East Anglia ONE North and East Anglia TWO Offshore Windfarms

Applicants' Comments on SASES' Deadline 10 Submissions

Applicant: East Anglia TWO and East Anglia ONE North Limited
Document Reference: ExA.AS-11.D11.V1
SPR Reference: EA1N_EA2-DWF-ENV-REP-IBR-001079

Date: 7th June 2021
Revision: Version 1
Author: Royal HaskoningDHV

Applicable to East Anglia ONE North and East Anglia TWO

Revision Summary				
Rev	**Date**	**Prepared by**	**Checked by**	**Approved by**
01	07/06/2021	Paolo Pizzolla	Lesley Jamieson / Ian MacKay	Rich Morris

Description of Revisions			
Rev	**Page**	**Section**	**Description**
01	n/a	n/a	Final for submission

Table of Contents

Glossary of Acronyms

AIS	Air Insulated Substation
AONB	Area of Outstanding Natural Beauty
APP	Application Document
AS	Additional Submission
BBPP	Breeding Bird protection Plan
BEIS	Department for Business, Energy and Industrial Strategy
CCS	Construction Consolidation Site
CfD	Contracts for Difference
CHVP	Cultural Heritage Viewpoint
CION	Connections and Infrastructure Options Note
CoCP	Code of Construction Practice
DCO	Development Consent Order
DML	Deemed Marine Licence
EIA	Environmental Impact Assessment
ES	Environmental Statement
ESC	East Suffolk Council
GDPR	General Data Protection Regulations
GIS	Gas Insulated Substation
HDD	Horizontal Directional Drilling
HF	High Frequency
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
kW	Kilowatt
LCA	Landscape Character Assessment
LCT	Landscape Character Type
LLFA	Lead Local Flood Authority
LMP	Landscape Management Plan
OLMP	Outline Landscape Mitigation Plan
LOAEL	Limited Observed Adverse Effect Level
LVIA	Landscape and Visual Impact Assessment
MMO	Marine Management Organisation
MoU	Memorandum of Understanding
MW	Megawatt
NG	National Grid
NGESO	National Grid Electricity System Operator
NGET	National Grid Electricity Transmission
NGV	National Grid Ventures
NOA	Network Options Assessment
NPPF	National Planning Policy Framework
NPS	National Policy Statement
OLEMS	Outline Landscape and Ecological Management Strategy
OLMP	Outline Landscape Mitigation Plan
OTNR	Offshore Transmission Network Review
PD	Procedural Decision
PRoW	Public Right of Way
SASES	Substation Action Save East Suffolk
SCC	Suffolk County Council
SOAEL	Significant Observed Adverse Effect Level

SuDS	Sustainable Drainage System
SWMP	Surface Water Management Plan
SQSS	Security and Quality of Supply Standard
UK	United Kingdom
VP	Viewpoint

Glossary of Terminology

Applicant	East Anglia TWO Limited / East Anglia ONE North Limited
Cable sealing end compound	A compound which allows the safe transition of cables between the overhead lines and underground cables which connect to the National Grid substation.
Construction consolidation sites	Compounds associated with the onshore works which may include elements such as hard standings, lay down and storage areas for construction materials and equipment, areas for vehicular parking, welfare facilities, wheel washing facilities, workshop facilities and temporary fencing or other means of enclosure.
Development area	The area comprising the onshore development area and the offshore development area (described as the 'order limits' within the Development Consent Order).
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia ONE North windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO windfarm site	The offshore area within which wind turbines and offshore platforms will be located.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Jointing bay	Underground structures constructed at intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
National electricity grid	The high voltage electricity transmission network in England and Wales owned and maintained by National Grid Electricity Transmission.

National Grid infrastructure	A National Grid substation, cable sealing end compounds, cable sealing end (with circuit breaker) compound, underground cabling and National Grid overhead line realignment works to facilitate connection to the national electricity grid, all of which will be consented as part of the proposed East Anglia ONE North / East Anglia TWO project Development Consent Order but will be National Grid owned assets.
National Grid substation	The substation (including all of the electrical equipment within it) necessary to connect the electricity generated by the proposed East Anglia ONE North / East Anglia TWO project to the national electricity grid which will be owned by National Grid but is being consented as part of the proposed East Anglia ONE North / East Anglia TWO project Development Consent Order.
National Grid substation location	The proposed location of the National Grid substation.
Onshore cable corridor	The corridor within which the onshore cable route will be located.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Onshore cables	The cables which would bring electricity from landfall to the onshore substation. The onshore cable is comprised of up to six power cables (which may be laid directly within a trench, or laid in cable ducts or protective covers), up to two fibre optic cables and up to two distributed temperature sensing cables.
Onshore development area	The area in which the landfall, onshore cable corridor, onshore substation, landscaping and ecological mitigation areas, temporary construction facilities (such as access roads and construction consolidation sites), and the National Grid Infrastructure will be located.
Onshore infrastructure	The combined name for all of the onshore infrastructure associated with the proposed East Anglia TWO project from landfall to the connection to the national electricity grid.
Onshore substation	The East Anglia ONE North / East Anglia TWO substation and all of the electrical equipment within the onshore substation and connecting to the National Grid infrastructure.
Onshore substation location	The proposed location of the onshore substation for the proposed East Anglia ONE North / East Anglia TWO project.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.

1 Introduction

1. This document presents the Applicants' comments on Substation Action Save East Suffolk's (SASES) Deadline 10 submissions, including the following:

   - Comments on Applicants' Topic Positions Statement (REP10-057);
   - Responses to Applicants' Comments on Substation Action Save East Suffolk (SASES) Deadline 8 Submissions (REP10-056); and
   - Addendum to Substation Action Save East Suffolk (SASES) Deadline 9 Submissions on Substation Design Principles Statement (REP10-058).

2. This document is applicable to both the East Anglia TWO and East Anglia ONE North Development Consent Order (DCO) applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's (ExA) procedural decisions on document management of 23rd December 2019 (PD-004). Whilst this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it for the other project submission.

2 Comments on SASES' Deadline 10 Submissions

2.1 Comments on Applicants' Topic Positions Statement (REP10-057)

ID	SASES' Comment	Applicants' Comments
Introduction		
1	1. The Applicants submitted a document entitled Topic Position Statements at Deadline 9 (REP9-009).	No further comment.
2	2. This document is incomplete for the following reasons. a) It reflects the position with technical stakeholders only and ignores interested parties. b) It is the Applicants' subjective view of other parties positions it is not objective. c) It is a high level summary only. d) It omits the following key topics: - site selection - design - whilst this is briefly referred to in relation to Land Use and Landscape and Visual it should be identified as a separate subject given its importance.	***Section 1.1*** of the ***Topic Position Statements*** (REP9-009) clearly sets out the document's purpose as being to provide summaries for each of the Environmental Impact Assessment (EIA) topics as set out in the Statements of Common Ground (SoCG) with the relevant technical stakeholders. The information within the ***Topic Position Statements*** is not the Applicants' subjective view. It is corroborated by the statements within the relevant SoCGs, all of which have been developed in agreement with the respective stakeholders. The ***Topic Position Statements*** (REP9-009) is not meant as a line by line reiteration of the SoCGs and detail is only provided on those matters still outstanding. Detail is provided by exception, and where matters are not discussed this is because they are considered closed (i.e. the relevant parties agree)
3	3. In respect of the draft DCOs whilst elements of these are covered within Table 2.1 a separate summary would be helpful.	As noted above, ***Table 2.1*** and ***Table 3.1*** of the ***Topic Position Statements*** (REP9-009) are aligned with the SoCGs in terms of how they consider the EIA, mitigation and the DCO. The DCO is not an EIA topic and therefore has not been discussed separately.

