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4th May 2018

Please quote [redacted] on all correspondence

Dear Sir/Madam,

Environmental impact assessment scoping report for Development of a new underground High Voltage Direct Current power cable transmission link between Normandie (France) and the South Coast, including fibre optic data transmission cables and the erection of converter stations. at Land South Of Lovedean Electricity Sub Station Broadway Lane Lovedean Waterlooville Hampshire

Further to your formal request I hereby enclose the Scoping Opinion that will inform the Environmental Statement. The Scoping Opinion has now been formally adopted by the Council.

If you have any further queries please contact the case officer, whose details are at the top of this letter.

Yours faithfully

Julie Pinnock BA (Hons) MTP MRTPI
Head of Development Management

Enc.

SCOPING OPINION – Development of a new underground High Voltage Direct Current power cable transmission link between Normandie (France) and the South Coast, including fibre optic data transmission cables and the erection of converter stations.

TOWN AND COUNTRY PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS 2017

WINCHESTER CITY COUNCIL'S FORMAL SCOPING OPINION ON THE SCOPING REPORT SUBMITTED BY WSP ON BEHALF OF WSP

THIS SCOPING OPINION SETS OUT WHAT INFORMATION SHOULD BE INCLUDED IN AN ENVIRONMENTAL STATEMENT TO BE SUBMITTED WITH THE PLANNING APPLICATION FOR Development of a new underground High Voltage Direct Current power cable transmission link between Normandie (France) and the South Coast, including fibre optic data transmission cables and the erection of converter stations.

Appendix A – Winchester City Council's Scoping Opinion

1. Introduction

Note: *The Council has complied with the request to provide a scoping opinion on a without prejudice basis and in so doing does not necessarily accept or imply that the development described above accords with the policies of the Development Plan.*

SCHEDULE 1

2 Location of Development

2.1 In accordance with the regulations, the request for the scoping opinion is accompanied by a plan which identifies the land to which the scoping opinion relates. This is included within the applicant's scoping report at Figure 2.

2.2 The applicant has yet to determine the precise location of the UK converter station and has presented 2 options at this stage. The site the subject of this scoping opinion would be located to the north east of the village of Denmead within the administrative boundary of Winchester City Council. This site is known as Option B for the purposes of this report. Option A relates to a site located to the north west of the village of Lovedean within the administrative boundary of East Hampshire District Council. Both sites lie adjacent to the existing National Grid Lovedean electricity substation. The proposed cable route will travel through the administrative boundary of Winchester City Council, East Hampshire District Council, Havant Borough Council and Portsmouth City Council. The cable route will reach its proposed landfall location at Eastney, a district in the south-east of the Portsmouth.

2.3 Option B is situated on agricultural land approximately 200m west of Lovedean electricity substation and would span across six small fields divided by hedgerows and used for horse grazing and off road vehicles. Land falls from approximately 90 to 80m AOD. A new access route would connect the proposed substation with Broadway Lane to the east and either run to the north or south of the existing substation. The Council's Scoping Opinion covers this site.

2.4 Option A is agricultural land in a generally open, rural landscape situated approximately 400m to the south of Lovedean electrical substation and approximately 300m west of Boundary Lane. Option A lies to the south of Lovedean substation within an arable field. Gradients slope gently north south from approximately 80 to 70m AOD. The south west corner of the site would lie to the north of a deciduous copse whilst the eastern edge of the site would run adjacent to Broadway Farm. An access road would connect the proposed converter station to Broadway Lane.

2.5 The South Downs National Park (SDNP) borders Lovedean substation and the proposed converter station, its border set back to the north and west and within 50m to the east. The Hambledon Conservation Area lies within the SDNP to the northwest of the substation while Catherington Conservation Area lies to the north east. A number of Listed Buildings predominately Grade II lie within Lovedean, Denmead, Hambledon and along the narrow lanes mainly to the east of the substation, with the closest being at Denmead Farm, off Edneys Lane.

2.6 The proposed converter substation is bordered by pockets of woodland including Ancient Woodland. The SDNP has been given the status of an International Dark Skies Reserve.

2.7 The National Character Area Profiles (NCAPs), as defined on the National Character

Areas Map of England (Natural England) indicates that proposed converter station land lies within NCA 125 The South Downs. The NCA describes the landscape as one of contrasts, the downland creating a sense of openness whilst enclosure and remoteness is evident within woodlands and close to urban areas.

2.8 At a County level the proposed converter station options lie within LCA 7H South East Hampshire Downs (Hampshire County Integrated Character Assessment, 2012 refer). The landscape is "a large scale downland" and predominate "landscape type, typical with expansive, rolling arable landscapes and extensive wooded visual horizons".

2.9 Site Option B falls LCA 17 Hambledon Down, Winchester Landscape Character Assessment, 2004 (WCCLCA). It is agreed that although the options lie within different administrative areas, their key characteristics are similar. Characteristics of relevance to both preferred options and their immediate surroundings, and drawn from the above landscape character assessments and the description as set out in the Scoping Report at para 8.1.7.

2.10 The Scoping report acknowledges that whilst the preferred options do not fall within the SDNP, consideration needs to be given to the special qualities of the South Downs which is the "diverse, inspirational landscapes and breath taking views". Equally due regard should be given to the following points referred to within the South Downs Integrated Landscape Character Assessment, 2011: *"the strong rural , secluded character of the landscape which may be threatened by expansion of settlements which abut its southern edge,* and *the views southwards across downlands from the secondary hills at Windmill Down, Broadhalfpenny Down and Home Down "approximately 2.5km to the north".*

3 Description of the Proposed Development

3.1 In order to facilitate the HVAC cable connection between the existing National Grid Lovedean substation and the new HVDC power converter station, there will be a requirement to extend the existing outdoor electrical infrastructure which exists within the National Grid substation. All works to extend the outdoor electrical infrastructure will take place within the National Grid fence compound. Agreement will be sought with the LPAs with respect to the proposed scopes and assessment methodologies given the applicant's scoping report

3.2 A new HVDC converter station (hereafter referred to as the 'proposed converter station') is proposed adjacent to the existing National Grid substation in Lovedean, Hampshire. The proposed converter station will be less than 2km from Lovedean substation and will be connected by two 400kV underground cable circuits running through fields. Currently two site options are under consideration: Option A and Option B, both of which are located within the indicative site boundary. The closest village to the locations for the proposed converter station is Lovedean, approximately 1.3km to the south-east. There are some residential properties, including a small cluster of approximately five properties on Broadway Lane, approximately 0.3km to the east of the proposed converter station. Roads surrounding the proposed converter station include Broadway Lane to the east and Old Mill Lane to the west.

