CABLE ROUTE

The cable route from the landfall site to the substation, approximately 18.5 km in length, is shown on NTS Figure 1. The majority of the cable route passes through agricultural land under arable and pastoral cultivation. The precise location of the cables within the cable route will be subject to further detailed design and feasibility assessment.

The maximum permanent cable route width required will be 13 m. For the majority of the route a maximum 30 m wide temporary working area will be required along the length of the cable route (known as the cable corridor). However, in some localised areas where HDD works are needed this corridor may increase to up to 40 m.

The cable corridor will comprise:

- A set of two trenches with a total maximum width of 13 m;
- Construction access for vehicles;
- Spoil storage areas;
- An allowance of 2 m on either side of the works for site drainage; and
- Fencing.

Cable is typically supplied in lengths of 1,000 m, and as such 20 cable joints will be required along the approximately 18.5 km cable route to join these sections. The individual cable lengths will be joined together in jointing bays approximately every 900 m along the route. The location of these have been positioned so as to minimise construction effects and any ongoing maintenance impacts.

Onshore HDD is required for crossing obstacles where open cut trenching is impractical. Six locations requiring HDD activities along the cable route have been identified and include roads, railway lines and water courses.

Construction of the cable route required one main temporary construction compound serving the cable route activities, along with a further seven satellite construction compounds along the cable route.

A total of 26 construction access points are proposed along the cable route.

6.3 SUBSTATION

Since the PPP ES it has been confirmed that the electricity from the Wind Farm will be exported as HVAC and as such the Developments substation will also be HVAC.

The substation site is situated approximately 1 km to the south of Keith as shown on NTS Figure 1. The substation site covers a total area of approximately 13.8 ha (including landscaping areas), while the substation building comprises an area of approximately 4 ha, of which a maximum of 35% will consist of impermeable areas, equating to approximately 1.4 ha. The site is currently used for agricultural purposes.

The substation will be constructed on a single gradient slope with relatively minor earth works required opposed to the tiered design presented within the PPP ES.

Given the topography of the substation site, an earth bund will be constructed around the substation in order to provide screening. The bund will be planted with vegetation and trees which will in time grow to a sufficient height to partially screen the substation. The bund, approximately 1.5 m in height, will extend along the full length of the northeast edge, and along part of the northwest edge of the substation site.

The substation has been designed to a scale appropriate for the capacity of the Wind Farm and the visible components will mainly be wires. The substation will have a maximum height of 11.5 m and an associated control building with a maximum height of 6 m.

The main components associated with the substation are:

- Control Building;
- Ancillary Buildings;
- Transformers and Transformer Coolers;
- Reactors and Reactor Coolers;
- High Voltage Switchgear; and
- Harmonic Filters.

These components are all external components. The control building will house power electronics, cooling, telecommunications, protection and control equipment, and a battery room.

6.4 ACCESS

A new access point and track is included in the DPP application to enable construction of the substation site. The access track will run from the U43H Denwell Road (S), to the southeast of the existing Blackhillock substation, to the Development's substation site.

The route utilises the U43H Denwell Road (S) up to the entrance to the new Blackhillock substation. It is not anticipated that further alteration work would be required on the public road which has already undergone localised widening associated with the adjacent SHE-T Blackhillock Expansion Project.

Where the access road follows the route of the SHE-T project's access no additional works are required as the access road has been designed to accommodate AIL movements, construction traffic and permanent access already.

The route then follows the line of the existing forestry track which will require widening and upgrading

6.5 CONSTRUCTION PROGRAMME

The following construction timescales are anticipated for the Development:

- Landfall works – up to 9 months;
- Cable Route – 18 months; and
- Substation – 18 months

Some of these activities will overlap and it is anticipated that construction of the Development will take place over a maximum period of 21 months, although construction activities will not be continuous over this period in any one location.

Generally site working hours will be from 0700 to 1900 in the Summer and 0730 to 1730 in the Winter, Monday to Friday. Saturday working hours will be limited to 0700 to 1300.

Night work may be required in special circumstances (e.g. during delivery of transformers or during HDD and cable jointing activities) and approval for any additional working hours will be sought from the TMC at the appropriate time.

7 ECOLOGY AND ORNITHOLOGY

An assessment of the effects upon ecology and ornithology has been undertaken. The assessment considered the following:

- Designated sites;
- Habitats;
- Protected species; and
- Ornithology.