ID	SASES' Comment	Applicants' Comments
4	4. SASES has the following comments. The absence of a comment does should not be taken as an indication that SASES agrees with the position of the Applicants.	Noted. The Applicants have responded to SASES' comments in turn below.
Site Selection / Alternatives		
5	5. SASES's position remains that the site selection process which has resulted in the identification of Friston as the site for the connection to the National Grid is wholly flawed. As a consequence, less harmful alternatives have been improperly excluded. The errors in the site selection process are not limited to the Applicants' own process, but also the means by which the grid connection offer from National Grid, which offered a connection in the Leiston area and Friston as the site for the National Grid NSIP were not the subject of proper assessment either under EN1 or the Electricity Act 1989.	The CION is overseen by NGESO which has the best oversight of the overall national electricity transmission network and it has devised a systematic process which ensures that all relevant matters are properly accounted for within the CION process. The ExA will have seen from the extracts of the CION process that it does genuinely consider a wide range of options and refines them having regard to appropriate considerations. This ensures that it follows the legal and regulatory requirements that have been established. The Applicants have referred to the robustness of the site selection process a number of times in response to SASES representations. ***Chapter 4 – Site selectin and assessment of alternatives*** *(*APP-052) of the ES sets out the site selection process, it was also informed by consultation through Expert Topic Groups and public consultation exercises.
6	6. These matters were discussed at ISH2 and are the subject of a post hearing submission made by SASES (REP3-128). The Applicants have not addressed these issues. The noncompliance with the Electricity Act 1989 has been the subject of ongoing submissions between the Applicants and SASES, SASES' latest submission being made at D8 (REP8- 222).	See ***Section 3*** of this document for the Applicants' response to ***SASES' Deadline 8 Submission in respect of the Electricity Act 1989*** (REP8-222). Section 9 of the Electricity Act 1989 deals with the system as a whole and that is why the regulatory system provided has created National Grid Electricity Systems Operator (NG ESO) and imposed legal and regulatory duties (see ***Regulatory Context Note*** (REP2-003)). It is important when considering such matters to ensure that the full context is properly considered. Furthermore, the Applicants have made submissions on Schedule 9 and cited authority at ISH2 (***Written Summary of Oral Case (ISH2)*** (REP3-

ID	SASES' Comment	Applicants' Comments
		085)) and at Deadline 6 (***Applicants' Comments on Substation Action Save East Suffolk (SASES) Deadline 5 Submissions*** (REP6-031)).
7	7. In terms of the cable route the Applicants only offered and consulted on a single landfall and potential cable corridor route from landfall to Friston. For example there is no evidence that account was taken of proximity to residences or ecological impact on important Hundred River habitats of the proposed road and watercourse crossing place in Aldringham which has been presented as the only option. The Applicants have failed to respond to SASES requests for the 'Cable Route Optioneering and Engineering Feasibility Report' referred to in Environmental Statement - Appendix 4.2 - Red Amber Green (RAG) Assessment for Onshore Substations Site Selection in the Sizewell Area 6.3.4.2 [APP443]. This contrasts with the approach being taken by National Grid Ventures which has been evaluating several cable routes to Friston for its interconnector projects.	The Applicants undertook a robust site selection process as presented within ***Chapter 4 – Site Selection and Consideration of Alternatives*** of the ES (APP-052). This included a structured process of refining and reducing the landfall, substation and onshore cable corridor and engaged with the site selection Expert Topic Group. The Applicants also consulted with members of the public through the various Public Information Days (PIDs), specifically: • Phase 1 PIDs held during October and November 2017, which invited comments on the wide onshore study area. • Phase 2 PIDs held during March 2018, which invited comments on infrastructure locations within the onshore study area. • Phase 3 PIDs held during June and July 2018, which invited comments on the 'Onshore Cable Corridor Refined Area of Search'. • Phase 3.5 PIDs which invited comments on consideration of Grove Wood, Friston and of Broom Covert, Sizewell. • Phase 4 PIDs held during February and March 2019 which complemented the Preliminary Environmental Information Report, which invited comments on the 'Onshore Cable Corridor Study Area'. Information was gathered from the above, and also the ***Scoping Opinion*** (APP-573) and expert advice from environmental and planning specialist and the site selection ETG in order to determine at the onshore development area on which the Applications were based.

ID	SASES' Comment	Applicants' Comments
8	8. Broader alternatives arise from the Government's intention to seek better coordination of grid connections for renewable energy projects which is the subject of an ongoing review which remains relevant to these proposals. Given the five year duration of the DCOs and the length of the construction period, it is possible that either both or one of the projects will not be operational for 10 years. The Applicants' unwillingness to engage with this issue and think creatively is at odds with the Government's emerging policy in this area and the longer term 2050 objectives for offshore wind. Consistent with the short/medium term objectives of the Offshore Transmission Network Review being conducted by BEIS, SASES has made submissions in respect of a Pathfinder proposal the latest of which was made at Deadline 9 (REP9-076).	The Applicants have set out the legal and regulatory framework which is applicable to the grid connections. This includes the relevant provisions of the Electricity Act and the regulatory processes that have been created to support and implement the legislation. In addition, the Applicants have provided the detailed regulatory requirements which specifically apply to the offshore transmission regime. This is the basis on which the Applicants have developed the Projects and the associated grid connections. SASES has produced an electrical drawing and described it as a pathfinder. The technology does not exist to deliver it and at no stage has the cost of the infrastructure even been considered. The Applicants consider that the costs would be prohibitive. The Applicants' parent company has recent experience in engaging with the relevant supply chain to develop the High Voltage Direct Current (HVDC) connection for the East Anglia Three project. The Applicants provided the updated status of the Department for Business, Energy and Industrial Strategy (BEIS) work in the response to Suffolk Energy Action Solutions (SEAS) at Deadline 9 (***section 2.2*** of ***Applicants' Comments on Suffolk Energy Action Solutions' (SEAS) Deadline 8 Submissions*** (REP9-014)).
Design		
9	9. SASES considers that the projects do not meet the policy requirements concerning design and have made a number of submissions in relation to this matter and the drafts of the Substations Design Principles Statement including REP1-357, REP3-132, REP5-097, REP9-078 and at Deadline 10.	The Applicants have met the design standards within EN-1 through the range of principles and consultation measures identified within the ***Substations Design Principles Statement*** (REF). Good design has been at the forefront of the Applicants' considerations throughout, through the thorough site selection and consideration of alternatives process undertaken; the co-location of the substations; the reductions in footprint of the onshore substations; and the reduction of absolute heights for the substations - all of which have limited the geographic extent of the Projects' substations. Good design has also been demonstrated in the reduction of

ID	SASES' Comment	Applicants' Comments
		received noise levels at the nearest noise sensitive receptors. This early engagement in relation to equipment design has enabled the Applicants to commit to low noise level operational requirements. Furthermore, as set out in the ***Substations Design Principles Statement*** (REF), the Applicants have committed to further reducing the footprint, heights and received noise levels where cost effective to do so.
10	10. Whilst the introduction of the Substations Design Principles Statement is an improvement, not least as it applies to all elements of the infrastructure at Friston, that statement has a number of major flaws as set out in SASES submissions not least as it fails to address that design is not merely a matter of aesthetics but good engineering which could result in both a reduction of size and height. Further much of the additional language is not about good design or design principles but simply a narrative setting out the limited design evolution which has been achieved with the EA1N and EA2 substations. There has been no meaningful design evolution with the National Grid infrastructure.	The ***Substations Design Principles Statement*** (REP8-082) presents important design improvements that the Applicants have achieved through early supply chain engagement (such as reduction in building and external electrical equipment heights and reductions in noise limits at the nearest residential properties).). The ***Substations Design Principles Statement*** (REP8-082) also makes clear commitments within the design principles requiring the Applicants to seek to further reduce the visual extent of the onshore substations, National Grid substation and cable sealing end compounds, through appropriate equipment procurement and layout considerations; and seek to minimise the operational noise rating level **below** the limits set out in Requirement 27 of the draft DCO (REP7-006).
11	11. The parameters in Requirement 12 in respect of the Applicants' infrastructure, but not National Grid's, have been marginally improved and key items in relation to the National Grid infrastructure included. However given the more detailed information provided by the Applicants in REP 8-082, Requirement 12 would benefit from greater granularity in respect of individual components of the substation - see below. Please note SASES does not accept that the revised heights are the best that can be achieved at this stage.	The Applicants disagree with the term 'marginal improvement'. The parameters reduced represent important reductions in building and external equipment heights. The Applicants have stated on a number of occasions that design flexibility is essential in the development of nationally significant infrastructure projects, in line with EN-1. No further reductions can be achieved at this pre-consent stage. As the design process evolves and further engagement with the supply chain and designers is undertaken, the Applicants will seek to further reduce the visual extent of the onshore substations, National Grid

ID	SASES' Comment	Applicants' Comments
	[This section of (REP10-057) includes an image of ***Table 6.1*** from the ***Substations Design Principles Statement*** (REP9-082)]	substation and cable sealing end compounds, through appropriate equipment procurement and layout considerations (as per the Substations Design Principles Statement (document reference ExA.AS-6.D11.V3)).
12	12. It is regrettable that the heights of the relevant infrastructure are not sufficiently secured due to the lack of definition of finished ground levels and the Applicants not including AOD heights within Requirement 12.	The maximum height of buildings and external electrical equipment is secured by virtue of Requirement 12 (maximum heights) and the Substations Design Principles Statement (maximum AOD of buildings and external electrical equipment). This provides certainty over the maximum visual envelope of the onshore substations and National Grid substation, whilst ensuring the necessary flexibility for the detail design of the onshore substations and National Grid substation bases.
13	13. It should be noted that the NGET 400kV 22 bay GIS substation at Bramford has a height metric of 12m.	The Applicants have addressed this matter at Deadline 10 (***Applicants' Comments on Substation Action Save East Suffolk's Deadline 9 Submissions*** (REP10-020)).
Cumulative Impact Assessment		
14	14. The Applicants have made a statement of their position on cumulative impact. The Applicants have still failed to adequately assess the cumulative impact of other projects together with the proposed development. Importantly, this is a case where the authorised development would directly enable those other projects by the creation of a National Grid connection hub at Friston. It is a striking feature of these applications that they seek consent for nationally significant grid connection infrastructure with a planned capacity beyond the needs of the offshore windfarms proposed.	The Applicants have now made several submissions to the Examinations on this matter and provided the ***Extension of National Grid Substation Appraisal*** at Deadline 8 (REP8-074). The Applicants reiterate that at this stage no further information can be provided regarding the Projects' potential for cumulative impacts with the Nautilus and Eurolink due to a lack of information on the latter projects' proposed locations. There is no information regarding the proposed North Falls and Five Estuaries projects that would facilitate a CIA, and regardless both projects have confirmed they will not connect near Leiston (see AS-100 and REP7-066). Please also refer to statement NG-107 in the SoCG with National Grid Electricity Transmission (NGET) (REP8-116), which specifies that '*Only*