3.3 A typical layout for a converter station is illustrated in the Scoping report at **Inset 2.2**. The proposed converter station will be situated within a security fenced area of between 200m x 200m and 300m x 300m. The exact configuration will depend on the technology provider selected to supply HVDC converter station equipment. The buildings will typically be constructed of steel frame and cladding.

3.4 An engineering optioneering process is ongoing to determine the most environmentally considerate option for location of the proposed converter station. Two site options, Option A and Option B are under consideration, both of which are located within the indicative site boundary as shown in the applicant's report at **Figure 1.1**.

3.5 Landscaping will be implemented around the perimeter of the site to help integrate the proposed converter station into the surrounding environment. Given the topography of the area, grading of the land will also be required to level the construction platform.

3.6 A new permanent access road will be established from the existing road network at Broadway Lane or Old Mill Lane. Access via Broadway Lane, near where Broadway Lane intersects with Day Lane, is the preferred mode of access. This road will be used heavily throughout construction; however it will continue to be required for maintenance staff to access site. Access by maintenance staff will be limited to light vehicles. Occasional use by heavy vehicles will only be required for a major equipment failure, for example if the replacement of a transformer is needed at the proposed converter station.

3.7 The outdoor equipment which forms part of the proposed converter station will be similar to equipment that is found within typical electrical substations, such as National Grid's Lovedean substation. In addition, equipment is required to convertthe power between AC and DC or vice versa. The equipment to convert power is a system of electronic valves housed within the proposed converter station buildings and has associated infrastructure for cooling and control.

3.8 With reference to proposed layout given in the Scoping report at **Inset 2.2**, the electronic valves are housed within two converter hall buildings (1), each of which typically will measure 70m in length, 50m in width and 22m in height, but a lower building occupying a greater area may be considered if it proves technologically possible. An adjoining control building (2) will also be established however this will be at a reduced height. Depending on the detailed design, the building may be extended to include other equipment such as the AC reactors (12), and DC cable terminations (6); this is to prevent exposure to saline pollution. The lighting masts (height approximately 20m) 400kV switchyard (7), transformers (3) and filters (13) will be located outdoors. The converter station building may be located side by side or in a row. The Scoping report indicates that the exact shape of the land plot occupied by the converter station will be finalised at the detailed design stage.

3.9 The detailed design of the proposed converter station will be undertaken by an appointed Engineer, Procure, Construct (EPC) Contractor taking account of technical specification and site specific requirements. The Scoping report indicates that the detailed design would be approved through reserved matters applications.

3.10 The Council agrees that development does not constitute either Schedule 1 or Schedule 2 Development as set out in the Environmental Impact Assessment (EIA) but due to the environmental and human sensitivities in the area, the applicant is voluntarily proposing to submit an Environmental Statement with a subsequent planning application.

SCHEDULE 2

4 Introduction

4.1 This schedule outlines the terms of reference for the Environmental Statement. This schedule should be read in conjunction with; Town and Country Planning (Environmental Impact Assessment) Regulations 2017. Guidance on EIA: Scoping. European Commission, June 2001. Available on website: http://europa.eu.int/comm/environment/eia/eia-studies-and-reports/study1.htm

5 Content of Environmental Statement

5.1 An environmental statement to be submitted with a planning application for the proposed development on this site should include;

- A description of the development
- An outline of the main alternatives
- Information describing the site and environment
- Information describing the likely and significant effects of the development on the environment and measures envisaged to avoid, reduce and, if possible, remedy the main effects the development is likely to have on the environment.

5.2 Baseline studies should be used to help both describe the existing site and environment and also provide baseline information against which effects of the proposed development are assessed. Schedule 3 provides further details on the scope of environmental information required. The *terms of reference* for the Environmental Statement are outlined below:

5.3 A Description of the Development

This should include a description of the proposed quantum and mix of uses, the design philosophy of the development (including proposed landscaping and open space/recreation land), the proposed phasing and the proposed access and transport arrangements (cycle and vehicles). It should also include a description of proposed water supply and drainage, proposed waste disposal (including solid waste and liquid effluent), proposed energy provision, the numbers to be employed and where they are expected to come from, and a description of the general type and source of materials.

5.4 An Outline of the Main Alternatives

This should include an assessment of the different ways in which the developer can feasibly meet the project's objectives e.g. by carrying out a different type of action; or choosing an alternative location; or adopting a different technology or design for the project. The "No Project" alternative must also be considered as the baseline against which the environmental effects of the project should be considered.

5.5 Information Describing the Site and Environment

This should include a description of the physical features including: population, flora and fauna (in particular protected species and habitats), soil, water (aquifers, watercourses and any existing discharges), air, architectural and historic heritage, archaeological sites and features, landscape and topography, recreational uses. The study should pay attention to the presence and long-term retention of natural and semi-natural features within the proposal. Such features should include: standing water; streams and watercourses; trees and hedgerows and geological and archaeological features or remains.

This should also include a description of the policy framework including; all the relevant statutory designations, international designations, national and local designations including the Site of Nature Conservation Interest (SINC) and reference to relevant national policies and to regional and local plans and policies (including approved or emerging development plans) and any relevant supplementary planning guidance.

