



## SPR EA1N and EA2 PROJECTS

### DEADLINE 11 – RESPONSES TO APPLICANTS D10 COMMENTS ON SASES D9 SUBMISSIONS

Interested Party: SASES      PINS Refs: 20024106 & 20024110

Date: 7 June 2021      Issue: 1

#### INTRODUCTION

1. The following responses are made on the Applicants comments on SASES' deadline 9 submissions (REP10-020) submitted at D10. SASES has only responded by exception.
2. The fact that SASES has not responded to any particular comment made by the Applicants does not mean that SASES agrees with the comment.
3. References to ID numbers are the ID numbers used in the Applicants' comments.

#### 2.1 SASES' Comments on the Applicants' Deadline 8 Submissions In Respect Of Noise (REP9-082)

**ID4** - Because the Applicants have declined to provide key information including 1/3 octave band spectra to enable tonality to be assessed (in sharp contrast to other comparable schemes) the ExA and the Secretary of State cannot know whether the required noise limits are capable of achievement. This is not a matter which can be left to the "design process" post consent.

**ID7** - The statement concerning "additional distance" has no meaning as background noise is unaffected by distance. "Preference" is not a valid consideration as the determination of background noise and rating level is a matter of fact.

**ID8** - The detailed explanation of context does not reduce the magnitude of the impact in the circumstances applicable in this case.

**ID9** – The statement concerning the commitment to R27 is only correct if the necessary mitigation needed is shown to be practicably achievable prior to consent.

**ID10** – The recent Environmental Statements do not "assume". They provide hard data concerning the likely tonality.

The reference to an unspecified "range of measures" (last paragraph) indicates that the "state of the art" has been reached as far as noise control by selection, design and specification of each individual item of equipment is concerned. This is of concern given the necessary mitigation needs to be shown to be practicably achievable prior to consent.

**ID11** – "internally generated sounds" usually arise from heating systems, kitchen equipment and other items which do not normally operate at night. Because of the presence of room modes which may favour single-frequency sounds and enhance their level, sound indoors can be more perceptible than it is out of doors.

**ID12** – first bullet - Whether transformers and shunt reactors only represent a small proportion of the total number of individual items of equipment is irrelevant. Further their noise emissions are fully capable of detailed calculation, which has not been done. The tables do not provide the necessary 1/3 octave band spectra, as have been provided in other comparable cases.

**ID12** – second bullet - The word “middle” is misleading. The potential prominence of tonal noise above background is also likely around midnight and in the early morning which it is established are particularly sensitive times.

**ID12** – second paragraph - The practicability of such enclosures has to be demonstrated prior to consent. With regard to the statement “*it is likely that any tonal components associated with the transformers will be significantly masked by emissions from other equipment*” it is possible to calculate this probability/likelihood, and the ExA and the Secretary of State should not have to rely on an assertion unsupported by proper engineering analysis.

**ID12** - third paragraph – The procedures in annexes C and D concerning the assessment of tonality should be followed by the Applicants before the ExA and Secretary of State reach their conclusions.

**ID13** - Agreed, tones are likely to require more demanding criteria than those given in NANR45.

**ID16** - The necessary level of detailed prediction has been undertaken on other projects. The Applicants have not provided any reasoned explanation as to why they cannot do the same here.

**ID29(e)** - It does not follow that identification of the meteorological conditions ensures that appropriate meteorological conditions are chosen.

**ID30(a)** - The Applicants’ evidence is based on unjustified exclusion of the most relevant background noise measurement results at SSR9 and despite repeated requests no logical explanation for that exclusion has been provided. These results place Friston in a league of its own with the conclusion that the proposed substations site is simply in the wrong place.

**ID30(b)** – As the Applicants’ opinion is that this difference is negligible then presumably 30 dB can be accepted by the Applicants.

## **2.2 Comments on Substation Design Principles Statement (REP9-078)**

**ID5** – Design Oversight - The Applicants have failed to respond to SASES request that a Design Review Panel be appointed as recommended by the National Infrastructure Commission and the Treasury Report of November 2020. Given the variety of Engineering project challenges raised during the examinations SASES regards such a Panel as essential. It must include knowledge across all aspects of the project so as to be able to function effectively as a “critical friend”.