ID	SASES' Comment	Applicants' Comments
		National Grid infrastructure required to connect the Projects to the national electricity grid is included within the Applications (specifically Work Nos. 34 and 38, to 43 inclusive)'.
15	15. This has been ongoing issue throughout the examination touching as it does on every aspect of the projects. The issue was discussed at ISH 2 and was the subject of SASES post hearing submission (REP3-126) and an additional submission (REP4-113).	The Applicants have previously responded to SASES' position on its approach to cumulative impacts within the ***Applicants' Comments on SASES' Deadline 4 Submissions*** (REP5-017) and have no further comment.
16	16. At Deadline 8 the Applicants have conducted an exercise to appraise the impacts of the expansion of the National Grid substation to accommodate the NGV projects. That appraisal conducted is inadequate – see SASES Deadline 9 submission Comments on National Grid Substation Extension Appraisal (REP9-075)	The Applicants have responded to SASES' representations regarding the ***Extension of National Grid Substation Appraisal*** (REP8-074) submitted at Deadline 9 within its ***Applicants' Comments on SASES' Deadline 9 Submissions*** submitted at Deadline 10 (REP10-020). As noted, the Applicants consider they have provided all that they are able to in terms of an assessment of cumulative impacts with known projects with the information available at this stage.
17	17. In relation to the windfarm extension projects now known as Five Estuaries and North Falls, the Applicants have produced a piece of correspondence from the Five Estuaries developer that this project is no longer to connect Friston. This letter is notable because it proves that the Five Estuaries project was to connect Friston something which the Applicants did not acknowledge.	The Applicants assume SASES are referring to the letter submitted by Five Estuaries Offshore Wind Farm Limited (AS-100), but that SASES may have taken the meaning of the letter out of its original context in its comment. The Applicants note the wording of the letter, in which it states (emphasis added): '*By accepting this new connection offer it means that the Five Estuaries project will <u>no longer be pursuing</u> a connection at Friston, Suffolk*'. The Applicants note that, whilst Five Estuaries may have previously been considering a connection at Friston, this was never confirmed.

ID	SASES' Comment	Applicants' Comments
18	18. It is telling that no information on this subject appears to have been provided by NGESO despite Action Point 1 from ISH10. Also the fact this connection offer has moved elsewhere (if indeed it has) does not mean it will not subsequently move back to Friston if the National Grid NSIP is consented, which will no doubt require the CION assessment to be reopened and the connection point re-evaluated. EA1N and EA2 are themselves examples of a change of connection location. If the relevant CION assessments were to be provided by NGESO this is a matter which may become clearer. However despite a request by SASES under the Environmental Information Regulations National Grid has refused to provide the CION assessments for the Five Estuaries and North Falls projects despite providing redacted versions in relation to other projects following EIR requests by SASES in the past. SASES has now made a complaint about this refusal but this has to be addressed through National Grid's internal complaints procedure which takes 40 working days. This is transparently a delaying tactic by National Grid which hinders the examination process.	Both Five Estuaries (**AS-100)** and North Falls **(REP7REP7-066)** have confirmed in writing to the examination they are not considering Friston as a grid connection option. The Applicants cannot comment on NGESO's position on the CION process for these projects.
The following representations are made in respect of Table 2.1 of (REP9-009)		
19	*Land Use* 19. The Applicants' during the examinations have conceded that the operational impact of the authorised projects on land use is major. The impact is contrary to the requirements of EN-1 which at paragraph 5.10.8 states that "Applicants should seek to minimise impact on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5).	19. The Applicants identified its mistake regarding the assessment of land use impacts at a local scale as 'moderate' within ***Chapter 21*** of the Environmental Statement (ES) (APP-069) and corrected it to 'major' within the ***Land Use Clarification Note*** submitted at Deadline 1 (REP1-022). The Applicants note that, for nationally significant infrastructure projects of this size and with these land requirements, a local scale impact on land use is more difficult to avoid. When taken in the context of the regional resource of agricultural land, the land use impacts of the Projects are assessed to be minor.

ID	SASES' Comment	Applicants' Comments
	20. SASES continues to rely on its written representation made a Deadline 1 REP1-359. 21. Scottish Power has also failed to address the cumulative impact of the further developments that will take place at the substation complex site and in the neighbouring area. The National Grid Substation Extension Appraisal takes no account of additional land take that will be required near the Friston site. 22. The Applicants have included design issues within this topic given the limited measures the Applicants have taken to reduce the footprint and height of the Applicants' substations. The reduction in the footprint and height of the substations' infrastructure has not reduced the amount of land required for mitigation respect of adverse effects to the landscape, cultural heritage and flood risk. 23. National Grid has taken no steps to reduce the footprint of its infrastructure (substation and three cable sealing ends) which it has stated are "standard" and in terms of height a marginal reduction of 0.7 m has been proposed in relation to finished ground levels although no investigation has been carried out to assess whether this is feasible. Furthermore the size of the National Grid substation will not be reduced if only one project is developed.	20. No further comment. 21. The Applicants have considered cumulative land use impacts with other future projects within the ***Extension of National Grid Substation Appraisal*** (REP8-074), however they are screened out of further assessment given that any extensions would predominantly be on land that has already experienced a change of use from development of the Projects. 22. No further comment 23. There has been refinement to the National Grid infrastructure during the pre-application process, material reductions were achieved between PIER and submission of the applications. The equipment involved in the National Grid infrastructure is of a relatively standard design and evidence has been led on this matter to the ExA. Further opportunities will be taken at the detailed design stage to further reduce the scale of the infrastructure this is secured through the Substations Design Principles Statement and will build upon NGET's 'lean design' philosophy which means that during the selection, optioneering and design for any new National Grid asset, National Grid will look to build only what is required by the customers connection (i.e. the Projects' connection) and will only build with the smallest footprint possible using sustainable materials and building methods where economical to do so.
20	*Onshore Ecology* 24. SASES refers to its Deadline 1 submissions (REP1-350) and ISH7 post hearing submission (REP6-128/129). 25. SASES remains concerned that the Applicants have not submitted any data on high-frequency noise at the substation site, which would	24. Noted. The Applicants have responded to SASES' submissions at Deadline 1 (REP1-350) and regarding Issue Specific Hearing (ISH) 7 (REP6-128/129) within the ***Applicants' Comments on SASES' Deadline 1 Submissions*** (REP3-072) and the ***Applicants' Comments on SASES' Deadline 6 Submissions*** (REP7-059) respectively.

ID	SASES' Comment	Applicants' Comments
	impact on wildlife, particularly bats. The Applicants say they do not intend to comment further on this matter, which is unacceptable. 26. SASES notes that Natural England have not issued Letters of No Impediment regarding badger setts in the onshore development area, including the substations site. Natural England expressed major concern at Deadline 8 (REP8-162, Appendix C9) that the wording of the OLEMS had been amended to state that, rather than avoiding known badger setts through micrositing, the setts would be destroyed. SASES supports NE's position. 27. SASES maintains that the proposed mitigation measures in respect of badgers and bats are insufficient. Many of the onshore wildlife surveys, including otter, water vole, bats and reptiles, are incomplete or contain errors. 28. SASES agrees with the Councils that growth rates of replacement hedgerows expressed by the Applicants are over-optimistic and this impacts specifically on the foraging routes of bats and nesting birds. Further there are no plans to replace a significant number of hedgerows to be removed on the substation site. Neither have the Applicants defined "Important Hedgerows" in line with government guidance.	25. The Applicants note that this matter has been previously raised by ESC, but with specific reference to potential impacts upon brown long-eared bats. Pre-application bat surveys did not record any brown long-eared bats within the onshore substation location at the time of the survey and are therefore not considered to be present. The Applicants confirm that all of the available survey information relating to bats has been presented within ***Chapter 22*** of the ES (APP-070) and is informed through desk studies and the suite of bat surveys undertaken pre-application. Pre-construction surveys for roosting as well as commuting and foraging bats will also be undertaken, as specified within ***Section 6.7.3*** of the ***Outline Landscape and Ecological Management Strategy*** (OLEMS) (REP10-005). Should bats (of any species, including the brown long-eared species) be identified during the pre-construction survey effort, this will be taken into consideration during the detailed design and within the Operational Noise Design Report (which will be submitted to the relevant planning authority for approval pursuant to Requirement 12(2) of the ***draft DCO*** (document reference 3.1)). The Applicants have agreed with ESC that Work No. 29 will be designed and implemented to promote suitable habitat for foraging bats which will be detailed within the final Ecological Management Plan (EMP) (which will be submitted to and approved by the relevant planning authority prior to commencement of the onshore works) and consideration of this species (and any identified mitigation measures) will be taken into account during the detailed design. 26 - 27. The Applicants have prepared and submitted a draft badger licence application to Natural England for which discussions remain ongoing to obtain a Letter of No Impediment (LONI) for badgers. Where possible the Applicants will seek to avoid known active badger setts. However, detailed design information is currently not known and therefore