5.6 Information Describing the Likely and Significant Effects of the Development on the Environment and measures to avoid reduce and mitigate adverse effects

In the assessment of effects consideration should be given to all aspects of the environment and the different sources of impact likely to occur as a result of the proposed development. The different aspects of the environment, which should be considered, include:

Human beings, buildings and other manmade features including archaeology
Flora, fauna and geology
Land
Water
Air and Climate/Climate Change

5.7 The broad sources of impact of the proposed development that should be considered include:

Physical change in the locality

- Change in land use, landscape or topography
- Clearance of existing land, vegetation and buildings
- Creation of new land uses
- Construction works
- New road traffic during construction and operation
- New or diverted transmission lines or pipelines
- Changes to the ground conditions including hydrology of watercourses and aquifers
- Abstraction or transfers of water
- Changes affecting drainage or runoff
- Transport of personnel or materials for construction or operation
- Influx of people to an area
- Loss of native species or genetic diversity

Consumption of natural resources

- Land
- Water
- Aggregates
- Forests and timber
- Energy including electricity and fuels and the use of renewable energy

Production of waste

- Municipal waste
- Sewage sludge
- Construction or demolition waste
- Facilities for treatment or disposal of solid wastes or liquid effluents

Release of pollutants in the air

- Emissions from combustion of fossil fuels
- Emissions from construction activities
- Dust or odours from handling of materials including construction materials, sewage and waste

Production of noise, light and heat energy

- From construction or operation
- From construction or operational traffic
- From lighting or cooling systems

Risk of contamination of land or water.

- From the discharge of sewage or other effluents to water or the land. (whether treated or untreated)
- The risk of long term build up of pollutants in the environment from these sources.

Risk of accidents during construction or operation of the project

- From events beyond the limits of normal environmental protection e.g. failure of pollution control systems.
- The risk of the project being affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslip, etc).

Social & Economic change

- Population changes in the area including changes in population size, age, structure, social groups, increased demands on local facilities or services,
- The economic impact of the development including effect on employment, house prices and demand. Effects of creating a sustainable community including environmental, social and economic benefits

The potential for cumulative effects and off-site

- The potential for the project to set a precedent for later developments and taking into account other existing or planned projects with similar effects.

6 Other Factors:

6.1 In the assessment of likely and significant effects of the development on the environment the following factors should also be considered:

- Nature of the impacts (e.g. direct, indirect, secondary, cumulative, short, medium, long-term, permanent and temporary, positive and negative).
- Extent of the impacts (geographical area, size of the affected population/habitat/species).
- Magnitude and complexity of the impact.
- Probability of the impact.
- Duration, frequency and reversibility of the impact
- Mitigation incorporated into the project design to reduce, avoid or offset significant adverse impacts. This should include on-site renewable energy production in line with development plan and national policy requirements and compliance with the Code for Sustainable Homes; BREEAM standards etc.

6.2 It is suggested that this environmental information (description of the site and likely and significant effects) be presented in the form of a series of technical studies. The titles of the individual studies are at the discretion of the developer/consultants but should ensure that the guidance given in this scoping opinion is followed. A common approach to the preparation of the technical studies is required, which should commence with a description of the site and environment derived from baseline studies.

6.3 An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the information should be given. A description of the forecasting methods used to assess the effects on the environment should also be included. Where mitigation measures are proposed a description should be given in the relevant technical paper of any proposed monitoring of the success of the measures.

6.4 The technical studies should be undertaken by appropriately qualified and experienced consultants.

6.5 A non-technical summary of the information should also be prepared and submitted with the Environmental Statement.

SCHEDULE 3

Appendix A – Scoping Report

Scoping of the Environmental Statement

The proposed scope for the Environmental Statement, as set out in 3.8 of the Scoping Report, is considered to be acceptable by the Local Planning Authority subject to the following comments.

Planning policy

The Scoping Report identifies the relevant national and local planning policy and guidance framework against which a subsequent planning application will be considered. There should be analysis of the proposal against the relevant planning policies demonstrating how the proposal is policy compliant. The South Downs National Park Authority is progressing its Local Plan and will submit the 'Submission' version of the Local Plan by the end of April 2018.

It is noted that the proposal lies within the Denmead Neighbourhood Plan Area (DNP) and this carries the same weight as adopted local plans. This should be reflected in the policy assessment of the proposed development.

The DNP includes a vision and series of objectives and these should be considered. Policy 1 and 2 are specifically relevant as these include references to development and sites allocated for development. Whilst it is noted large scale developments are listed in the screening report, given the proximity of the allocations in the DNP it is suggested that these are also referred to.

Whilst Option B is within open countryside where Policy MTRA4 of LPP1 is relevant the screening report appears to have appropriately referred to various designations and constraints and other specialists will be able to comment on these matters.

The route however passes through the designated gap betweeen Denmead and Waterlooville and therefore Policy CP18 of LPP1 is relevant. The route also passes through a minerals safeguarding area so this will also need to be assessed, against the policies and proposals of the Hants Minerals and Waste Local Plan. Part of the site also lies within 5.6 km of the Solent SPA. .

Para 8.1.13 – should also refer to proposals with Denmead Neighbourhood Plan

Para 11.1 should also refer to Denmead with its population (6,700 2011 census) and dwellings 2,800.

Para 11.1.8 refers to the settlement of Anmore being one of the settlements closest to the site/route. It is suggested that this listed is expanded to include Denmead which also encompasses Anmore.

Page 163 should also refer to the Traveller DPD - pre-submission January 2017 and Denmead Neighbourhood Plan 2015

A number of the development management policies in LP2 are applicable particularly with regard to the siting and appearance of the proposed building itself - DM1; DM10; DM15; DM16; DM17; DM18; DM19; DM20; DM22; DM23.

Additional documents of relevance are those produced and published collaboratively by PUSH – green infrastructure; water management; air quality etc.

Cumulative effects

The Assessment of Cumulative Effects (3.11) are noted. A further site that has not been included in the scope and should, relates to the Major Development Area at Land West of Waterlooville. This site is under construction and relates to a total of 3,500 dwellings and additional infrastructure. The combined effects of this large development should be taken into account when assessing the cumulative effects of consented development in the local area.