SASES notes that current Design Council promotional material ([Ref. 1](#)) documents their ability to run design reviews with expert skills on a wide variety of topics, not just architecture. Extension of the standard Design Council review skill set beyond aesthetics to include broad engineering expertise able to help set and review detailed design proposals, including the substations themselves, and landscaping, would help address this issue. But such a review panel must be independent and operate openly with full public transparency.

**ID6** – Design Oversight - SASES is surprised by the response. At the public meeting held at Thorpeness Country Club on 15 October 2018 Ian MacKay for the Applicants stated, in response to questioning as to the derivation of the EA1N and EA2 substation designs being presented, that the designs were taken from the EA1 substation. The floor plan and general arrangement of electrical apparatus proposed for the EA1N and EA2 substations is clearly very similar to that designed for EA1, including the undesirably prominent harmonic filter stacks, initially specified as being enclosed and 21m high at the Phase 1 PIDS. Although obviously some redesign will be required to reflect the increase in system voltage from 220kV to 275kV the provenance of the current proposed design seems clear.

**ID7** - SPR Substations Rochdale Envelope - The preliminary design footprint of the EA1 substation was specified in Requirement 10 of the EA1 DCO ([Ref. 2](#)) as having a maximum size of 190m x 150m (28,500m<sup>2</sup>), and this was also the As Built size. It should be noted that the original expectation was that this footprint would house a 1.2GW HVDC Converter Station whereas in fact only a 700MW HVAC substation was built. SASES maintains the view that its comparative metric of EA1N and EA2 against EA1 and other projects has significant merit.

**ID10** - SPR Substations Rochdale Envelope - SASES has provided further information on this topic in its D10 submission [[REP10-058](#)]. At ISH16 Mr McGrellis for the Applicants accepted the feasibility of the proposed split capacitor bank approach.

**ID12** - National Grid Substation Design Issues - The Applicants make clear that specification of modern designs of GIS equipment should lead to a lower overall building height but that the existing Rochdale Envelope would also allow the use of older style equipment. On this basis SASES believes that the proposed GIS building height specification should be reduced to only that required by modern equipment.

### **2.3 SASES' Comments on National Grid Substation Extension Appraisal (REP9-075)**

**ID6** – the Applicants have quoted paragraph 4.9.2 of NPS EN-1 which states that “wherever possible, applications for new generating stations and related infrastructure should be contained in a single application”. The Applicants’ position is that “related infrastructure” should not only extend to the Applicants’ substations but the National Grid infrastructure as well (substation, cable sealing ends and pylons/realignment works). However this does not bear examination as whilst the infrastructure will provide a connection for the Scottish Power projects it will also be a connection hub for other projects. Therefore it cannot be regarded as “related infrastructure” in the context of the Scottish Power projects.

The Applicants further state that the “*The National Grid infrastructure “is of a size and scale that is necessary to enable the connection of the East Anglia TWO and East Anglia One North projects only”* (emphasis added). This statement is incorrect since the Nautilus and Eurolink interconnectors will be able to connect at Friston by merely extending the National Grid substation (which is described by National Grid as “standard”) and which will require no changes to the three cable sealing ends or to the connection to one of the circuits direct from the National Grid substation. Further for the purposes of the Scottish Power projects there is no need for there to be a connection to all four of the Sizewell to Bramford circuits (the Galloper windfarm only connects to one circuit at Sizewell) or for one of the cable sealing ends (which is the largest and has the greatest landscape and heritage impact) to include a circuit breaker which will break the line between Sizewell and Bramford. No rationale has been provided as to why the Scottish Power projects require one of the circuits to have this facility. Further if only one of EA1N and EA2 is constructed, and given that there will be no reduction in size of the National Grid infrastructure, this will result in National Grid providing unnecessary capacity and causing unnecessary environmental damage contrary to Section 9 and Schedule 9 of the Electricity Act 1989.

In addition if the National Grid infrastructure is only necessary to enable the connection of the Scottish Power projects then the Applicants should be able to accept SASES proposed addition to the requirements in the draft DCOs that the National Grid infrastructure and the operational access road will only be used for EA2 and EA1N.

**ID9** – as so often confidentiality is a convenient excuse. Whilst NGET, NGESO and NGV are separate divisions they are all part of National Grid. If there was a genuine willingness to engage with the issues, matters of confidentiality could be addressed particularly in the context of assessing the environmental impacts of multiple infrastructure projects.

