

SASES Written Summary of Submissions on Design & Rochdale Envelope

[Agenda Item 4(b)(a)]

1. The authorised development in Part 1 of Schedule 1 of the draft DCO does not fix parameters for the Substations (“SS”), simply describing “a new onshore SS at Grove Wood Friston” (Work No.30) and “a new national Grid SS to the NW of the [SPR] S/S” (Work no.41). The parameters are only set to the extent provided for in the Requirements (in Schedule 1 Part 3).
2. The DCO requires the certification of the “Outline Onshore SS Design Principles Statement” [APP-585] (which is a very brief and rather generalised document) and Requirement 12(2) requires submission of detailed design to accord with those principles – for the SPR SS.
3. Whilst there is no requirement in the draft DCO (similar to 12(2)) for the NG SS and infrastructure to accord with a SS Design Principles Statement, this is now proposed (see Answer to EXQ 1.0.8 [REP-105]. This step is certainly necessary as only minimal design information has been provided to date (see further below).
4. Requirements 12(3) and (5) set broad limitations on the scale of the SPR SS, including a maximum 15m height above finished ground level for buildings, a maximum 18m height above finished ground level for electrical equipment, and the fenced compound areas of the SS not exceeding 36,100m².

The NG SS parameters (Requirements 12(7)-(9)) vary significantly, depending whether AIS or GIS technology is used (up to 6m building height above finished ground level and a maximum fenced compound area of 44,950m² for AIS, and up to 16m building height above finished ground level and a maximum fenced compound area of 16,800m² for GIS).

The external electrical equipment comprised within the NG SS (AIS or GIS) must not exceed 16m height above finished ground level¹.

5. The choice of AIS or GIS technology should not be left until post-consent as NGET has many years of experience with both technologies (for example at Bramford SS), and the requirements of the current projects have been available for several years. NG should be further along in the design process by this stage of the DCO but has not adequately progressed the proposal. An election should have been made by now, to enable a proper evaluation of design and effects. It is also the case that if land is acquired sufficient for the larger footprint of an AIS SS but NG then choose to develop a GIS SS, that would free-up land² which could be used for the infrastructure needed for future projects (see below).
6. This is yet another matter where NGET/NGESO's failure to engage and cooperate with the Examination has caused real difficulties for Interested Parties (including SASES) and has plainly not assisted the ExA in its consideration of the proposals, as made clear at ISH2 and in the Action Points³ issued on 4 December 2020. It is remarkable that a NG NSIP is being promoted at this Examination, yet NGET and NGESO consider it appropriate not to participate in the Hearings, particularly as SPR was unable to answer all the questions put to it at ISH2 in relation to the NG infrastructure.
7. Whilst the principle of the Rochdale Envelope approach is, of course, recognised by SASES, there is a real danger in the present case that with such expansive parameters, lacking justification, the DCO as drafted would fail to ensure good design (as required by NPS EN-1 at 4.5), EN-3 at 2.4 and EN-5 at 2.5).

¹ NG also requires 3 cable sealing ends, 2 modified pylons and a new pylon. As detailed in the SASES DCO WRs [1-367], the DCOs do not contain a parameter for the **areas** of this infrastructure only the heights – see requirements 12 (10), (11) and (12). In this context, the plans show that one of the cable sealing ends is significantly larger than the other two (which SASES understands are to contain the circuit breakers). The design principles statement referred to in para 3 above should also apply to this additional infrastructure; it all forms part of the NG connection hub.

² This matter is also relevant to SPR's justification for the compulsory acquisition of the Order lands, in terms of the land take actually required.

³ See Action Points: 3, 7, 8, 9, 12, 16 and 22.

8. In the absence of proper justification for the parameters, SASES submit that it is very difficult for ExA to be able to judge from an electrical engineering perspective, or otherwise, whether the parameters are excessive or not.
9. However, it is apparent that the draft DCO would enable development that is far too flexible and insufficiently controlled and which will cause significant environmental harm which could be avoided in part and/or reduced⁴. For example, the maximum building height (15m) and external electrical equipment height (18m) for the SPR SS (see above) is not justified when compared to other SSs.
10. At ISH2, SASES referred to the Rampion “low impact” design for an onshore SS in West Sussex, where development is limited to 8.3m maximum height (apart from the super grid transformer horns at 10.5m) on a similar footprint area (but not footprint shape). The consented power capacity at Rampion was 700MW with AIS switchgear (cf the 800 and 900MW for EA1N and EA2), albeit that SASES understands that the built capacity was 400MW.
11. As made clear at ISH2, there obviously are differences between Rampion and the SPR proposals (including the transmission voltages - see for example the Applicant’s answer to EXQ1.10.5 [REP1-115]) but SPR’s attempts in ISH2 to dismiss the relevance of Rampion on that basis simply misses the point (or perhaps refuses to grapple with it). Rampion was not put forward by SASES as a template for Friston, the comparison was made on a qualitative basis and to show that it is possible to improve design to minimise effects - if there is a willingness to do so. (It is also notable that the original proposed Rampion design was considerably improved as a result of the consultation and examination process (see para 7 of App 2 to the SASES Design WRs [REP1-357])).