In addition to the schemes identified in Tables 3.4 and 3.6 and the development at land to the West of Waterlooville, the following existing developments should be included in the assessment of cumulative impact and form part of the baseline study.

- The existing Lovedean Electricity substation.
- The existing solar farm at Day Lane.

A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure should be included within the assessment.

The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):
a. existing completed projects;
b. approved but uncompleted projects;
c. ongoing activities;
d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Natural England would advise that the cumulative impacts section should also consider impacts on ecologically sensitive receptors such as designated sites, non-designated priority habitats and species, protected species etc. In relation to point e, Natural England would advise that the Environmental Statement should also consider known forthcoming planning applications in close proximity to the development application, where there is potential impacts on key ecological interests.

For example, a scoping report has been submitted for the redevelopment of the Fraser Range site at Eastney, Portsmouth and a Coastal Defence scheme is being progressed

for the Southsea frontage. All of these developments will potentially impact on the vegetated shingle in this area and further examination of this issue is necessary.

The landscape and visual assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.

Design

It is understood that a hybrid application is proposed with details of the design of the converter building 'reserved' for detailed consideration at a later stage, but that details of scale will be included in the initial application. The absence of details of design make a full assessment of the impact on the landscape more difficult even where indications of scale are provided. It also makes an assessment of how the building/infrastructure would sit within the site and how any material arising from the development would be used to create new screening landform's difficult to assess (as referred to at 8.3.15 of the report). The absence of landscaping details and other mitigation proposals also has the potential to undermine the Landscape and Visual Impact Assessment.

Consideration of alternatives

In accordance with Schedule 4 of the EIA Regulations, it is rightly stated that the ES will contain reference to alternatives. Reference is made at (3.10.2) to a summary being provided in the ES of reasons for the selection of the final development design and a description of design alternatives. This is welcome but it rather underplays the need for fully evidenced reasoning for site selection and reasonable alternative sites. It is understood that the Lovedean substation offers a technically available connection option in terms of a strategic location in the south of England, but the option sites as presented comprise generally open countryside on elevated ground in close proximity to the South Downs National Park and within a Groundwater Source Protection Zone.

Evidence should be submitted demonstrating what alternative sites for the converter have been considered that may have a less sensitive impact on the environment, particularly landscape and visual impacts. This issue is particularly important in relation to the setting of the South Downs National Park.

It is understood a position close to the substation is required so as to reduce the length of AC cables between the converter and the substation (due to efficiency and trench requirements of DC cables), however, similar systems at Daedalus (Fareham) and the FAB Link at east Devon comprise much greater lengths of AC cables (approximately 5km in the case of the FAB Link) and that raises the question of whether alternatives further south of Lovedean may be more suitable and should be explored in accordance with Schedule 4 of the EIA Regulations.

Traffic and Transport

Chapter 5 of the EIA scoping covers transport matters. Key routes to the proposed site have been identified, although further details regarding the routes will need to be provided together with details of construction traffic.

The cable routing is shown and outlined in paragraph 5.1.6 this will need to be discussed with the Highway Authority in more detail. Information regards cable laying proposals, carriageway widths required and appropriateness of routes should be provided to support any application. Consideration must also be given to committed development in the area and measures taken to ensure service information and highway layout is up to date.

As outlined in section 5 of the EIA a Transport Assessment/Statement will be required to support the application. The EIA sets out appropriately the areas in which the Transport Assessment should consider and engagement with the Highway Authority to inform this assessment is welcomed.

In addition it is acknowledged by the SDNP the potential traffic routes will rely on local rural roads. Therefore impacts on residents, recreational users and tranquillity will need to be assessed.

Air Quality

Agree with scope as contained within chapter 6 of the EIA scoping report.

Noise and Vibration

Natural England advises that potential noise and vibration impacts on ecologically sensitive receptors and should be included within the EIA.

The noise and vibration assessment must include any anticipated vibration impacts on groundwater i.e. increased turbidity, on Portsmouth Water's supply. Vibrations caused during development must form part of this assessment to understand potential risks associated with turbidity. Mitigation of vibration causing increased turbidity is challenging therefore it is best dealt with during the design phase.

Landscape and visual impacts

The Scoping Report correctly identifies the national, county level and local landscape character assessments and the main receptors are agreed. A detailed baseline needs to be carried out as part of the LVIA. This should be robust enough to enable it to guide constraints and opportunities for the site and steer the design and appropriate mitigation/enhancement approaches. The SDNPA recommend that the baseline study responds to the site's location close to the National Park boundary and clearly explores, using evidence, how the site contributes to the setting of the National Park, both in visual and landscape character terms. The inclusion of the South Downs Integrated Landscape Character Assessment (2011) is supported as part of the baseline evidence. Additionally, the following evidence should also be considered in order to inform the baseline assessment:

- Historic Evidence - maps, historic landscape characterisation (Hampshire Historic Landscape Characterisation 2013)
- South Downs National Park Viewshed Characterisation and Analysis (2015)
- South Downs National Park Tranquillity Study (2017)
- South Downs Green Infrastructure Framework

Table 8.1 of the Scoping report sets out the issues to be scoped in / out of the LVIA. It proposes to scope out visual receptors beyond 3km of the site boundary, and this should be scoped in. It is noted work is still ongoing to determine the Zone of

Theoretical Visibility (ZTV) and this should be used to inform receptor points that are beyond 3km but which may be sensitive to change. It is noted (8.3.5) that it is intended to include three sites beyond the 3km zone (Old Winchester Hill Downs, Windmill Hill and Port Down Hill), however, there may be other locations that should be incorporated in the LVIA rather than being scoped out by a more arbitrary 3km zone. Winchester Hill is a Scheduled Ancient Monument with the South Downs Way National Trail crossing it, so should be assessed in that context.