**ID15** – the Applicants refer to processes which “allow comment and scrutiny”. However the most important process in the context of these and other projects is the CION assessment process. As the examining authorities are aware SASES has met strong resistance from National Grid in disclosing CION assessment documents under the Environmental Information Regulations receiving only highly redacted versions of the relevant assessments. More recently in response to SASES’ second EIR request for the latest CION assessments, including for the North Falls and Five Estuaries projects, National Grid has even refused to provide redacted versions of the CION assessments leaving the only avenue of recourse to the Information Commissioners Office which is not feasible given the timescale of the examinations.

**ID26 & 28** – the Applicants seem to have misunderstood the issues with regard to land use which is not just in relation to land use at the substations site itself, but the land required in the vicinity of the substations site (which will almost certainly be entirely, or at least to a great extent, the best and most versatile agricultural land) required for the two 12 acre footprint 24m high convertor stations plus the substantial landscape screening which will undoubtedly be necessary.

**ID29** – it is notable that the Applicants seem to have no difficulty in making an assumption about the interconnector projects when the assumption might be in their favour.

**ID31** – the Applicants admit that the upper elements of the National Grid substation will be visible notwithstanding the mitigation planting. As always even that degree of mitigation is dependent upon optimistic growth rates.

**ID37** – the Applicants have referred to the Photomontages with Potential National Grid Extensions Bays (REP8 - 071 – REP8–073). In considering these together with the drawings attached to the Design and Layout of the Substation (Additional Submission - EA1N&EA2 Applicants’ Response to Rule 17 Questions of 13 May) prepared by the Applicants dated 21 May 2021, there are omissions and errors in both in a key photomontage and the drawings relating to the representation of the pylons and cable sealing ends. Further details are set out in SASES’ Deadline 11 submission, Comments on the Drawings in the Design and Layout of the Substations. SASES has previously raised concerns about the accuracy of the photomontages which the Applicants have denied.

#### **2.4 SASES’ Comments on Applicants’ Deadline 8 Flood Risk Submissions (REP9-080)**

As many of the issues raised within these comments were discussed at ISH16 SASES refers to its post ISH 16 Submission submitted at Deadline 11.

**ID3, 12, 26 & 27** – the Applicants refer to infiltration being the primary option for drainage. Based on the Applicants’ own submissions this is clearly not the case.

**ID8** – See paragraphs 16-19 of SASES Post ISH 16 Submission submitted at Deadline 11.

**ID9** - the Applicants' statement that they have "*continually considered both fluvial and pluvial (surface water) flood risk*" is incorrect. The RAG assessment on which the Applicants' site selection was based did not include a consideration of pluvial flood risk.

**ID13 & 26** – the point is "*the Applicant has not proven whether QBAR flow rates will mitigate (or even increased) flood risk in Friston*". [emphasis added]. A mere statement of commitment does not result in "*no increased risk of flooding to Friston*".

**ID28** – this is incorrect SASES refers to the cross-section of the SuDs basins set out in the latest OODMP (REP8-064) at:

Appendix 4: Infiltration Only Scheme Figures

Appendix 6: Hybrid Scheme Figures

Appendix 8: Indicative Attenuation Only Scheme Figures

**ID30** – a "*concept*" and figures "*provided for indicative purposes only*" are inadequate for the purpose of demonstrating the feasibility of the Applicants' proposed flood risk mitigation.

**ID34, 35 & 36** – SASES refers to its Comments on National Grid Substation Extension Appraisal(REP9-075).

## **2.5 SASES' Comments on Draft DCOs Submitted at Deadline 8 (REP9-079)**

As many of the issues raised within these comments were discussed at ISH17 SASES refers to its post ISH 17 Submission submitted at Deadline 11.

## **2.6 SASES' Comments on the Applicants' CAH3 Submissions REP9-077**

**ID3** - SASES responses to comments on its proposed Pathfinder are below (ID11 and ID14).

**ID4** - SASES notes that the Applicants have failed to confirm their intention to build out both their projects to maximum capacity by increasing the power output in the latest drafts of the DCOs to beyond 100MW despite indicating that they might be prepared to increase the figure for power output.

**ID5** - A major concern SASES has about reductions in power output to below the maximum authorised by DCOs is that historical evidence (e.g. EA1 and Rampion OWFs) shows that when this occurs there is no commensurate reduction in land area taken or provision made to subsequently build out projects to full capacity. Such as by installing OFTO infrastructure capable of the maximum consented power for later OWF construction. This results in reduced economy, efficiency and coordination, contrary to the Electricity Act 1989.