⁴ This point is made without prejudice to the SASES main case that the DCO proposals are not in accordance with the relevant NPS (s.104(3) of the Planning Act 2008) and the multiple and manifest adverse impacts (in particular the severe effects on Friston) would outweigh the benefits (s.104(7) of the Planning Act 2008) such that the DCOs should be refused consent. Alternatively, that the onshore cable route and SS should be refused and a DCO could then be made for an appropriate connection point.

12. However, at Friston, the SPR SS design appears to be based on the EA1 SS at Bramford, (so much for site specific, micro design) even though Friston is a much more environmentally sensitive area – a greenfield site in a valued and historic landscape - and EA1 is located on an existing SS site. The Project Update Note [REP2-007] recently confirms a reduction in the maximum footprint of the SPR SS to 190m x 170m, to allow an area of woodland to the west to be retained, but the limited effects of such reduction are addressed by Ms Bolger on behalf of SASES in her comments on the Project Update Note which form part of SASES Deadline 3 submissions, and they do not result in any meaningful qualitative improvement or lessening of impact.
13. The differences in design quality as judged by carefully minimised height and resultant visual impact between for example Rampion, and Bramford EA1 is very marked. During ISH2, SPR also referred to the GIS SS being built at Moray East as an example of design work elsewhere⁵. That example further emphasises the point that, given the sensitivity of the location and its proximity to a rural community, *if* the DCO scheme is consented, the standard of design must incorporate some real ambition and quality, even if that comes at an increased cost.
14. SPR's rather frantic attempts during ISH2 to resist meaningful external input is extremely disappointing to SASES and is another reason why an independent design champion is required (to address both electrical engineering requirements and aesthetics). As things stand, the ExA and the local community is effectively being asked just to take SPR's word on design. Whilst SPR might be keen to mark its own homework, the effective (albeit slightly tweaked) replication of EA1 at Friston falls far short of good design and independent input and evaluation is demonstrably necessary.
15. A further concern is that the proposed development area is materially oversized, particularly as: (i) the draft DCO provides for generation capacity to be *as low as* 100MW (definition of Work No.1 in Schedule 1); and (ii) the likelihood of future projects needing

⁵ <https://www.morayeast.com/current-works/onshore-works>

to connect to the Grid at Friston (see the SASES WRs and submissions on cumulative impact assessment (“CIA”).

16. The history of offshore windfarm projects (see the details provided in App 1 of the SASES Design WRs [REP1-357]) is that they are often downsized, in terms of generating capacity, but because of the DCO parameters, the changes have not required approval. That means the full extent of the parameters can be build out - even if no longer justified - and even if the benefits said to outweigh the harm are thus materially reduced.
17. SASES therefore consider that the Applicant should be constrained to deliver a project within a more limited range of generating capacity (see SASES WRs on the Draft DCO [REP1-367]), so that an application for a change in the project would be required if proposed capacity were to be materially reduced. To allow otherwise would enable a loss of economy and efficiency and potentially a material lack of the benefit that is said to justify the scheme. (It is also the case that the NG connection hub is designed to serve both EA1N and EA2, but only one of the SPR SS might be constructed, see below).
18. Further, the DCO authorises the acquisition of land for the greatest extent of the parameters and this large SS area would become operational land for the purposes of the relevant electricity undertakings (by Article 33 of the DCO). The consequence is that the land would attract permitted development rights under Class B Part 15 of Schedule 2 of the Town and County Planning (General Permitted Development) (England) Order 2015, which could permit further extensive development and give future flexibility of delivery of new infrastructure, potentially in relation to other projects. Therefore permitted development rights should be restricted, to prevent later significant development without planning approval.
19. As NPS EN-1 states, applying “good design” to energy projects should produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction and operation (4.5.1). Good design, in terms of siting and use of appropriate technologies can help mitigate adverse impacts (4.5.2). For the ExA to consider the proposal for a project, applicants should be able to demonstrate in their

application documents how the design process was conducted and how the proposed design evolved (4.5.4).

20. In the present case, it remains unclear how the design process was conducted, or how technology and functionality alternatives were considered to reduce adverse environmental impact. As set out above, the SPR approach instead appears essentially to replicate what has been done for EA1 in terms of the size and design of the SSs, (albeit that the Project Update Note [REP2-007] confirms a reduction in the maximum footprint of each onshore substation to 190m x 170m). Whilst SPR now says (Mr Innes at ISH2) that it is “squeezing the Rochdale envelope”, the minor footprint reduction and potential (but as yet unspecified) further tweaks to the parameters do not get near the necessary qualitative design improvements required to reduce and/or mitigate the serious and multiple adverse effects of the proposed development.
21. As to the design of the NG SS, SASES understands that the design parameters for the SS provided to SPR are, according to NGET, the standard size requirements for the SS required to connect EA1N and EA2 projects⁶. That highlights the reality that there has been no meaningful effort made to design the facility to fit its surroundings and no focus on appropriate low impact design, or adequate mitigation.
22. In response to EXQ 1.0.17, the Applicant stated that it selected the onshore SS and NG SS locations to reflect the requirements of the DCO projects only and did not consider potential expansion of the NG SS. However, the SoCG with NGV SPR (p7) [REP1-062] confirms that the proposals make allowance for additional land to be used by the Nautilus and EuroLink projects (see p5 of the NG Nautilus FAQs document and also the SASES WRs and submissions on CIA).