With regards to landscape receptors, these should be considered in terms of both landscape character areas as well as local elements of the landscape to be used to define receptors, e.g. hedgerow features and ancient woodland. This should also include perceptual qualities such as tranquillity and dark night skies.

The LVIA should not be limited to assessment of the building in isolation, but should, as identified (Para 8.2.3), include all associated elements (eg lighting columns, perimeter fencing, access roads, signage). As mentioned above, there is a conflict here with the suitability of an outline application to suitably assess detailed elements such as fencing, roads, parking areas associated infrastructure and landscaping proposals against any generalised reference to it in the LVIA.

The SDNPA recommend that the baseline study responds to the site's location close to the South Downs National Park boundary and clearly explores, using evidence, how the site contributes to the setting of the National Park, both in visual and landscape character terms. This will be a fundamental element of the Baseline Studies as it will help to determine the significance of any effects upon the National Park and its Purposes.

The development site is adjacent to and within the setting of the South Downs National Park, which is also designated as an International Dark Skies Reserve. Natural England's particular interest is in people visiting / enjoying / experiencing the countryside and especially natural beauty / special qualities of the designated landscapes. This might include people using open access land, Natural Trails, the England Coast Path, promoted routes and other rights of way, as well as publicly accessible countryside and wildlife sites.

Consideration should be given to the direct and indirect effects upon this designated landscape and in particular the effect upon its purpose for designation within the environmental impact assessment, as well as the content of the relevant management plan for South Downs National Park. Detailed consideration of sequential effects should also be included and Natural England would also recommend the inclusion of long distance views from within the National Park where people are affected, such as Old Winchester Hill.

Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography. The European Landscape Convention places a duty on Local Planning Authorities to consider the impacts of landscape when exercising their functions.

Natural England supports the publication *Guidelines for Landscape and Visual Impact Assessment*, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out in this document is almost universally used for landscape and visual impact assessment.

In order to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The Environmental Impact Assessment process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.

The method used to assess the likely significance of effects needs to be set out within the LVIA.

Lighting

As is acknowledged in the Scoping Report, the South Downs National Park is a designated International Dark Skies Reserve- only the second in England and 12th in the world. Further information can be found at:
https://www.southdowns.gov.uk/enjoy/dark-night-skies/

Reference is made to consideration of visual lighting impacts within the Landscape and Visual chapter of the submitted scoping report. However, the SDNPA recommend that a lighting assessment is also scoped in to consider potential environmental pollution impacts.

Lighting impacts should be assessed in accordance with best practise guidelines from the Institute of Lighting Professionals and should consider the operational phase of development. Consideration should also be given to temporary effects during construction for example, light pollution from floodlighting of construction site. The lighting assessment should detail the baseline conditions, and consider the cumulative impact from any existing/approved developments as identified above.

Landscape Mitigation

The design and siting of the building should be landscape led. The need for landscape mitigation implies the development will have a visual impact on the surrounding area. Any mitigation is ultimately informed by a detailed assessment of the specific impacts of a development which should be designed and sited to limit any adverse visual impacts. Given the outline nature of the application there are concerns that the proposal will lack a genuine visual impact assessment to inform a landscape led siting and design process.

Any landscape mitigation proposals must be informed by an Ecologist to ensure the landscaping has mutual benefits to enhance biodiversity and improves wildlife

connectivity and networks and foraging corridors. Mitigation must also be informed by the LVIA.

Heritage and Archaeology

Heritage

The report has sufficiently identified the above ground designated heritage assets and their settings which would be affected by the proposals. However, there is the potential that the proposals could impact a number of non-designated heritage assets (buildings or structures) within the vicinity of the proposed route of the pipeline in the Winchester District. It is therefore advised that the potential impact of the proposals upon the significance of these assets should also be assessed as per the guidance outlined under paragraph 135 of the NPPF.

The assessment should clearly demonstrate that the extent of the proposed study area is of the appropriate size to ensure that all heritage assets likely to be affected by this development have been included and can be properly assessed. An arbitrary radial search is unlikely to accurately reflect the impact of the development on heritage assets in the wider area and a more tailored approach would be required, in particular with regards to assessing impacts to setting.

With regard to designated heritage assets, there needs to be an understanding of what makes these assets 'special, Significance can be harmed or lost through alteration or destruction of the heritage asset, or through development within its setting, so it needs to be demonstrated how these proposals would impact on significance.

The assessment should also take account of the potential impact which associated development activities (such as construction, servicing, and maintenance) might have upon perceptions, understanding, and appreciation of any heritage assets in the area. The assessment should also consider the likelihood of alterations to drainage and ground water patterns that might lead to in-situ decomposition or destruction of below ground archaeological remains and deposits, and can also lead to subsidence of buildings and monuments.

Archaeology

The County Archaeologist comments that the site is in an area of good archaeological interest with evidence of a Bronze Age cemetery and a round barrow in the immediate area together with isolated Iron Age and medieval finds recorded in the vicinity. The EIA Scoping Opinion report (Aquind, Feb 12018) confirms that Heritage and Archaeology will form part of an Environmental Statement which will be prepared for this proposed scheme. Chapter 9 of the Scoping Opinion Report considers Heritage and Archaeology issues, assessing likely issues (both temporary and permanent) relating to different aspects of the proposed scheme. The majority of the proposed underground cable route would lie within existing roads but sections will lie within fields as does the proposed sub-station sites. The EIA assessment methodology proposes that an archaeological desk-based assessment is undertaken (and I understand that this is currently underway). However no further archaeological site surveys or site investigations are proposed as part of the EIA assessment. Proposed mitigation measures are set out in

para. 9.3.8 to 9.3.10 of the scoping report. This includes differing levels of targeted archaeological watching brief for the cable route – this is considered likely to be appropriate for the majority of the proposed cable route.

The Scoping Opinion report then indicates that appropriate mitigation measures are to be agreed for areas where particularly sensitive assets have been identified or where the ground impacts will be more severe [para. 9.3.9 & 9.3.10]). However, as the EIA assessment comprises solely archaeological desk-based assessment + a site walkover, the identification of currently unknown sensitive assets which may be present within the development area is likely to be limited.