**ID6** - The issue is one of acceptable site selection. An increase in cable route length should not be used to justify selection of a site which is fundamentally flawed due to flood risk, noise and other environmental impacts as previously documented by SASES. A senior representative of the Applicant speaking in a private meeting with SASES representatives on 18 July 2018 described the cost of the onshore cable route as being only a trivial item in the overall project cost. This strongly supports the Harrow Lane and Old Leiston Airfield sites being worthy of proper evaluation and they should have been included within the original site selection process, which was deeply flawed as previously documented by SASES.

**ID7** - SASES believes that the economies in cabling and cable trenching resulting from the use of HVDC can more than compensate for any project challenges involved. Indeed the Applicants were originally proposing to deliver 3.6GW of power from its offshore wind farms to Bramford using HVDC with three 1.2GW HVDC connections. And the currently planned implementation for EA3 demonstrates that in just a few years technology has advanced sufficiently for the original requirement for two cable trenches per 1.2GW to be reduced to one (now carrying 1.4GW) with related cost savings in cabling and civil works.

NGESO have made clear in their report from the 2020 Offshore Coordination Review that the issue of raising the SQSS 1320MW Infeed Loss Limit to 1800MW will be reviewed at the beginning of the Phase 2 activities of the Review ([Ref. 3](#)). This should simplify the use of HVDC Bipole for 1.7GW by removing any concerns about simultaneous tripping of both poles.

SASES suggests that the ExAs should require National Grid and the Applicant to revisit, update and publish the cost justifications for a Grid Connection at Friston substation, with associated new NGET substation, taking into account the outcome of the OTNR and technology advances since the original Grid Connection was agreed. This work should be completed before any conclusions are reached about the validity of the current proposals.

## **2.7 SASES' Updated Pathfinder Clarification Note (REP9-076)**

**ID11** - Loss of Connection Issues - SASES notes the Applicants' comments on the SQSS limit and the impact of tripping and is continuing its enquiries. SASES has previously pointed out that during the NGESO Coordination Review considerable support was offered to the increase of the 1320MW Infeed Loss Limit for wind farms to the 1800MW limit applicable to other offshore power sources such as Interconnectors, and that this avenue should be explored before dismissing the feasibility of SASES proposals.

**ID14** - CION Compliance - It is incorrect to state that SASES has not considered implementation costs of its Pathfinder proposal. High level assessments have been made by SASES to compare the overall costs of HVAC connections to either Bramford or Friston compared with a HVDC connection to Bramford, based on publicly available information from a variety of sources. The draft results support an HVDC connection to Bramford as being economic, efficient and coordinated, as well as having lower adverse environmental impact.

## **2.8 SASES' Comments on Other Deadline 8 Submissions(REP9-083)**

### **Outline Landscape and Ecological Management Strategy (REP8-019)**

**ID6, 7 & 8** – the Applicants' use of the expression "*best chance*" whilst noting that "*differences of professional opinion remain regarding the growth rates*" underlies why the forecast growth rates and not merely the maintenance regime need to be secured in the DCO. At the moment only the maintenance regime is secured. The Applicants' reference to "*anecdotal evidence*" is completely unsatisfactory. By contrast SASES has the expert opinion of Jon Rose who has over 40 years direct and hands on experience within the horticultural and landscape industries. All of this has been in Suffolk and the immediate surrounding counties. His report forms the last three pages of SASES' Landscape and Visual Written Representation REP1-365. His view is that:

*"The expected growth rates of 30cm per year for the first five years followed by 50cm per year for the ten years following is in my opinion optimistic given the present dry summers*

*experienced in Suffolk. I would say that these growth rates are only possible given a nursery situation of intensive irrigation and care.”*

Further

*“Given the latest predisposed weather conditions of very dry Springs with little if any rain during the critical establishment period and given the types of soils in the area; high losses could be expected. I have seen losses up to 70% - 85% in nearby locations, necessitating a replanting program.”*

## **2.9 SASES’ Comments on the Quality of Stakeholder Engagement (REP9-081)**

See separate submission (A) Statement Regarding Ground Investigation Works (REP 10–029) and (B) Response to Applicants’ Comments SASES’ Quality Of Stakeholder Engagement Submission (REP 10-20 Section 2.9).