

## SPR EA1N and EA2 PROJECTS



### DEADLINE 2 - COMMENTS ON EXQ1 RESPONSES - 1.0 & 1.6

**Interested Party:** SASES

**IP Reference Nos.** 20024106 and 20024110

**Issue:** 6

Reference	Question	Response	SASES Comment
1.0.1, 1.0.2, 1.0.6	<p><b>Good Design</b> Section 4.5 of the Overarching National Policy Statement (NPS) for Energy (EN-1) emphasises the importance placed on ensuring good design in the development of infrastructure projects. This matter is cross-cutting in relation to multiple topics identified within the Initial Assessment of Principal Issues.</p> <p>Whilst the NPS is the primary source of policy under which the applications will be considered, policy within the National Planning Policy Framework (NPPF) advocates for good design as do the 'Design Principles for National Infrastructure', developed by the</p>	<i>not reproduced</i>	<p>a) An Integrated/Coordinated approach should be taken whereby offshore electrical hubs/substations are shared between multiple projects, and/or connected to an 'Offshore Ring Main'.</p> <p>b) Please refer to SASES Written Representations including <i>Substation Design</i> and <i>Rochdale Envelope</i>.</p> <p>Amongst other things substations should be designed to a 'Low Impact' requirement with carefully chosen reduced height components so as minimise landscape, visual, and noise impacts. Buildings and equipment should be no higher than is absolutely necessary.</p> <p>Sites with inherent flood risk must be avoided in accordance with the NPPF,</p>

	<p>National Infrastructure Commission.</p> <p>Could the Applicant outline their approach to good design in respect of the following key elements, focusing on how each element reflects the principles of development responding to setting/place and people:</p> <ul style="list-style-type: none"> <li>a) offshore wind turbine generators and associated platforms;</li> <li>b) onshore substations and grid connections;</li> <li>c) the onshore transmission cable, including any above ground ducting/chambers.</li> </ul>		<p>fully applying the Sequential and Exception Tests as specified therein.</p> <p>It is important that both power engineering and aesthetic design aspects are <u>considered together</u> by independent relevant experts in order to achieve the best design outcome. SASES supports the appointment of an independent design champion and/or design board to oversee this.</p> <p>c) The use of HVDC in a 'Bipole' configuration may allow the number of cable trenches to be reduced as well as reducing the number of conductors required. EA3 (under construction by SPR) is an example of this approach.</p> <p>The use of ducting is likely to facilitate the replacement of damaged cable sections whereas direct cable burial without ducting may not.</p> <p>d) With regard to the references by the applicant in its response to 1.0.6 to the requirements in the DCO, SASES refers to its Written Representations including <i>Draft DCOs</i> in respect of Requirements.</p>
1.0.3	<p><b>Design Mitigation: Adverse effects</b></p> <p>Are the measures set out in section 6.7 of the Environmental Statements (ES) (Onshore Schedule of Mitigation) sufficient</p>	<i>not reproduced</i>	<p>SASES disagrees with the Applicant's response and would refer the ExA to its response to 1.0.3 at Deadline 1.</p> <p>With regard to PRow SASES agree with SCC that a flawed approach has</p>