ID	SASES' Comment	Applicants' Comments
		the worst-case scenario is that the known active badger sett along the onshore cable corridor will require closure. The mitigation measures in respect of badgers and bats (and all other species) have been informed through the findings of surveys and are in accordance with the legislation afforded to these species and industry guidance. The Applicants acknowledge the mobility of some species (e.g. water voles, otters, badgers) and therefore have committed to undertaking pre-construction surveys post-consent to account for the passing of time. These will identify any changes since the surveys undertaken to date and ensure any mitigation measures reflect up to date data. Where required, the findings of these surveys will also inform final species mitigation licence applications It should also be noted that the Projects are reinstating all important connecting habitats lost during construction (i.e. hedgerows) to an equal or improved standard to what has been removed and therefore will continue to provide the foraging / commuting habitat prior to their removal. 28. As per their previous response to SASES' allegation that 'Important Hedgerows' haven't been defined in line with Government guidance (see ID 40, ***Section 2.4*** of the ***Applicants' Comments on SASES' Deadline 7 Submissions*** (REP8-045)), the Applicants identified the important hedgerows within the ***Important Hedgerows and Tree Preservation Order Plan*** (AS-108) as per the criteria set out in the Hedgerows Regulations 1997.
21	*Onshore Ecology – The Aldringham Hundred River* 29. SASES refers to the following submissions: a) REP1-350	29. Noted. The Applicants have previously responded to the submissions cited by SASES' within its following submissions: a and b) ***Applicants' Comments on SASES' Deadline 1 Submissions*** (REP3-072);

ID	SASES' Comment	Applicants' Comments
	b) REP1-371 Section 4.10 c) REP6-128 and REP6-129 (ISH7 post-hearing submissions) d) REP7-089 Appendix 5 e) REP8-231 (ISH14 Post- hearing submission) 30. SASES has previously highlighted serious deficiencies and errors in the 2018 Extended Phase 1 Habitat Survey results for the Aldringham and River Hundred area. The Applicants' Site Selection decision of June 2018 relied upon the feasibility and suitability of the Aldeburgh Road pinch point cable crossing. That decision would have been made without reference to an adequate ecological survey of Works no 19 and the wider Aldringham River Hundred Valley former Special Landscape Area. 31. SASES supports Natural England's concerns expressed in its REP7-073 Appendix C8 and REP8-162 Appendix C9 regarding the Applicants' choice of February at a time of unsuitable ground conditions to carry out its onshore habitats survey in the River Hundred area. SASES believe that if further surveys of the area are to be carried out, the results must be verified by Surveyors who can be seen to be independent of the Applicants. All parties should then defer to the opinion of Natural England, the UK Government's independent adviser for the natural environment in England, as to whether or not the woodland on the west bank of Hundred River is wet woodland and a priority habitat under the UK Biodiversity Action Plan. 32. SASES welcomes the Applicants' oral commitments at Issue Specific Hearings to take great care to minimise impact on the natural environment in Aldringham, through for example eco-sensitive micro-siting of the cable routes in order to avoid notable trees in this area and	c) ***Applicants' Comments on SASES' Deadline 6 Submissions*** (REP7-059); d) ***Applicants' Comments on SASES' Deadline 7 Submissions*** (REP8-045); and e) ***Applicants' Comments on SASES' Deadline 8 Submissions*** (REP9-013) (confirming the Applicants had no further comments on REP8-231). 30 - 31. The Applicants refute SASES' allegation of there being serious deficiencies and errors within the 2018 Extended Phase 1 Habitat Survey results. When challenged by SEAS regarding the classification of the woodland at the Hundred River crossing (see REP5-108), the Applicants revisited the location in February 2021. The results of this survey visit are presented within the ***Ecology Survey Results*** submitted at Deadline 6 (REP6-035) and verify the results of the 2018 Extended Phase 1 Habitat Survey. Additionally, to account for the fact that February is a sub-optimal habitat survey month, the Applicants again visited the site on 28th May 2021. The findings of this survey visit have been submitted at Deadline 11 (document reference ExA.AS-21.D11.V1) and support the findings of all previous surveys. The Applicants maintain that the woodland at the Hundred River crossing is semi-natural broadleaf woodland. This conclusion is supported by the independent site visit undertaken by East Suffolk Council (ESC) and Suffolk County Council (SCC), as confirmed verbally at Issue Specific Hearing 7 and subsequently by ESC in its written submission at Deadline 6 (REP6-075). It is also noted that, within its Deadline 10 submissions (REP10-052), Natural England accepts that the area of woodland which overlaps with the Order limits is unlikely to be wet woodland. 32 - 34. Noted. No further comments.

ID	SASES' Comment	Applicants' Comments
	in reducing the footprint of Accesses 5 and 6 on Aldeburgh Road, Aldringham. 33. The Applicants have clarified in REP9-013 Section 2.6 that the functional requirements for the length of the working area along the riverbank have been driven by the need to accommodate safe working at the Hundred River and to allow safe means of access for construction vehicles and personnel, rather than separation distance between the onshore cables under the river. 34. The Applicants' commitment to lay ducting for the second project at the same time as cables are laid for the first project would imply concurrent installation of ducting for both projects at the river crossing, given the proposed open cut watercourse crossing methodology. 35. SASES believe there exists an opportunity to further protect riverside woodland biota and habitats by making a significant further reduction in the proposed 68m X 40 m river crossing working area alongside the west bank of the river. For example, a 'banjo' style haul road design to facilitate lorry turning should be achievable within a 20 metres width.	35: The Applicants have reduced the onshore cable corridor as far as possible at this pre-detailed design stage. As stated within the ***Outline Watercourse Crossing Method Statement*** (REF), subject to ground conditions, the design of the Hundred River crossing will seek to minimise the width of the onshore cable route as it passes the Hundred River in order to minimise the need to remove vegetation (including trees) along its western bank within this area. Furthermore, trees along the western bank of the Hundred River (extending 5m inland) outside the main onshore cable crossing working area, will not be removed unless for safety reasons, thereby minimising the area of disturbance as a result of the Project.
22	*Onshore Ornithology* 36. SASES refers to REP1-350 and REP6-128/129 which also contain its submissions on ornithology. 37. SASES agrees with Natural England that the omission of farmland bird protection from the OLEMS needs to be addressed. This is currently an issue where site investigations works are taking place during the breeding season and particularly affecting ground-nesting skylarks. 38. SASES maintains that the above issues regarding onshore ecology and ornithology are not compliant with EN1-5.3.	36. Noted. The Applicants refer to their responses within ***section 2.9*** of the ***Applicants' Comments on SASES' Deadline 1 Submissions*** (REP3-072) and ***section 2.2*** of the ***Applicants' Comments on SASES' Deadline 6 Submissions*** (REP7-059). 37. The Applicants note that all nesting birds (including farmland birds) are afforded mitigation measures through the Breeding Bird Protection Plan, an outline of which is set out within the ***OLEMS*** (document reference 8.7).It is noted that Natural England has updated its position on this matter on page 23 of 54 of its Risk and Issues Log submitted at Deadline 10 (Rep10-053) and it is now considered closed.