⁶ In a letter dated 24 November 2020 from Bryan Cave Leighton Paisner, solicitors to NGET, to Paul Chandler of Save Our Sandlings it is stated on page 2 in relation to the size of the “NGET compound”: “As above the design parameters for the sub-station have been provided to the promoter by NGET. **These are standard size requirements** for the sub-station required to connect EA1N and the A2 project.”[emphasis added] This letter is attached at Appendix 1 to the SASES written submissions on CIA.

In addition SPR as part of the documentation provided for the Phase 3.5 consultation produced a note dated 28 June 2018⁷ prepared by National Grid setting out its assessment of connection options. In paragraph 5.4 of this note it is stated that “A new National Grid 400kV substation will therefore be required somewhere in the Leiston area, beyond the Sizewell site, to connect the two proposed windfarms **and the two proposed interconnectors**” [emphasis added]. In paragraph 5.5 it is stated that “National Grid is proposing a single new 400kV substation which, subject to consent being granted, **would connect all of these new sources of generation to the NETS**. The windfarms and interconnectors would each have buried cables connecting the individual developments into that new 400 kV substation.”[emphasis added].

23. Further, the land selected for the NGET SS and associated screening seems to be greater than that specifically required for EA1N and EA2 alone. Layer ‘22-05 linework’ of the OLMP dated 21 August 2019 clearly shows, as a blue outline, an area of land of unspecified purpose which can now be seen to very similar to the land shown in Figure 1 of the SoCG which is shown as NGET SS expansion for the Nautilus and EuroLink projects.
24. SPR and/or NG has therefore considered further NG requirements and it is wholly unconvincing to suggest otherwise (see also SASES WRS and submissions on CIA and Site Selection).
25. Consistent with its submissions at ISH2, SASES respectfully endorses the ExA request⁸ that NGET confirms (without qualification) that the proposed NG SS (together with the other infrastructure which forms part of the NG connection hub) and all the land subject to compulsory acquisition proposals at Friston and in the applications before the ExA will serve only EA1N and EA2. As set out above, it is also the case that the NG connection hub is designed to serve both EA1N and EA2, but only one of the SPR SS might be constructed. NG should explain the implications for the NG NSIP requirements, in the event that only EA1N or EA2 is built.

⁷https://www.scottishpowerrenewables.com/userfiles/file/National_Grid_COIN_Process_Connection_Assessment_Note.pdf

⁸ Action Point 22.

26. SASES submits that, as the proposed NG SS is said to be purely for the purposes of EA1N and EA2, NG needs to demonstrate that it has complied with the relevant requirements of the Electricity Act 1989 (“the EA 1989”) in all respects (see the SASES WRs and submissions on Site Selection), by ensuring that the design capacity, land take, physical arrangement and materials chosen for the SS 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.
27. Given the extent and range of the material adverse impacts of the proposals, if consented, there needs to be more control on the design of SSs, to ensure what comes forward has the least possible impact, by minimising adverse effects (including the proper sequencing of construction⁹) and ensuring that significant future development cannot come forward without proper scrutiny.
28. SPR has proposed the landscape and building design of the SS should be subject to review by an organisation such as the Design Council (see Answers to EXQ 1.0.6 [REP-105]). Whilst that is welcome (to the extent that the Design Council is focused on aesthetics rather than efficient engineering design), SASES considers that the Design Principles Statement, or an additional Requirement, should require the design be subject to independent design review by industry-leading power engineering consultants, against the strict criterion of achieving the lowest possible landscape and environmental impacts, by best choice and layout of power equipment etc. It is important that the technical design choice of the electrical power equipment selected by the Applicant can be properly scrutinised - as well as the aesthetic design.
29. SASES also strongly urge (and, even at this late stage, invite SPR to reconsider and agree to) the appointment of a “design champion” to advise holistically on the quality of sustainable design and the use of a design approach methodology, such as at the Hinkley Point C Connector Project. Further, an Overview Panel (comprised of relevant experts, the

⁹ SASES is also concerned that the Applicant seeks a 7 year period to commence the project, despite its emphasis elsewhere on the urgent need for offshore wind power.

local authorities and community representatives) should be created to ensure proper input from stakeholders, including the local community. After all, it is the local community that will be blighted by the SSs and it should therefore have a meaningful say in how these immense structures, which will adversely impact and dominate the local area for at least a generation, are developed.

SASES

15th December 2020