	<p>to mitigate any adverse effects from the proposed substations and National Grid substation and enable the projects to satisfy the requirements of EN-1, the NPPF and local policies for visual amenity, landscape, public rights of way and heritage matters?</p> <p>a) Provide reasons for your answer. b) If not, what further measures are required?</p>		<p>been taken by the Applicants to assessing the impact of the development on the rights of way network in Friston. The lack of information on timing of the projects in relation to loss of amenity to local residents needs to be addressed by the Applicant now.</p> <p>SASES disagree with SCC that mitigation could be in the form of a booklet for the local community detailing historic features etc. Friston already has a publication by Clarissa Thomas "Friston – A Short History of a Suffolk Village" commissioned by the village to mark the new Millennium. Copies have been provided to the ExA.</p> <p>SASES also disagree with the Councils' proposal (in their SoCG) that an amenity area, such as a field, be provided for a period of 10 years in mitigation for the loss of PRowS. Group exercise in a field can in no way compensate for the loss of a 3-mile circular walk, suitable also for exercising dogs off lead and jogging.</p>
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<p>ExQs 1.0.8) Design Principles</p>	<p>a) In the context of EN-1 paragraph 4.5.5, explain how the design of the EA1N and EA2 projects meet the National Infrastructure Commission's Design Principles for National Infrastructure (February 2020) in respect of Climate, Places, People and Value, both offshore and onshore and in all three phases of construction, operation and decommissioning.</p> <p>b) Comment on the desirability of implementing the following measures to ensure that good quality sustainable design and integration of the proposed substations and National Grid substation projects into the landscape is achieved in the detailed design, construction and operation of the projects. How might they be secured? Are any further measures appropriate?</p> <p>i) A 'design champion' to advise on the quality of sustainable design and the spatial integration of energy infrastructure structures, buildings, compounds, security fences, landscape, heritage, woodland, new</p>	<p>a) Paragraph 4.5.5 of EN-1 states that Applicants should consider taking independent professional advice on the design aspects of a proposal. In particular, Design Council CABE can be asked to provide design review for nationally significant infrastructure projects and applicants are encouraged to use this service. As per Chapter 5 EIA Methodology (APP-053) the Projects are based on a project design envelope (or 'Rochdale Envelope') approach. It is recognised by the Planning Inspectorate (The Planning Inspectorate 2018) that, at the time of submitting the applications, offshore wind developers may not know the precise nature and arrangement of infrastructure and associated infrastructure that make up the proposed development. Acknowledging that the onshore substation and National Grid substation must function efficiently and safely as substations, the Outline Onshore Substation Design Principles Statement (APP-585) submitted with the Applications, commits the Applicants to (amongst other things):</p> <ul style="list-style-type: none"> <li>• A design review of the landscape and building design proposals (i.e. Design Council or Shape East);</li> <li>• Consideration of 'Good Design' in line with the requirements of Overarching National Policy Statement for Energy (NPS-EN-1). The Applicants have submitted an Outline National Grid Substation Design Principles Statement to Examination at Deadline 1 (ExA.AS-6.D1.V1), and the Applicants will amend the draft DCO (APP-023) at Deadline 3 to require the layout, scale and external appearance of the National Grid substation to be in accordance with the Outline National Grid Substation Design Principles Statement. The Applicants note that the National Infrastructure Commission's Design Principles for National Infrastructure was published a number of months after submission of the Applications and has therefore not</li> </ul>	<p>1. SASES remains concerned that the currently proposed design of the EA1N and EA2 substations appears to be a clone of that implemented for EA1 at Bramford, a site having significantly fewer environmental challenges than at Friston, and that significant design improvement may be possible to achieve lower visual and other adverse impacts.</p> <p>Accordingly SASES believes that the power engineering aspects of the substation design, as well as the aesthetic aspects, should be subject to a transparent 'peer review' process by persons or organisations of relevant competence acting as 'critical friends' or as a 'design review panel'. SASES Deadline 1 responses, including WRs and ExQs1 answers provide a more detailed position.</p> <p>2. SASES has similar concerns with regard to the design of the National Grid substation, and in particular does not accept that the choice of AIS or GIS technology can be left until post-consent as NGET has many years' experience with both technologies, e.g. at Bramford substation, and the requirements of the current projects have been available for several years.</p>