ID	SASES' Comment	Applicants' Comments
		38. The Applicants deem the mitigation measures set out with regards to ecological and ornithological receptors within the ***OLEMS*** (document reference 8.7) satisfy the requirements of EN1.
23	*Water Resources and Flood Risk* 39. Friston is already vulnerable to and suffers from regular pluvial stormwater run-off flood water and sediment inundation. The proposals result in significant new hard surfacing, infrastructure and ground works which will have an adverse impact on flood risk. A fundamental error was made by the Applicants in the site selection process by not properly implementing the Sequential Test. 40. Flood risk and drainage both during construction and operation has been the subject of a number of submissions during examination process and specifically was addressed at ISH 11. SASES made a detailed submission following ISH 11 as to its position at Deadline 8 (REP8-226 & 227) and a further submission at Deadline 9 (REP9-080) 41. The Applicants have failed to assess the required drainage for the wider construction area and the increased turbidity of the run-off. Thus, they have not proven that the construction drainage is viable. There is an added complexity to flood risk during construction given that the substations will either be built concurrently or sequentially. 42. There is a lack of clarity as to the Applicants position in relation to the size of the SuDS ponds for the different SuDS schemes proposed. The Applicants should clearly set out the size of basins required for an infiltration only scheme and separately a combined attenuation and infiltration drainage scheme together with the landscape implications, including whether the basins will be below ground level in all directions given the topography of the site.	39. The vulnerability of Friston village to flooding will not be affected by the Projects as the Applicants have committed to ensure that the pre-development Q_{BAR} rate is not exceeded. During detailed design the Applicants will develop a detailed hydraulic model which will ensure that the Projects will not have an adverse impact on flood risk. The Applicants undertook site selection as per the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, as described in further detail in ***Chapter 4 Site Selection and Assessment of Alternatives*** of the ES (APP-052). The Sequential Test is not required for the Projects as the onshore substation and National Grid substations locations are in Flood Zone 1 (that which indicates the area is at the lowest risk of flooding). 40. Noted. The Applicants replied to both of these submissions in detail within ***Applicants' Comments on Substation Action Save East Suffolk's (SASES) Deadline 8 Submissions*** (REP9-013) and ***Applicants' Comments on Substation Action Save East Suffolk's Deadline 9 Submissions*** (REP10-020) respectively. 41. The Applicants have provided as much detail around the construction drainage as is reasonably practicable at this stage. Additional details cannot be confirmed until detailed design is undertaken. All construction drainage details and methodologies can be found within ***Section 11*** of the ***Outline Code of Construction Practice*** (OCoCP) (document reference 8.1). 42. See the ODMP (document reference ExA.AS-1.D11.5.V5) and the OLEMS (document reference 8.7) submitted at Deadline 11.

ID	SASES' Comment	Applicants' Comments
	43. The Applicants have repeatedly referred to the position of the Environment Agency although it is not responsible for surface water flood risk management which is the key issue in these applications. 44. As the Examining Authorities are aware SASES has retained the services of Clive Carpenter of GWP consultants in relation to flood risk matters. Given this expertise it would be helpful for Clive Carpenter to be involved in the discussions between the councils and the Applicants in relation to flood risk matters to avoid the issues which have arisen in relation to operational noise where SASES' expert was not involved contrary to the wishes of the Examining Authorities. 45. Given Suffolk County Council will be responsible for dealing with matters concerning flood risk and drainage should the projects be consented and given the severity of the consequences if flood risk management is not effective, then Suffolk County Council should be the discharging authority. 46. As set out in SASES' Comments on National Grid Substation Extension Appraisal (REP9- 075) the flood risk is significantly worsened by the extension of the National Grid substation for the NGV projects by increasing the amount of hard surfacing and reducing the land available for SuDS basins which will need to be larger to address the increased flood risk created by the extensions. 47. In terms of the DCO SASES remains concerned as to the maintenance of the drainage system (REP8-228 and REP9-079). Further it may aid in addressing the dimensional issues in respect of the SuDS basins if parameters for these are included in Requirement 12.	43. The Applicants 'repeatedly' refer to the position of the Environment Agency as they are the statutory body responsible for managing flood risk for England as per the Flood and Water Management Act 2010. As per Requirement 41 of the ***draft DCO*** (document reference 3.1), the final Operational Drainage Management Plan must be submitted to and approved by the relevant planning authority in consultation with Suffolk County Council (SCC) and the Environment Agency prior to the commencement of Work Nos. 30, 34, 38 or 41. 44. The Applicants consider that the Examination process allows and has allowed adequate opportunity for SASES representations to be submitted for consideration. The Applicants are in ongoing and advanced discussions with the Lead Local Flood Authority on flood matters. The Projects will not increase flood risk within the village of Friston, and indeed through the use of SuDS basins, will reduce the risk of flooding within the village of Friston due to the retention and delayed/controlled release of rainfall within the catchment. 45. ESC and SCC both maintain that they should be the discharging authority in respect of requirement 41. The Applicants consider that the appropriate discharging authority should be the relevant planning authority (i.e. ESC) who have experience discharging such matters in a planning context. The local planning authority has recently formulated policy in respect of such matters in Policy SCLP 9.6. This has had regard to national policy and guidance as well as guidance from the LLFA. It is noted that the relevant planning authority will be discharging requirements in relation to drainage matters relating to construction as well as the other design requirements which have a relationship with requirement 41 (including requirements 12 and 14).

ID	SASES' Comment	Applicants' Comments
		The Applicants note that SCC will be consulted during the approval process. The Applicants therefore do not propose to make any changes to the discharging authority specified in requirement 41. 46. The Applicants have submitted an appraisal of the potential additional effects of the hypothetical future expansion of the National Grid substation necessary to accommodate Nautilus and Eurolink (see the ***Extension of National Grid Substation Appraisal*** (REP8-074)). It is recognised that this represents only a partial assessment of those projects due to the lack of available information, however at this stage this is all that is possible. Any potential future expansion will be subject to the same flood risk regulations and policy as the Projects, as detailed in ***Table 20.4*** of ***Chapter 20 Flood Risk and Water Resources*** of the ES (APP-068). The indicative footprint of the extensions shown on ***Figure 1*** of the ***Extension of National Grid Substation Appraisal*** (REP8-074) amounts to approximately 2.48ha. It is not guaranteed that the whole of this area would be required for development should any extensions to the National Grid substation be consented and constructed in the future; however, it is considered to represent a reasonable worst case footprint. Using the assumptions presented within the ***Outline Operational Drainage Management Plan*** (REP8-064), initial modelling suggests that the National Grid substation sustainable drainage system (SuDS) basin would require SuDS attenuation for the following (approximate) amounts under each of the drainage scheme options presented within the ***Outline Operational Drainage Management Plan*** (REP8-064): • Infiltration only scheme: Approximate additional surface area = 6,300m^2

ID	SASES' Comment	Applicants' Comments
		Approximate additional storage capacity required = 6,000m^3 • <u>Hybrid scheme:</u> Approximate additional surface area = Approximately 5,000m^2 Approximate additional storage capacity required = 5,600m^3 • <u>Attenuation only scheme:</u> Approximate additional surface area = 3,800m^2 Approximate additional storage capacity required = 3,400m^3 47. Paragraph (1) of requirement 41 requires the Operational Drainage Management Plan to include provision for the maintenance of measures identified. The final plan must therefore include details of maintenance measures. Paragraph (2) requires the plan to be implemented as approved. This means that the maintenance measures set out within the plan must be implemented as approved. Maintenance of the drainage is therefore secured through requirement 41.
24	*Archaeology and Cultural Heritage – Setting of Designated and Non-Designated Heritage Assets* 48. The substation site is ringed by seven listed buildings including the church of Saint Mary the Virgin, Friston a Grade II* listed building. These heritage assets do not exist in isolation and are all part of a significant area of historic landscape which lies immediately to the north of the village of Friston and which is directly and significantly affected by the proposals. 49. As set out in SASES written representations submitted at Deadline 1 (REP1-366) which were discussed at ISH2, the Applicant's assessments underestimate the heritage impact of the proposed schemes and	48. The Applicants agree that there are seven Listed Buildings in relatively close proximity to the onshore substation locations and these have been the subject of detailed assessment by the Applicants in the ES (***Appendix 24.7*** (APP-519/520)) and subsequent reports. These assets do not exist in isolation, in some cases the contribution made by setting includes relationships with other Listed Buildings: Little Moor Farm and High House Farm both form part of the settlement along the edge of Friston Moor; Friston War Memorial has a close relationship to the Church of St Mary, Friston. These contributions are all described in ***Appendix 24.7***. It is not agreed that the landscape to the north of Friston should be described as being a 'significant' area of historic landscape. It has a specific history that

ID	SASES' Comment	Applicants' Comments
	undervalue the contribution made by setting to each of these heritage assets resulting in a much lower assessment of the adverse heritage impact. On a proper assessment, the harm to designated heritage assets is far greater than that suggested by the Applicants. The outline landscape mitigation plan does nothing to reduce the heritage impacts of the schemes in any meaningful way. 50. A particular concern is the Grade II* Saint Mary the Virgin Church and SASES endorses the views of Historic England with regard to this listed building and generally. 51. Whilst the Applicants have made attempts to reduce the heritage impact of its proposals through reducing the footprint and height of the Scottish Power substations, together with an immaterial 70 cm reduction in the finished ground level of the National Grid substation, this does not reduce the heritage impacts (REP4-108). The ability to reduce finished ground levels is unproven and doubtful given the surface water flood risk at the site. 52. Only the impacts of the operational phase of the schemes are assessed in detail. The failure to include the construction and decommissioning phases is a significant omission and a failure on the part of the Applicant to meet its obligations under paragraph 5.8.10 of EN-1. 53. As set out in SASES' Comments on National Grid Substation Extension Appraisal (REP9- 075) Appendix 3, the extension of the National Grid substation can only serve to increase the harm to the heritage assets. 54. In relation to archaeological matters SASES agrees with and defers to the views of SCC.	has affected its composition and character, but this is not of such importance that it should be considered a 'Heritage Asset', as defined in Annex 2 of the NPPF. That is to say it has not been "*identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest*". 49. The difference of professional judgement between the expert assessments submitted by SASES and the Applicants has already been rehearsed in detail and no further comment is required here. The Applicants consider that the Outline Landscape Mitigation Plan (OLMP) contained within the ***OLEMS*** (document reference 8.7) does offer some degree of mitigation of adverse impacts on heritage assets, with the greatest benefit being experienced in the settings of Little Moor Farm and Woodside Farmhouse. 50. Noted. 51. The Applicants are pleased SASES recognises the measures taken to reduce adverse impacts on heritage assets, but it is not agreed that reductions in footprint and height of the substations would have no mitigating effect. Specifically, it is considered that these design changes (as described in the ***Onshore Substations Update Clarification Note*** (REP3-057)) would materially diminish impacts on Little Moor Farm and Woodside Farmhouse and, to a lesser degree on the Church of St Mary, Friston and High House Farm (see ***Heritage Assessment Addendum*** (REP4-006)). 52. The Applicants have already responded to the SASES position regarding to construction and decommissioning-phase impacts. The 'scoping out' of construction and decommissioning works was discussed and agreed with the Expert Topic Group (ETG) and was agreed with Historic England through the SoCG process (REP8-127). The Applicants note that this statement has been agreed with ESC and SCC