The EIA assessment stage should include further site surveys (such as geophysical survey) and site investigations (trial trenching) for those areas of the cable route which lie outside of the existing road network and for the proposed site of the sub-station. This will enable appropriate mitigation measures to be set out in an Environmental Statement.

Ecology

Designated sites

Natural England note that the study area boundary includes internationally designated sites within 10km and nationally designated sites within 2km. While Portsmouth Harbour SSSI falls just outside of this 2km boundary, potential impacts upon overwintering birds will still be assessed as part of the Portsmouth Harbour SPA and Ramsar site which have been screened-in in table 10.2.

Natural England agrees with the stages of Ecological Impact Assessment outlined in paragraph 10.3.4 and recommends that a source-pathway-receptor approach is applied to inform this process. Consideration should be given to both direct and indirect impacts upon designated features and supporting habitats. To assist with the assessment of this project, we recommend that a separate chapter providing specific information to support a Habitats Regulations Assessment is included within the Environmental Statement.

Natural England note in paragraph 10.2.22 that in addition to the SPA and Ramsar sites, a number of suitable fields exist across the proposed cable route suitable to support roosting, loafing and foraging during high-tide. These sites, and additional sites in the vicinity of the landfall area, are identified within the Solent Wader and Brent Goose Strategy (SWBGS). This strategy aims to protect the network of non-designated terrestrial wader and brent goose sites that support the Solent Special Protection Areas (SPA) from land take and indirect effects associated with new development and forthcoming guidance on mitigation and offsetting requirements is being prepared. The terrestrial wader and brent goose sites are located on land that falls outside of the Solent SPAs boundaries. However, as this land is frequently used by SPA species (including qualifying features and assemblage species), it supports the functionality and integrity of the designated sites for these features.

Detailed consideration of these sites within the EIA is required with respect to land take and disturbance and we recommend that you seek further information from the Hampshire Biodiversity Information Centre and other appropriate bodies to supplement surveys. It is noted that detailed wintering bird surveys have been undertaken for the

survey area of the landfall and cable route. Natural England would be happy to advise further on mitigation and offsetting requirements through our Discretionary Advice Service as the detailed design progresses.

For the purposes of the Habitats Regulations Assessment, Natural England advises that these areas of functionally-linked land, together with other habitats that provide a supporting role, are assessed in a manner consistent with designated supporting habitat.

Protected species
The scoping report sets out the protected species ecological surveys being undertaken as part of the EIA. The area in the vicinity of the Converter Station is sensitive with respect to Bechstein's bats and hazel dormouse. Detailed consideration of these issues within the EIA is required with mitigation strategies, as appropriate.

Species information should include a data search from the Hampshire Biodiversity Information Centre. Potential impacts of species to consider should include direct habitat loss, habitat fragmentation, population isolation, disturbance (light, noise, visual), and hydrological impacts. Whilst some direct impacts on the site ecology may be outside of the SDNPA's remit to comment upon, there may be relevant considerations such as impacts upon migration or foraging routes which would need to be understood and assessed. In particular, the scoping report states that ancient woodlands surrounding the Lovedean substation and associated hedgerows are suitable to support roosting, foraging and commuting bat species. As part of any landscape mitigation there may be opportunities for relevant habitat enhancement/creation.

In terms of habitat impacts within the National Park, Catherington Down SSSI (calcareous grassland) is within 2Km of the site and also adjacent to one of the potential traffic routes. Although the scoping report includes this within Table 10.3 (Nationally Designated Sites), it does not appear to be included within the Scope of Assessment (Section 10.2).

Cable route - Denmead Meadows, East Hampshire
One of the options for the proposed route of the cable is through Denmead Meadows, which has been identified for its nature conservation value. The field is currently designated at county level due to the numbers and rich diversity of plant species present and last year it was submitted to Natural England for consideration for designation as a Site of Special Scientific Interest. This process is on-going and detailed consideration of this site will be required. It is understood that the applicant is exploring design options that would seek to avoid direct impacts to this area, either through directional drill methods or alternative routes. Natural England would welcome further consultation as the detailed design progresses to ensure impacts are avoided and enhancements secured.

Biodiversity Mitigation, Compensation and Enhancement
In order to secure appropriate biodiversity mitigation and enhancements Natural England recommends that the Environmental Statement is supported by a Biodiversity Mitigation and Enhancement Plan (BMEP). The BMEP should include measures for

mitigating impacts on protected species and habitats and include biodiversity compensation measures for any residual biodiversity losses that cannot be fully mitigated on site. This might include the provision of offsite replacement habitats, or an agreed financial contribution for biodiversity enhancements elsewhere calculated using a Biodiversity Compensation Framework, Environment Bank, or similar mechanism.

In the recent 25 Year Environment Plan, the Government has committed to making sure the existing requirements for net gain for biodiversity in national planning policy are strengthened and the current trend of biodiversity loss is halted. This approach is likely to be supported by the forthcoming planning policy guidance. Currently most developments still result in biodiversity loss. Natural England therefore advises that each development reverse this trend and deliver net gains in biodiversity.

Natural England strongly recommends that this proposal achieves a net gain for biodiversity and we advise that a biodiversity metric is used that would be relevant to each local authority. This approach would ensure that your authority will have met its duties under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 which states that 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.

Where residual biodiversity losses are considered unavoidable, Natural England recommends that further advice on these aspects is sought through our Discretionary Advice Service (DAS). Further information on the DAS service and how to apply can be found here:
https://www.gov.uk/guidance/developers-get-environmental-advice-on-your-planning-

Arboriculture

An Arboricultural Implications Assessment would identify the impact of the development on existing trees and Crabdens Copse and identify suitable protection/mitigation. The ES should assess the implications for the cable routes between the converter station and Lovedean Substation in view of the trees that surround the Substation. Direct drilling should be used as opposed to works that may result in loss of any hedgerow/trees. A collaborative approach to tree protection during works is encouraged between parties.