	<p>landscape features, public rights of way and visual amenity.</p> <p>ii) A 'design review panel' to provide informed 'critical-friend' comment on the developing sustainable design proposals;</p> <p>iii) An approved 'design code' or 'design approach document' (as approved in the Hinkley Point C Connector Project(EN020001)) to set out the approach to delivering the detailed design specifications to achieve good quality sustainable design;</p> <p>iv) An outline, including timeline, of the proposed design process, including consultation with stakeholders and a list of proposed consultees.</p> <p>v) In the opinion of the local authorities and other statutory agencies, would the implementation of any or all of the above measures assist in determining post-consent approvals (including the discharge of requirements) in relation to achieving good design?</p>	<p>been incorporated specifically within the design principles. There are however a number of common themes that are reflected in the Outline Onshore Substation Design Principles Statement(APP-585). The Applicants will review the National Infrastructure Commission's Design Principles for National Infrastructure report and consider the updating of the Outline Onshore Substation Design Principles Statement(APP-585) and Outline National Grid Substation Design Principles Statement. Any updates to these documents will be submitted to Examination on Deadline 3.In response to Question 1.0.8(b) specifically:</p> <p>I.The Applicants consider that sufficient skill and experience rests within the Applicants' design team to achieve the objectives of a 'design champion' and are not supportive of the appointment of a design champion:</p> <p>II.The Applicants consider that sufficient skill and experience rests within the Applicants' design team to achieve the objectives of a 'design review panel' and are not supportive of the appointment of a design review panel. The measures set out in the approved Onshore Substation Design Principles Statement will provide the framework for delivering sustainable design principles.</p> <p>III.The Applicants consider that the Outline Onshore Substation Design Principles Statement(APP-585) and Outline Onshore National Grid Substation Design Principles Statement(to be submitted to Examination at Deadline 1) sets out the Applicants' approach to delivering the detailed design specifications to achieve good quality sustainable design.</p> <p>IV.An update to the Outline Onshore Substation Design Principles Statement(APP-585) and Outline Onshore National Grid Substation Design Principles Statement will be submitted at Deadline 3 to provide an outline, including</p>	<p>There is also a concern that if land were purchased sufficient for the larger footprint of an AIS substation then the choice of GIS technology would free up land which could be used for the infrastructure needed for future projects.</p> <p><i>SASES Written Representations on the Substation Design and Rochdale Envelope refer.</i></p>
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1.0.16	<p>Site selection: Friston grid connection point (Grove Wood) In paragraph 17 of Appendix 4.2 (RAG Assessment for Onshore Substations Site Selection in the Sizewell Area) [APP-443] you say that "The onshore study area was extended westward following consultation with Suffolk County Council (July, 2017) to look further west by potentially crossing Aldeburgh Road. This area was previously excluded due to the potential interaction with residential titles." You also note that "Aldeburgh Road would potentially act as a significant constraint, and that</p>	<p>a) The main driver for extending the onshore study area westwards was the avoidance of impacts upon the Suffolk Coast and Heaths AONB. Appendix 4.3 Suffolk Coasts and Heaths AONB Impact Appraisal of ES (APP-444) sets out the detailed appraisal of the eight zones considered for locating the onshore substations and National Grid substation. This appraisal concludes that the development of substations within any of the eastern zones (zones 1 - 4 and zone 8), which are located within or on the edge of the AONB, would be likely to result in significant effects on some of the special qualities of the AONB. Development of substations in the western zones (zones 5 - 7 (Grove Wood)) would be likely to avoid significant effects on the special qualities of the AONB. b) Whilst the reason for extending the study area to the West relates to the AONB, as outlined above, its extension as far as the Grove Wood tension pylon is that this more substantial pylon may not require such extensive modification to facilitate SPR's</p>	<p>SASES's understanding from meetings with SPR Senior management has been that it was decided to investigate the feasibility of Substation sites to the west of Aldeburgh Road, Aldringham in order to avoid the risk of being refused consent for a substation site on AONB land and in view of determined opposition from EDF to a site on its land adjacent to Sizewell nuclear power stations already assigned to the energy industry.</p> <p>The Applicant has presented the site selected on Aldeburgh Road, Aldringham for the cable crossings as the only feasible crossing place.</p>