ID	SASES' Comment	Applicants' Comments
		(the Councils) (see LA-07.07 of REP8-114). The Councils have also agreed the following statement at LA-07.05 (REP8-114): "*The approach to scoping out construction phase impacts upon the setting of heritage assets from further, more detailed assessment is appropriate*". Construction works that would result in material permanent change in the setting of heritage assets have been considered in the assessment of operational impacts (See ID26 of ***Applicants' Comments on SASES' Deadline 1 Submissions***, submitted at Deadline 3 (REP3-072) for further detail). 53. The Applicants have considered the potential impact of extensions to the National Grid substation within the ***Extension of National Grid Substation Appraisal*** (REP8-074)). For heritage assets, it was concluded that extensions to the National Grid substation to accommodate the Nautilus and Eurolink would not result in any significant cumulative impacts on the significance of heritage assets. 54. Noted.
25	*Noise And Vibration – Construction* 55. The engagement by the Applicants on construction noise was constructive and significant improvements have been made principally through following the control mechanisms provided for under S 61 of COPA as recommended by SASES. This is reflected in the Outline Code of Construction Practice submitted at Deadline 8.	Noted. The Applicants are pleased to have reached an agreed mechanism on the control of construction noise with SASES.
26	*Noise and Vibration – Operation* 56. In terms of Operational Noise SASES refers to its post ISH 12 submission (REP8-220) and has commented on the Applicants' Noise Position Paper at Deadline 9 (REP9-082).	56. The Applicants responded to the SASES' submissions referred to within ***section 2.3*** of the ***Applicants' Comments on SASES' Deadline 8 Submissions*** (REP9-013) and within ***section 2.1*** of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020).

ID	SASES' Comment	Applicants' Comments
	57. In essence the Applicants' assessment of background noise is flawed and has chosen to ignore without valid reason the noise measurement at the quietest location SSR 9. East Suffolk Council has similar concerns as to the understatement of background noise. However without technical justification it chosen to accept the background noise figures presented by the Applicants. In the absence of such a technical justification the background noise figures presented by the Applicants still have to be regarded as unreliable and not a basis upon which to assess adverse effects or accept the noise requirement in the draft DCOs. 58. The Applicants have not satisfactorily addressed the issues surrounding tonality but should the Projects be consented, a requirement that 100 Hz sound will not exceed 32 dBLLeq (15 minutes) should be included in the DCO noise requirement as has been agreed for other substation projects. A draft of this requirement is set out in SASES post ISH12 submission. 59. The Applicants have not addressed the impulsive noise from the switchgear in the National Grid infrastructure and this remains an area of major policy non-compliance. The Applicants have chosen not to enquire as to the plant and equipment which National Grid will install in the substation extensions and therefore it cannot be ruled out that further switchgear will be installed increasing the overall frequency of switchgear operation. 60. It is regrettable that the Applicants' contrary to Action Point 10 in the ISH15 Hearings Action Points have chosen not to reach agreement with SASES in respect of noise requirements. 61. In relation to the noise requirement agreed by the Applicants and ESC this cannot be regarded as a requirement that will avoid a	57. Matters relating to background sound levels were addressed further in the Applicants' ***Position Statement on Noise*** submitted at Deadline 8 (REP8-039), including those matters raised about SSR9. 58. Matters relating to tonality have been addressed further in the Applicants' ***Position Statement on Noise*** submitted at Deadline 8 (REP8-039). Matters specifically relating to SASES proposed limit of 32dBLLeq at 100Hz have been addressed at some length within the ***Applicant's Comments on SASES' Deadline 8 Submissions*** (REP9-013). 59. This has been addressed repeatedly, both within the ***Noise Modelling Clarification Note*** submitted at Deadline 4 (REP4-043) and the ***Applicants' Comments on SASES' Deadline 8 Submissions*** (REP9-013). 60. As per its response at ID 2, Section 2.1 of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020), the Applicants understood the action points requesting consultation with SASES to be in relation to construction phase noise controls, particularly regarding the approach to referencing Lowest Observed Adverse Effect Levels (LOAELs) and Significant Observed Adverse Effect Levels (SOAELs). With respect to engagement on operational noise, please see Question 4 of the ISH 17 Hearing Action Points (document reference ExA.HA.D11.V1). 61. Matters relating to background sound levels were addressed further in the Applicants' ***Position Statement on Noise*** submitted at Deadline 8 (REP8-039). The background data is, categorically, not flawed. As stated within the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020) it is very common practice, not just for offshore windfarms, to set noise limits at a selection of properties rather than applying a noise limit to all properties in the area. These properties are generally chosen as the closest properties to the proposed development, in

ID	SASES' Comment	Applicants' Comments
	significant adverse effects given it is derived from flawed background data as stated above. Furthermore the requirement does not assess noise impact at Saint Mary the Virgin Church and it is unduly restrictive in terms of the locations and times when measurement should be taken, which may result in an inadequate assessment of noise levels, particularly in the longer term. SASES draft requirement is to be preferred assuming the policy non-compliance of the operation of the National Grid switchgear can be addressed. 62. The agreement to address tonality issues and other effects post consent through a redrafted Requirement 12 and a provision in the Substations Design Principles Statement is contrary to law and policy as it is deferring the feasibility of whether the noise requirement can be achieved until after consent. Furthermore the drafting of requirement 12 is not sufficiently specific to ensure that tonality and other noise affects are properly addressed.	the understanding that limits at those closest properties will provide adequate protection to properties further from the development. This is a perfectly common and acceptable approach to undertake. 62. The Applicants note that Requirement 12 was specifically proposed by ESC within their submissions at Deadline 6 (REP6-081) and during ISH12. It is understood that by introducing a pre-commencement requirement for approval by the relevant planning authority, this would provide sufficient assurance to ESC to address their concerns regarding any perceivable tonal characteristics associated with the operation of the onshore substations. This has been confirmed and agreed by ESC (REP8-114). This approach also aligns with that adopted by the consented East Anglia ONE project and other currently consented offshore wind projects.
27	*Traffic and Transport* 63. SASES refers to its submission at Deadline 5 (REP-100) and Deadline 8 (REP8-223). Serious concerns remain including in respect of impacts arising from the use of A12/A1094 Friday Street junction and issues arising from the movement of AILs during construction and thereafter in the event of equipment failure.	Noted. The Applicants note that the approach to mitigation at the Friday Street junction has been agreed with SCC as the local highways authority, as supported by statement LA-10.25 of the SoCG with the Councils (REP8-114). Comprehensive measures have been set out within the ***Outline Construction Traffic Management Plan*** (Outline CTMP) (document reference 8.9) with regard to construction traffic controls at the Friday Street junction and the movement of Abnormal Indivisible Loads (AILs).
28	*Human Health* 64. SASES refers to its submissions at Deadline 8 following ISH 10 - Health and Wellbeing. 65. In terms of the Applicants' track record in community liaison SASES can only comment in relation to EA1N and EA2 but the community's	64. Noted. 65. The Applicants refer to its ***Statement regarding Ground Investigation Works*** submitted at Deadline 10 (REP10-029) and note that these works have been undertaken prior to the DCO being made.