Socio-economics

Agree with scope as set out in the EIA scoping report

Water Resources and Flood Risk

Groundwater
The Water Resources (chapter 12) and Ground Conditions (chapter 13) have been 'scoped in' to the EIA. This is because the two potential sites for the converter station, together with a section of cable, are located within the groundwater Source Protection Zone 1 (SPZ1) for Portsmouth Water's Bedhampton and Havant springs and Lovedean public water supplies. These supply drinking water to over 250,000 homes. As such, careful consideration must be given to the acceptability of any activity which has the

potential to impact groundwater quality in this area. We expect development and investigation proposals in the areas of greatest risk to be supported by detailed and site specific assessment to demonstrate that the risks to groundwater are acceptable. We expect such assessments to be included in the EIA.

In addition to the sites being located in SPZ1 they are also in an area where solution (karstic) features are prolific. Not only must the developer consider the geotechnical issues associated with these, they must also consider the increased risk to groundwater quality that they represent. Evidence available to us shows that pollutants entering these features can reach the springs rapidly with little opportunity for monitoring, attenuation or to be intercepted. We are also aware of concerns by Portsmouth Water regarding disturbance to the chalk (from, for example the installation of boreholes or piles) and the potential to cause turbidity and impact drinking water supplies. This must be considered in detail in the EIA (further detail below).

Section 3.10 of the report says that the EIA will discuss the main alternatives to the scheme. Two sites (options A and B) have been identified for the convertor stations. We would like to understand if these need to be located next to the existing National Grid Substation or if there are alternative and suitable locations which would move them outside of the SPZ1 and away from the area where Karst features have been identified. We would like to see this explained in the EIA.

The scoping document contains very limited information on the design of the convertor station and includes no information on the potential storage or use of hazardous substances or non-hazardous pollutants in the scheme (for example fuels and chemicals used in cables or in the convertor station or transformers). The EIA should include this information, provide an assessment of risks associated with the use and storage of these substances to groundwater and discuss how the risks to groundwater can be mitigated. Given the sensitively of groundwater in this area the EIA needs to include sufficient information to demonstrate that the risks are understood and that they can be mitigated. This information is needed to assess the appropriateness of any proposal or planning application

Chapter 12 does not specifically identify the need to discuss the potential for pollution from the proposed development in the EIA. This, along with the mitigation measures needed to protect groundwater should be included in the EIA.

Section 2.7.2 of the scoping report says that ‘prior to the start of construction, respective ground/local environment inspections and surveys will be carried out to determine the nature of the soil and immediate area. This information will provide suitable data for the design and construction of temporary and permanent works as appropriate to meet the technical specification, required regulations and consent conditions.’ As discussed above, solution features are known to be present in this area. The applicant should consider carrying out surveys of these features in determining the baseline conditions. The EIA will need to consider the implications of these features and identify how risks to groundwater will be mitigated.

Chapters 12 and 13 mention that as part of the establishing baseline conditions BGS mapping has been reviewed. In establishing the baseline conditions and developing the conceptual site model we recommend that the applicant reviews information published by the BGS on the Karst hydrogeology of the Bedhampton and Havant springs at http://www.bgs.ac.uk/research/groundwater/about/karstAquifers/bedhamptonHavantSprings.html. The scoping document fails to recognise that these features may be present at the site(s) and the potential risks associated with them.

The scoping report confirms that 'a detailed review of potential sources of contamination will be completed in the preliminary risk assessment'. We agree that this will be needed. A conceptual site model should be developed and included in the EIA document. Further information is available on the GOV.UK website. We would welcome the opportunity to discuss this with the applicant prior to developing the EIA.

As the site is in the SPZ1 for Portsmouth Water's Bedhampton and Havant Springs and Lovedean public water supplies, we would expect the developer to consult Portsmouth Water and seek confirmation that they are satisfied with the proposals.

Portsmouth Water comments:
13.1.1 The study must incorporate information on solution features and cavities due to potentially rapid transit times in the catchment posing a risk to Portsmouth Water's public drinking water supply.
13.1.2 The Ground Conditions chapter is proposed to include water quality therefore due the nature of the catchment being karstic in places the 250m study area is considered too narrow and should be extended to at least 500m.
13.1.14 The proposed route passes within SPZs for the Havant & Bedhampton Springs, the study must reflect this.
13.2.1 Sites of geological interest should include solution features.
13.2.6 The Conceptual Site Model (CSM) should also look at the development phase as well as legacy contamination and how mitigation measures can be deployed to prevent pollution occurring during the pre-development, during and operational phases.
Table 13.1 – Where Secondary A Aquifers overlie Principal Aquifers this should have a receptor assessment of High due to the potential connectivity of the aquifer and the presence of solution features. Secondary A and B Aquifers should lie in Moderate Risk and it is recommended that Unproductive Strata is present in Low Risk.
13.3.15 Operational sources of contamination should consider new preferential pathways and, if relevant, Oil filled cables?

Flood Risk
The proposed cable route through Portsmouth passes along sections of the North Portsea coastal defence scheme, which is being delivered by the East Solent Coastal Partnership (ESCP).

The EIA Scoping Report identifies that the proposed works will pass by phase 1 of this scheme (planning application 14/01387/FUL in Table 3.7) but does not identify the future phases of the scheme. The future phases of the scheme can be seen at http://www.escp.org.uk/coastal-schemes/portsmouth/protecting-future-north-portsea-island.

The EIA Scoping Report should be updated to include the future phases and, if they have not already been, the ESCP should be consulted.

12.1.1 The study area should encompass ground and surface water features within at least 1000m when reviewing baseline conditions. There are potential impacts on groundwater abstractions due to solution features and rapid transit times between proposed site and drinking water sources.