The assessment only considered effects during the construction phase of the Development. Operational effects have been scoped out of the assessment as the effects are likely to be negligible. Decommissioning effects have also been scoped out of the assessment as they are likely to be of a similar nature to construction effects, but of a smaller scale and shorter duration.

There are a number of designated sites within the study area however no significant effects are predicted upon these as a result of the Development.

There are a number of habitats within the study area, these include farmland, woodland, watercourses and meadow. There are no significant effects predicted upon any of these habitats as a result of the Development.

There is suitable habitat for otter, badger and bats within the study area. The only potential significant effect predicted on protected species is badger disturbance during HDD activities; there are no predicted significant effects upon the other species as a result of the Development. Following the badger mitigation which is proposed (pre-construction survey, development of a badger mitigation strategy, no unlicensed work within 50 m of a badger sett and construction measures) no significant residual effects will remain.

There are a number of birds using the study area for breeding, roosting and foraging. There are no significant ornithological effects predicted as a result of the Development.

There are no predicted cumulative effects.

8 LANDSCAPE AND VISUAL

An assessment of the landscape and visual effects of the Development was undertaken. The assessment considered effects during construction, on completion, and after 15 years upon maturity of landscaping planting, for a 5 km zone around the substation site and a 500 m corridor either side of the cable route.

For the landfall and cable route effects are predicted within 200 m during construction phase only. For the soft coastal shore character area the effects are significant for the upland farmland and coastal farmland character areas the effects are not significant.

The substation site lies within an Upland Farmland landscape character area. During construction and on completion no significant effects will occur. 15 years after completion, proposed landscaping mitigation will assist in further integrating the substation into the existing landscape setting reducing the significance of the effect.

There will be no significant effects on designated landscapes.

Visual effects resulting from the construction of the cable route will be almost entirely confined to individual houses along the A990 and the small hamlet of Clochan where effects are predicted to be significant; permanent effects however will not be significant.

No significant effects are predicted on recreational routes or roads and rail as a result of the construction of the landfall site or cable route.

One recreational route that runs through the substation site will experience significant effects both during construction and operation of the substation and the permanent access. No other recreational routes will be subject to significant effects.

There will be no significant effects on settlements resulting from the substation or permanent access, the most affected will be the dispersed settlement immediately north of the substation. The greatest effects occurring at Keith, the largest settlement in the study area will be slight.

There will also be no significant effects on roads and rail routes resulting from the substation or permanent access. The greatest effects will occur on roads immediately to the north that coincide with the dispersed settlement here.

Overall, relatively few significant visual effects have been assessed as a result of the substation element of the Development. This is in part due to the presence of existing transmission infrastructure and the extensive Blackhillock Expansion Project providing the existing context for this type of development. It is also enhanced by the landscape context of the substation being frequently seen set against a backdrop of commercial forestry or being only partially visible.

9 ARCHAEOLOGY AND CULTURAL HERITAGE

An assessment of the effects of the Development upon archaeology and cultural heritage has been undertaken. The assessment, comprising desk-based study and walkover survey, has been undertaken to identify cultural heritage assets such as listed buildings and conservation areas that may be affected by the construction and operation of the Development.

There are numerous recorded assets within the cable corridor reflecting the fact that the general area has seen activity throughout history and that the geology and agricultural regime is conducive to the formation of cropmarks, facilitating the identification of later prehistoric assets that would otherwise be unrecorded. There is an appreciable concentration of recorded archaeological assets near the coast and the potential for unrecorded archaeology to be present within the cable corridor is considered high. Elsewhere along the cable corridor, and at the substation site, this potential is considered moderate.

None of the archaeological assets identified are of national importance or designated and it is unlikely that any unrecorded assets of national importance are present. Consequently, preservation by record is an appropriate strategy. Following implementation of this strategy all residual construction effects will not be significant; the physical loss of subsurface features being offset by the realisation of their value as sources of data.

Two Keith Conservation Areas lies to the north of the substation site. Glimpsed views along its streets of the hills to the south are important to its setting. Effects upon its setting have been mitigated through design, including soft landscaping, and the effect is considered to be not significant.

No significant cumulative effects have been identified.

10 GEOLOGY, SOILS AND LAND USE

A desk-based study of geological, soils and land use data has been carried out in order to identify potential resources that may be affected by the Development and establish their current condition.