ID	SASES' Comment	Applicants' Comments
	experience of a Scottish Power has been universally poor as referred to in SASES' Deadline 9 submission Comments on Quality Of Stakeholder Engagement (REP9-081). The Applicants have already caused further unnecessary disruption and stress through wholly inadequate engagement and information in relation to its current survey works. This has necessitated contact with Suffolk County Council, the RSPB, Natural England and the rural police due to inadequate engagement and information in relation to highways and ecological impacts. 66. Comments in relation to PRoWs are set out below.	Post-consent, the Projects will be subject to stringent standards for stakeholder engagement, with appropriate measures set out within the ***Outline Code of Construction Practice*** (Outline CoCP) (document reference 8.1). 66. Noted. The Applicants have responded to SASES' comments on Public Rights of Way (PRoW) at ID31.
29	*Landscape and Visual* 67. Friston has a strong sense of place and local distinctiveness and its selection is the result of a flawed site selection process (REP1-364, REP1-365 and REP3-128). 68. During the course of the examination the Applicants have proposed a small reduction in the area of the EA1N and EA2 substations but there has been none in relation to the National Grid substation or cable sealing ends which have been described in correspondence from National Grid as "standard" (REP3-127). There have also been reductions in the height of the EA1N and EA2 substations but none in respect of the National Grid infrastructure aside from a possible 0.7 m reduction in the finished ground level of its substation. Furthermore National Grid has confirmed that there will be no reduction in size of the National Grid substation or the cable sealing ends if only one of EA1N or EA2 is constructed. SASES has commented on all these matters during the course of the examinations and on new visualisations which have been submitted by the Applicants.	67. The site selection process was appropriate, followed best practice and inclusive of stakeholder feedback. ***Appendix 4.5*** of the ES (APP-456) provides a comparative consideration of landscape and visual impacts associated with the Projects and proposed mitigation, which was prepared prior to the ES during the site selection stage of the process. The site selected at Grove Wood, Friston is the most appropriate location of the alternatives considered to site the onshore substations and National Grid substation based on best practice for siting of substations (Horlock Rules), avoidance of nationally designated areas of highest amenity value (Suffolk Coast and Heaths AONB) and areas of local landscape designation, as well as taking advantage of the screening provided by large areas of woodland (Grove Wood / Laurel Covert) to minimise intrusion into surrounding areas. As a result, the geographic extent of landscape and visual effect are contained within approximately 1km of the Projects' onshore substations within a localised area to the north of Friston. Although these effects on landscape character are significant at the local level, wider character change is avoided. While there are some distinctive characteristics in the local landscape to the north of Friston, the double row of high-voltage overhead transmission lines and associated pylons form

ID	SASES' Comment	Applicants' Comments
	69. Despite these changes the position remains that the Applicants have: a. materially understated the adverse impact on the landscape and visual receptors; b. relied upon visualisations, which despite some improvements during the course of the examinations, still underrepresent the impact of the projects; c. failed properly to acknowledge that the landscape impact might be prolonged and uncertain given the site will be a construction site for a substantial period of years depending on how the three NSIPs are sequenced. 70. In terms of mitigation through tree planting much of this will not be implemented until after a prolonged and uncertain construction period. Further it is entirely reliant on tree growth rates which are unrealistic notwithstanding the proposal to introduce an ill-defined "adaptive maintenance regime". It is unsatisfactory in a situation where mitigation is wholly dependent on a planting regime that the growth rates are not secured in the DCO in that the Applicants that do not have a direct obligation to ensure that those growth rates are achieved (REP9-083 comments on the Outline Landscape And Ecological Management Strategy). 71. As set out in SASES' Comments on National Grid Substation Extension Appraisal submitted at Deadline 9 (REP9-075 Appendix 2) the landscape and visual impacts are substantially worsened by the extension of the National Grid substation for the NGV interconnector projects and a prolonged and uncertain construction period could become even more prolonged and uncertain depending upon the sequencing of the extension works including associated cable trenching etc.	notable visual elements detracting from the local setting of the landscape between the village of Friston and Fristonmoor. 68. The Applicants note that the Projects' design refinements, including the reduction in the footprint of each of the onshore substations and their resulting relocation, lowering of the finished ground levels and reduction in the maximum heights of the buildings and external equipment, as well updates to the OLMP, are beneficial in reducing the landscape and visual effects of the Projects' substations and improving their accommodation in the landscape and views. Regarding the National Grid substation, the ***Substations Design Principles Statement*** (REP8-082) has been updated since its first iteration to include parameters within which the National Grid substation must be designed. 69. The Applicants have in no way under-estimated the landscape and visual impact of the Projects, which are clearly and objectively assessed in the Landscape and Visual Impact Assessment (LVIA) presented within ***Chapter 29*** of the ES (APP-077) and the subsequent ***LVIA Addendum*** (REP4-031), in line with best practice guidance. The Applicants have always acknowledged that the Projects will result in some significant effects on local landscape character and views, which it considers inevitable for a Nationally Significant Infrastructure Project, however it asserts that the extent of these effects is contained to a localised area, avoid wider character change or material effects on nationally designated landscapes, and that due regard is being paid to mitigating adverse local effects through good design and embedded mitigation measures, including the Projects' design refinements (reduction in footprints, lowering of finished ground levels and maximum heights) and the implementation and maintenance of the OLMP proposals. The Applicants consider that the format of these photomontage visualisations is entirely appropriate and robust to allow

ID	SASES' Comment	Applicants' Comments
		interpretation and understanding of the landscape and visual effects of the proposals, and that they do not under-represent the impact of the projects. In terms of construction impacts, ***Chapter 29*** of the ES (APP-077) considers a reasonable worst case in terms of the construction programme and flexibility in how the Projects are delivered is essential. Under the worst-case scenario (scenario 2), the construction stage effect is considered medium-term (5-10 years) for the construction of the onshore substations and National Grid substation, whereas under scenario 1 the effect is assessed as short-term (1-4 years). 70. Opportunities for early planting have been identified in order to establish plants and provide for earlier screening, as shown in ***Figure 7*** of the ***OLEMS*** (REP10-005) and described in ***section 3.5.5***. During the onshore preparation works or early in the construction phase, early woodland and hedgerow planting may be implemented in locations where it is possible to achieve advanced planting outside the immediate onshore substation and National Grid infrastructure construction areas. Depending on the timing of this early planting, these areas could already have had up to three years of growth prior to completion of construction and commencement of operation. The Applicants address the issue of growth rates in some detail in the ***Updated Photomontages Clarification Note*** (REP3-062) submitted at Deadline 3, particularly in ***section 3.1.4***. The use of an adaptive maintenance regime is proposed following engagement with the Councils on maintenance and aftercare measures that it could adopt in order to reduce the concerns expressed in relation to the growth rates and deliverability of mitigation in a timely manner. The use of an adaptive planting maintenance scheme ensures the application of best practice in the implementation and maintenance of the landscape planting proposed in the Landscape Management Plan (LMP), intended to de-risk the timely delivery of planting, achieve optimum levels of plant growth and provide

ID	SASES' Comment	Applicants' Comments
		greater confidence that effective screening from the tree planted areas will be achieved. 71. The ***Extension of National Grid Substation Appraisal*** (REP8-074) with accompanying photomontages considers the potential LVIA effects of an extension of the National Grid substation cumulatively with the Projects based on the high-level information available. The cumulative landscape and visual effects assessed for the Projects (without an extension of the National Grid substation) within the ***LVIA Addendum*** (REP4-031) fundamentally remain unchanged, however an increase of the National Grid substation footprint associated with an extension would result in some additional physical effects on landscape features, an intensification of effects on local landscape character and some increase in the lateral spread and influence of development in certain local views.
30	*Tourism* 72. SASES commented in relation to tourism REP1-353, REP2-166 and in its post hearing submission following ISH5 (REP5-101). 73. The Applicants have demonstrated they have a limited understanding of tourism in East Suffolk/Heritage Coast even failing to appreciate that Friston is close to Snape Maltings REP7-054 Section 2.1 ID2 and REP8-232 Section 2.1 ID2, 74. The Applicants economic analysis is weak and did not acknowledge the difference in spending between holiday visitors and people coming for the purposes of employment. (REP5-101) 75. There is a substantial risk that the tourism economy of East Suffolk will be damaged and the Applicants have not demonstrated that this will not be the case. In this context the Tourism Fund of £150k is immaterial.	The Applicants refer to their responses to SASES' submissions within ***section 2.11*** of the ***Applicants' Comments on SASES' Deadline 1 Submissions*** (REP3-072) and ***section 2.1*** of the ***Applicants' Comments on SASES' Deadline 5 Submissions*** (REP7-054). The Applicants have agreed many aspects of the tourism impact assessment with the Councils (as reflected in the SoCG with the Councils (REP8-114)). The outstanding area of dispute remains around the potential effects upon visitor perception. The Councils have agreed with the provision of the Tourism Fund (REP8-114).