The proposed cable route has solution features present. These features contribute to a karstic environment with rapid transit times therefore pollution prevention is key. Consideration of the solution features must form part of the scope of work particularly in key areas i.e. close to the Lambeth Group and Chalk boundaries and Clay with Flints and Chalk boundaries.

12.1.37 The route of the cable lies on Superficial Geology overlying Bedrock and, in places, directly on Bedrock that is classified as Principal Aquifer. This must be reflected in the study along with karstic hydrogeology and solution features.

12.2.1 Surface-borne and subsurface pollutants should be considered in the study to account for legacy contamination derived from historic land use.

Fisheries and Biodiversity
We note from the report that the cable route may cross an 'unnamed watercourse' north of the B2150. We believe this water course to be the North Purbrook Stream, classified as a statutory watercourse. This watercourse is a known eel migratory route and is likely to have a resident fish population.

Currently the Scoping Report does not include potential effects on fish (including eels). The noise and vibration from HDD drilling activities in close proximity to a watercourse has the potential for adverse impact on these fish species as well as other aquatic ecology such as water voles and otters. Therefore this needs to be included in the EIA scoping report. There are other watercourses close to the cable route including Soake Farm, the Wallington and Hermitage statutory main rivers. It is unclear from the maps provided whether these watercourses and their ecology could be impacted by the proposed cable route. Clarification needs to be given on how close the proposed route is to these watercourses whether the cable route will impact ecology of these rivers also

The proposed technical approach is considered acceptable subject to the following comments being incorporated in the ES and catchment-specific characteristics are considered including concerns over increased turbidity, solution features, contamination pathways and impacts on groundwater. Specific comments from Portsmouth Water are detailed in light of the Groundwater Source Protection Zone. Comments are referenced using the Scoping Report's nomenclature for ease of reference.

General comments on groundwater and flood risk from Portsmouth Water

Source Protection Zones (SPZ) must be identified in any future reporting to ensure the appropriate level of risk is assigned to the risk assessments and design/operations.

2.5.5 What are the proposed cooling options at the convertor station, do they involve the use of oils?
2.5.7 Details of temporary laydown areas will be required, the applicant should ensure these are low permeability and that pollution prevention measures are in place prior to use such as spill kits and incident management systems.
2.5.14 Details of Horizontal Directional Drilling (HDD) locations and methodology will be required for approval prior to commencement to understand the pollution prevention methodologies employed to mitigate potential impacts on groundwater. The potential land contamination risks must be addressed prior to commencement.
2.5.19 Construction details of the proposed joint bays should be provided for approval.
2.6.2 The specification and location of all oil filled cables, existing and proposed, should be provided to understand the potential risks posed to groundwater in the catchment.
2.7.2 Environment Surveys and Inspections must include consideration of soils, potential contamination, geology, superficial cover, bedrock, hydrogeology, solution features, source protection zones and nearby abstractions.
2.7.9 Please provide details/method statement for trenchless techniques for the installation of cable ducts.
2.7.35 All imported soils material must be clean and inert and not pose a contaminant threat to the underlying aquifer.
2.9.1 The risk assessment must consider the risks posed to groundwater associated with leaving the cable in situ at the end of the cable's 40 year design life.
Table 3.1 Hydrological Receptors – Effects of and on solution features, aquifer, water quality including turbidity must be included.
3.11.2 The assessment must be designed to understand the potential for pathway creation through impacted soils and/or long-term spill and incident management if preferential pathways are created.

3.13.3 Portsmouth Water would like to guarantee consultation via the LPA.

5.3.17 Traffic routes should be directed away from Source Protection Zones where feasible to reduce risk of collision and/or spills during construction and operation.
18.3.20 We agree with and recommend the preparation of a Construction Environmental Management Plan (CEMP).

Ground conditions/contamination

Comments in respect of ground conditions should be read in conjunction with the above section on water resources. In addition the following issues raised by Portsmouth Water are relevant:
13.1.1 The study must incorporate information on solution features and cavities due to potentially rapid transit times in the catchment posing a risk to Portsmouth Water's public drinking water supply.
13.1.2 The Ground Conditions chapter is proposed to include water quality therefore due the nature of the catchment being karstic in places the 250m study area is considered too narrow and should be extended to at least 500m.
13.1.14 The proposed route passes within SPZs for the Havant & Bedhampton Springs, the study must reflect this.
13.2.1 Sites of geological interest should include solution features.
13.2.6 The Conceptual Site Model (CSM) should also look at the development phase as well as legacy contamination and how mitigation measures can be deployed to prevent

pollution occurring during the pre-development, during and operational phases. Table 13.1 – Where Secondary A Aquifers overlie Principal Aquifers this should have a receptor assessment of High due to the potential connectivity of the aquifer and the presence of solution features. Secondary A and B Aquifers should lie in Moderate Risk and it is recommended that Unproductive Strata is present in Low Risk.
13.3.15 Operational sources of contamination should consider new preferential pathways and, if relevant, Oil filled cables.

Appropriate attention is given to addressing potential contamination issues.

- Carbon and Climate Change – adequate scope
- Human Health - Information held by the Council's Environmental Protection (Contamination) Department suggests there are numerous small pits and areas of unknown filled ground within the development area. In addition there are a couple of minor pollution incidents noted and an historic well. It is not known whether there is any made ground or contamination associated with these features. The primary source of contamination within the development area is the site of the existing electricity sub-station.

Chapter 13 recognises a potential for contaminant linkages to exist within the study area and recommends a desk based assessment and preliminary risk assessment is undertaken. This will inform the need for any intrusive ground investigation. This Service supports this approach.

The risks from contamination are unlikely to compromise the viability of the development. The need for conditions to address contamination will be assessed once information supporting any future planning application has been reviewed.

- Soils and Land Use – adequate scope
- Electric and Magnetic Fields – adequate scope
- Waste and Material Resources – adequate scope

Conclusion

The Council has reviewed the topic areas and conclude that generally they adequately address the subject areas under which the development proposals may have significant environmental effects, subject to the above comments being addressed and incorporated into the EIA.