The only known site designated for its geomorphological features within the study area is Spey Bay SSSI. The landfall area is located within this designated site although HDD is proposed beneath the SSSI to protect the integrity of the SSSI and ensure that activities to get the offshore cables on to land will not give rise to any significant effects on the designated site.

There are no other known ground features of significance for their geological importance or sites designated as geological SSSIs in the study area which the Development is likely to have an effect upon.

Predicted effects associated with disturbing contaminated land are predicted to be not significant.

Implementation of good practice measures will ensure that any effects to soils are minimised but in any case predicted effects on soils are predicted to be not significant.

Predicted effects associated with agricultural land loss are predicted to be not significant.

No significant cumulative effects have been identified.

11 NOISE AND VIBRATION

An assessment of the noise and vibration impact of the Development has been carried out. Potential effects have been assessed in accordance with British Standards (BS) and other relevant guidance. The effects of noise and vibration from the Development were considered for the closest noise sensitive receptors, for example residential properties.

Noise effects of general construction works at the landfall and substation sites, and noise generated by construction traffic, are expected to be not significant at the nearest receptors, and as such no other mitigation is proposed other than the measures provided in the Construction Environmental Management Plan (CEMP) (Annex 3B of the ES). Whilst significant effects are predicted to arise from general construction works along the cable route at the closest receptors, works will have a short duration and the overall effects from these activities are considered to be not significant.

Noise effects of HDD activity during construction, both at the landfall site and along the cable route, have the potential to be significant at nearby receptors depending upon the timing of the works. Where possible, the works will be sited with adequate separation from the nearest receptor to avoid the impact, or the contractor will employ mitigation such as acoustic barriers or enclosures for the plant, and as such residual effects will be not significant.

During the construction phase, the cumulative effects of construction noise with the SHE-T Projects will be not significant.

During the operational phase of the Development, the most substantial source of noise will be from the substation with negligible noise sources associated with the landfall and cable route. Operational noise effects were assessed in accordance with guidance contained in BS 4142 (1997) *Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas* and using criteria agreed in consultation with TMC. Operational noise levels were predicted and assessed against the agreed noise criteria. Operational noise from the Development substation, when considering the in combination effects of the SHE-T Blackhillock Expansion Project, has the potential for a significant effect at a single property. However, this will be mitigated by the further design of the substation equipment to be installed at the site to ensure compliance with noise limits set by planning condition.

Noise effects of the decommissioning phase are expected to be similar to the general construction works, and therefore minor to negligible and not significant

The Development is not expected to generate significant levels of vibration at the identified receptors and as such was scoped out of the assessment.

Plant associated with HDD and general construction activities involved in construction of the Development are unlikely to be perceptible at the nearest receptors. During HDD works, and should the Environmental Health Department of TMC consider it necessary (such as in the event of a complaint), vibration monitoring will be undertaken at appropriate locations agreed with TMC to confirm that no significant vibration effects are experienced at nearby properties.

12 HYDROLOGY

An assessment was undertaken in respect of the Development on the hydrological resource.

The hydrology assessment comprises the results of a baseline desk-based assessments and walkover surveys in order to identify all potential water resource assets within the study area during the construction, operation and decommissioning phases of the Development. There are a number of mitigation measures embedded in the design of the Development as set out in detail in the Construction Environmental Management Plan, provided in Annex 3B of the ES.

The assessment considered the effects of the Development upon river catchments, surface hydrology, hydrogeology, flood storage, Groundwater Dependent Terrestrial Ecosystems (GWDTES), designations, fisheries and resources used for private water supplies.

Potential effects identified include chemical pollution, erosion and sedimentation, impediments to flow, hydrological function of GWDTEs, changes in soil interflow patterns, compaction of soil, increase in run-off and flood risk, effects on private water supplies, and effects on Spey Bay SSSI.

After taking the embedded mitigation into consideration, no significant effects are predicted upon any of the aforementioned hydrology resources as a result of the Development.

No significant cumulative effects have been identified.

13 ACCESS, TRAFFIC AND TRANSPORT

An assessment of the Development was carried out with regard to access, traffic and transport. This assessment examined the effects of the Development on the existing traffic on the roads in the vicinity of the Development, due to traffic generated by the Development during construction. Traffic levels during the operational period were expected to be very low and decommissioning effects were not assessed given the uncertainties over future baseline conditions. As such an assessment of operational and decommissioning effects was scoped out of the assessment.