	<p>extension (of the study area) westwards would be counter to the achievement of economy and efficiency” but nevertheless “the onshore study area was proposed for extension.” a) A substantial apparent reason for extending the study area westwards appears to have been that the Grove Wood pylon, being more substantial, might not require such extensive modification as other straight-through pylons to the east (i.e. towards Sizewell). Were there other technical reasons that bore on location selection? b) Given the impacts on residential property, economy and efficiency, and that the dDCO is principally intended to authorise the construction and operation of an Offshore Wind Farm, please explain why the substation site at Grove Wood was chosen and not a site further east? c) Could the length of the onshore cable route have been reduced, removing or reducing the need to cross the Leiston-Aldeburgh</p>	<p>connection as other ‘straight-through’ pylons to the east. With reference to Appendix 4.3 Suffolk Coasts and Heaths AONB Impact Appraisal of the ES (APP-444) substations at Grove Wood would have notably better regard to the nationally protected landscape status of the AONB. ‘Exceptional circumstances’ and ‘public interest’ in line with paragraph 5.9.10 of NPS-EN1 would need to be demonstrated if the substations were to be sited within the AONB or in locations that can be considered as forming parts of the ‘setting’ of the AONB. Development at Grove Wood is unlikely to have any significant effects on the special quality of the nationally protected AONB landscape. The Applicants note that some consented and existing offshore wind farm projects have substations at much greater distances inland than is being proposed for the Projects, necessitating cable routes of much greater lengths e.g. Vanguard Offshore Wind Farm (60km onshore cable route) and Dudgeon Offshore Wind Farm (40km onshore cable route). c) As noted, the main driver for selecting the locations of onshore substations and National Grid substation was the avoidance of impacts upon the Suffolk Coast and Heaths AONB. The preferred locations necessitate a longer onshore cable route. An offset between the onshore cable route and National Grid overhead lines is required. From east of Aldringham, ‘pinch-points’ and residential development prevent the onshore cable route from following near to the National Grid overhead lines any further west. National Grid’s role in site selection was to provide the substation parameters that needed to be accommodated by sites</p>	<p>6.3.4.2 Onshore substation Site Selection RAG Assessment [APP-443] stated that the process of the onshore cable corridor routeing would be captured in a separate subsequent cable routeing ‘optioneering’ exercise.</p> <p>4.9.1.3.4 of [APP-052] states at 146 that: “Following an ‘engineering feasibility review’, it was deemed feasible to cross Aldeburgh Road if woodland was removed immediately west of Aldeburgh Road, north of Fitches Lane.</p> <p>The Applicant does not appear to have published reports on</p> <ul style="list-style-type: none"> <li>a) cable route optioneering</li> <li>b) an ‘engineering feasibility review’ on that crossing point</li> <li>c) the impact on residential titles close to the Aldeburgh Road, Aldringham, the ‘pinch point’ crossing</li> </ul> <p>We refer to the SASES written representation concerning Construction – Onshore Cable Corridor [REP1-371]</p>
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	<p>SSSI or the Sandlings SPA, and eliminate the need for the remainder of the onshore cable route to follow essentially the existing National Grid overhead lines all the way to Grove Wood, with all the associated impacts, particularly on residents and the natural environment? To the extent that responses to this question rely on any advice to the Applicant from National Grid that this location was broadly preferred by National Grid, the Applicant is asked to document that advice. National Grid may comment at Deadline 2.</p>	<p>under consideration. The Applicants undertook the site selection process.</p>	<p>4.3.2 Site Selection - Cable Route - Cable corridor through Aldringham, Section 2 (west) and Section 3b, paras. 56-68</p>
<p>ExQs 1.0.17) Site selection: Friston grid connection point</p>	<p>In OFHs 1 –2 (7 –9 October 2020), a common emerging theme from oral submissions was that the Friston connection point location had perhaps been selected at least in part because it offered potential expandability.</p> <p>a) Do you understand this to be the case? It was suggested that a number of further grid connection offers have either been formally made or informally proposed by</p>	<p>a) The Applicants selected the onshore substation and National Grid substation locations to reflect the requirements of the Projects only and did not consider potential expansion of the National Grid substation. Selecting sites for the onshore substations and National Grid substation was a process that considered multidisciplinary principles and criteria that were selected based on well established guidelines. The process, along with the various options considered and the reasons for their dismissal / selection is fully detailed in section 4.9 of ES Chapter 4 Site Selection and Alternatives (APP-052).</p>	<p>This response appears to be inconsistent with the response given in connection with NGV-002 (see comments on NGV-002 in separate Comments on SoCG document) as the land selected for the NGET substation and associated screening seems to be greater than that specifically required for EA1N and EA2 alone.</p> <p>Layer ‘22-05 linework’ of the OLMP dated 21/08/19 clearly shows as a blue outline an area of land of unspecified</p>