Effects assessed included traffic flows and movements, accidents and safety, driver delay, dust and dirt, pedestrian amenity and delay and severance. Routes to and from the site and data on traffic in the vicinity of the Development were identified through desk study and site visits.

During construction, traffic generated by the Development was predicted to be not significant. The CEMP will manage the potential for vehicles to create dirt and dust, and to manage accidents and safety when arriving and leaving the Development site. A Traffic Management Plan (TMP) will manage the construction traffic on the public highway.

Traffic volumes associated with both the landfall works and cable route would be very low. Construction of the substation is estimated to be the highest traffic generator and is forecast to generate an additional 86 vehicle movements per day in the worst case month of construction which equates to 9 trips per hour (4.5 inbound trips and 4.5 outbound trips). This effect is not considered to be significant.

No significant cumulative effects have been identified.

14 SOCIO-ECONOMICS, TOURISM AND RECREATION

The effects of the Development on the local economy, including tourism effects, as well as the direct effect of impacts on recreational assets has been considered. Receptors were identified through desk

study, and included local businesses with the potential to win work on the Development, job creation, tourism and recreation activities, and footpaths and cycle paths in the vicinity of the Development.

Businesses have the potential to win work on the Development, and the Development will create a number of job opportunities, which could result in a moderately beneficial effect on the local economy during construction and decommissioning, which is significant, with a more modest negligible positive effect during operation, which is not significant.

No tourism assets in the vicinity of the Development are expected to be affected by the Development. The assessment considered the impacts on the Speyside Way Long Distance Route (LDR), National Cycling Route (NCR) 1 and the Isla Way footpath, as well as a number of Core Paths in the area. These have the potential to be affected on a temporary basis during construction, where the routes may be partially closed off while construction work for the cable crossings is undertaken. However, access will be maintained, diversions or traffic management put in place, and so no significant effects are predicted.

Significant positive economic benefits are predicted, for the Development in isolation and cumulatively with the SHE-T Projects, to the local area and job creation arising during the construction and decommissioning phases.

15 OTHER ISSUES

An assessment has also been undertaken of the effects of the Development upon other issues not covered elsewhere in the ES, where a desk based assessment was conducted to ascertain the baseline conditions. This assessment examines the effects upon the following:

- Gas Pipelines;
- Electrical Infrastructure;
- Water and Wastewater Infrastructure;
- Telecommunications Infrastructure;
- Electromagnetic Fields (EMF);
- Health and Safety; and
- Air Quality.

Effects on existing infrastructure due to excavations during construction will be managed through further investigations of the location of infrastructure and then mitigation by avoidance, protection during construction, or HDD crossings, and as such will result in a negligible impact.

EMF effects are not predicted outside the boundary of the substation and are not predicted for the cable route given the burial of the cable. The effects will therefore be negligible.

Health and safety will be managed during construction and operation as per legislative requirements and best practice. Relevant activities will also be covered in the CEMP and as such any effects will be negligible.

Air emissions from equipment and vehicles during construction will be managed through the CEMP and will also be negligible. There are no significant sources of air emissions during operation.

This assessment has concluded that there are no unacceptable effects upon any of the aforementioned matters during the construction, operational or decommissioning phases of the Development.

No significant cumulative effects have been identified.

16 SUMMARY

Significant residual effects are those effects that are assessed as remaining significant, in terms of the EIA Regulations, following the implementation of identified mitigation measures. The significant residual effects associated with the Development are summarised below.

Significant positive residual effects, in terms of the EIA Regulations, are predicted in terms of the positive economic benefits to the local area and job creation arising during construction and decommissioning.

In terms of the EIA Regulations, significant adverse landscape effects are predicted on the soft coastal shore landscape character area, arising from construction activities within 200 m of the landfall works and cable route. Significant adverse visual effects are predicted on individual houses along the A990 and the small hamlet of Clochan as a result of construction of the cable route. However, such effects are short term and temporary only during the construction phase. Significant adverse visual effects, during both the construction and operational phases, are predicted on one recreational path that currently runs through the substation site, which will be diverted along the substation boundary.

No significant adverse residual effects, in terms of the EIA Regulations, are predicted on the ecology and ornithology, archaeology and cultural heritage, geology, soils and land use, noise and vibration, hydrology, tourism and recreation or other issues.