	<p>National Grid that could have the effect of bringing further transmission connections to this location.</p> <p>b) Please catalogue any additional connection offers that have been made on a formal or informal basis of which you are aware and submit the best available summary descriptions of the name, purpose, developer and effects of any additional connection proposals that might use this location. To the extent that responses to this question by the Applicant rely on any advice to the Applicant from National Grid, the Applicant is asked to document that advice. National Grid may comment at Deadline 2</p>	<p>b)Connection offers for other projects (those not proposed by the Applicants) are the responsibility of National Grid Electricity System Operator Limited. The Applicants do not have such information.</p>	<p>purpose, but can now be seen to very similar to the land shown in Figure 1 of Ref. 2 referred to in NGV-002 which is for NGET substation expansion for the Nautilus and EuroLink projects.</p>
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<p>1.6.1 (Ref. 1 p4)</p> <p>NSIP Definition of the Authorised Development</p>	<p>Schedule 1 paragraphs 1 and 2 of the dDCO [APP-023] describes the authorised development as two NSIPs:</p> <ul style="list-style-type: none"> <li>• A nationally significant infrastructure project as defined in sections 14 and 15 of the 2008 Act (the wind turbine generator array) with associated development to make all of the offshore and onshore grid connection works; and</li> <li>• A nationally significant infrastructure project as defined in sections 14 and 16 (electric lines) (for the connection point and National Grid substation works). Work No. 41 is the National Grid substation itself.</li> </ul> <p>a) Is there an anticipated point in the period to 2030 at which the proposed development that is the subject of the East Anglia ONE North and the East Anglia TWO applications could in aggregate cease to be the predominant users of Work No. 41?</p> <p>b) If additional grid connections were to be made at this location, what are the implications for Work</p>	<p><b>NGET</b></p> <p>a) In relation to Work No. 41 EA1N and EA2 require two bays in total to provide a connection and that is all that is included in the promoter's DCO applications. See response to (b) below.</p> <p>b) (i) Yes, other connectees would require extensions to the National Grid substation (outside of Work No. 41 to provide additional bays) but these would need to be the subject of separate consents.</p> <p>(ii) Yes, additional bays as explained above.</p> <p>(iii) Any response relating to connection agreements is for NGESO to provide.</p>	<p>1. NGET are now stating that only two bays <u>in total</u> are required for the connection of EA1N and EA2. In this case why are nine bays referred to in the Case Study Ref. 3 p20? (previously presumed to be two bays inward for <u>each</u> of EA1N and EA2, plus two bays outward for <u>each</u>, plus one bay of unknown purpose).</p> <p>2. NGET should be asked to confirm that as the proposed NGET substation is to be purely for the purposes of EA1N and EA2 they will comply with the EA 1989 in all respects by ensuring that the design capacity, land take, physical arrangement and materials chosen for the NGET substation are strictly limited to those necessary to accept the rated power from these projects and not capable of accepting further capacity without the approval of another Consent Application.</p> <p>And moreover that NGET will not use any Permitted Rights they may claim to have to vary the technology or design in any way to accept further connections or increase capacity without the approval of another Consent Application.</p> <p>It is noted from the representations made by NGV (e.g. Ref. 2) that the</p>

	<p>No. 41 and any directly related works:</p> <p>i. Will additional land be required;</p> <p>ii. Will additional development (physical infrastructure be required); and</p> <p>iii. If the responses to (i) and (ii) above are affirmative, can any clear projection be made as to the timing, extent and impact of these additional proposals?</p>		<p>current SPR proposals have already made allowance for additional land to be used by the Nautilus and EuroLink projects.</p> <p>Please refer to SASES <i>Written Representation Cumulative Impact</i></p>
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**References:**

**Ref. 1**      **ExQs1 1.6.1**    <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-002798-DL1%20-%20National%20Grid%20Electricity%20Transmission%20PLC.pdf>

**Ref. 2**      **NGV-002**      [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-002634-ExASoCG19D1V1EA1NEA2DraftStatementofCommonGroundwithNationalGridVentures\\_378254\\_1.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010077/EN010077-002634-ExASoCG19D1V1EA1NEA2DraftStatementofCommonGroundwithNationalGridVentures_378254_1.pdf)

**Ref. 3**      Page 20 of <https://www.nationalgrid.com/uk/electricity-transmission/document/132296/download>