ID	SASES' Comment	Applicants' Comments
31	*Recreation (Public Rights-of-Way)* 76. SASES refers to its Deadline 1 submissions on Footpaths (REP1-346) and ISH4 post hearing submission (REP5-100, Agenda Item 6). 77. SASES agrees with the Councils that Public Rights of Way should be treated as a topic in its own right within the Examination and that the quality of the experience of users should be properly assessed, including the permanent loss of historic Footpath 6, changes to views (including that of Friston Parish Church), noise, air pollution and tranquillity. 78. SASES does not consider that PRoWs were given proper significance in site selection. 79. The northern side of Friston and its PRoW network will cease to exist as an amenity to residents during the construction phase. The Applicants have failed to demonstrate how the PRoW network in and around the substation site can be kept open and usable by the public during the construction phase. This is in conflict with the DCO which requires the alternative route to be complete prior to the stopping-up of FP6. 80. SASES does not agree that the proposed alternative PRoW close to Grove Road is adequate compensation for the permanent loss of FP6. 81. SASES also notes that the Councils do not consider the collective mitigation measures are sufficiently adequate to mitigate the impacts caused by the development, particularly at the substation site.	76. The Applicants refer to ***section 2.7*** of the ***Applicants' Comments on SASES' Deadline 1 Submissions*** (REP3-072) and ***section 4*** of the ***Applicants' Comments on SASES' Deadline 5 Submissions*** (REP7-054). 77. The Applicants do not agree that Public Rights of Way should be treated as a topic in its own right. The Applicants consider PRoW to be a recreational receptor. As such, it is considered a sufficiently robust and appropriate assessment of the impact upon PRoWs from the Projects has been presented within ***Chapter 30*** of the ES (078). However, for ease of reference the Applicants provided a ***Public Rights of Way Clarification Note*** which synthesises the assessment of potential impacts upon PRoW and upon the users of the PRoW into one document and was submitted at Deadline 1 (REP1-049). 78. The Applicants do not agree that PRoW were not given sufficient weighting in the site selection process. Consideration of PRoW is clear within ***Chapter 4*** of the ES (APP-052), with design commitments made at that stage to avoid interaction with the Suffolk Coastal Path by adopting a horizontal directional drill (HDD) technique to install the export cables at the landfall. 79. The Applicants believe it is clear within Article 11 of the ***draft DCO*** (document reference 3.1) that PRoW must not be stopped up "*unless the alternative public right of way described in column (4) of Schedule 3* [of the draft DCO] *or as otherwise approved by the relevant local highway authority, is first provided by the undertaker to the standard defined in the public rights of way strategy, to the reasonable satisfaction of the relevant local highway authority".* This applies to all temporary stopping up of footpaths, which provides for an alternative route for footpath 6 referred to

ID	SASES' Comment	Applicants' Comments
		by SASES as shown on sheet 7 of 12 of the ***Temporary Stopping up of Public Rights of Way Plan*** (AS-107). 80. The Applicants' position differs to that of SASES. The PRoW diversion does not take users on to the public highway at any point, rather alongside it for a short length (separated from the public highway by a hedgerow) before diverging to take the user alongside field margins and northwards through Laurel Covert away from Grove Road. Further detail of the route is set out within ***section 3.5.13*** of the ***OLEMS*** (document reference 8.7). 81. The Applicants' consider that they have engaged constructively with the Councils on this matter and have presented several options for different schemes. It is noted that the statements with regard to mitigation have been agreed with the Councils in the SoCG (REP8-114), albeit with the acknowledgement regarding collective mitigation measures in the notes column. The Applicants note that the ***Outline PRoW Strategy*** (REP3-024) is only outline as yet, and will be refined post-consent to form the final submitted document for the discharge of Requirement 32 of the ***draft DCO*** (document reference 3.1) for approval by the relevant highways authority (in this case SCC). The Applicants will therefore continue to work with SCC post-consent to agree a scheme which satisfies both parties.
32	*Socio-economics* 82. Substantial long term local socio-economic benefits from these projects are far from proven based on the track record of a Scottish Power in respect of EA1 (REP5-101). 83. The compensation/financial inducements provided by the MOU and the Section 111 Agreement with East Suffolk Council are inadequate in a number of aspects not least quantum (given some amounts have been redacted) and where amounts have not been redacted no justification	With regard to the long term socio economic benefits, the Applicants have provided an update to the ExA in ID37 of the Applicants' Comments on the ExA's Commentary on the dDCO (document reference ExA.dDCO.D11.V1).

ID	SASES' Comment	Applicants' Comments
	has been provided as to why the sums are appropriate. These documents also lack clarity. (REP9-083)	

2.2 Responses to Applicants' Commons on Substation Action Save East Suffolk (SASES) Deadline 8 Submissions (REP10-056)

ID	SASES' Comment	Applicants' Comments
Introduction		
33	1. The following comments are made on the Applicants Responses (REP9-013) submitted at D9 to SASES D8 submissions to which 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.	Noted. The Applicants have responded to SASES' comments in turn below.
SASES Comments on Applicants D7 Responses to SASES D5 Submissions		
34	3. To clarify the comments below are on the Applicants' comments submitted at Deadline 9 on SASES' comments submitted at Deadline 8 on the Applicants' responses submitted at Deadline 7 on SASES submissions which were submitted at Deadline 5.	Noted.
35	4. For obvious reasons there seems little point in perpetuating this exchange other than to observe that the Applicants' comments are not drafted with the clear purpose of clarifying or informing but rather to obfuscate and deflect. The majority of SASES comments are in respect of the comparison with the existing substation site at Bramford and in addition there is a comment on the Leiston airfield site. These relate to the topic of alternatives.	Please see the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020). The Applicants dispute SASES' accusation that their comments aim to obfuscate and deflect. The Applicants have engaged fully throughout these Examinations with the sole interest of providing transparent clarification and additional information (where it possibly can noting the level of design information available at this stage and in line with the Rochdale envelope approach), such that the ExA can provide an informed recommendation to the Secretary of State on whether the Projects should be consented.

ID	SASES' Comment	Applicants' Comments
36	5. In addition with regard to the Applicants' comment on the BEIS OTNR Pathfinder Clarification note submitted by SASES at Deadline 5 please note SASES submitted an Updated Pathfinder Clarification Note at Deadline 9 (REP9-076) and awaits the Applicants' comments on that note. In the interim SASES points out that the argument made by the Applicants in their comment to the effect that HVDC Bipole is not applicable to wind farms then Figure 3-13 from page 38 of https://www.nationalgrideso.com/document/182931/download (part of the NGESO Offshore Coordination report) shows as the bottom left example the configuration that SASES has in mind, with clear notation as to Offshore Wind Farms being connected and the use of three cables for offshore to onshore connection. SASES would expect the onshore converter stations to be located together on one site and the offshore platforms might be combined.	The Applicants have provided a response to SASES' Updated Pathfinder Clarification Note at Deadline 10 and refer to ***section 2.7*** of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020). The example referred to by SASES shows two windfarms connecting to the grid using a single HVDC bipole connection. A 1700MW single connection is not compliant with the Security and Quality of Supply Standard (SQSS) limit of 1320MW, therefore two connections would be required in order to be compliant. There are no benefits of two HVDC bipole connections over two High Voltage Alternating Current (HVAC) connections, particularly given the distance the projects are to shore and the additional offshore and onshore infrastructure, such as convertor stations, required for HVDC connections. The HVAC solution proposed by the Applicants therefore represents the most economic and efficient solution.
37	6. In addition SASES observes that the comment which the Applicants have made on the Rt Hon Dr Therese Coffey's submission (REP9-026) at ID4 is misleading. The applicants state "*there is currently a cap on project size for Contracts for Difference (CfD) auctions*"	The Applicants refer to their comment at ID38.
38	7. It is understood that this cap Is 1.5 GW therefore given these projects are a maximum of 900 MW and 800MW respectively then they are well within the CfD cap.	Please see the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020). The maximum cap on project size for CfD is indeed 1.5GW and the 900MW and 800MW respective capacities of the projects are well within this cap, thus retaining the necessary flexibility in competing in the CfD process. However, SASES 'coordinated proposal' is for a 1700MW single connection project. This is greater than the CfD cap, therefore not eligible to participate in full.

ID	SASES' Comment	Applicants' Comments
ISH11 Submission - Flood Risk and Drainage		
39	8. SASES made a further flood risk submission at Deadline 9 (REP9-080) and awaits the Applicants' comments on this submission before responding.	Noted. The Applicants refer to ***section 2.4*** of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020).
ISH12 Submission - Noise		
40	9. SASES made a further noise submission at Deadline 9 (REP9-082) and awaits the Applicants' comments on this submission before responding.	Noted. The Applicants refer to ***section 2.1*** of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020).
Draft DCO		
41	10. SASES made a further submission on the draft DCOs at Deadline 9 (REP9-079) and awaits the Applicants' comments on this submission and the ExA's commentary on and/or schedule of changes to the dDCOs before responding.	See Section 2.5 of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020).
CAH3 Submission		
42	11. SASES made a further submission in respect of CAH3 at Deadline 9 (REP9-077) and awaits the Applicants' comments on this submission before responding.	Please refer to ***Section 2.6*** of ***SASES' Comments on CAH3 Submissions*** (REP9-077) in the Applicants Deadline 10 submission, ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020).
Comments on Responses to Action Points		
43	12. ID 1 – The Applicants' comment is an example of obfuscation and deflection. Action Point 10 related to the operational noise requirements in the DCO not construction issues. SASES commented in its submission on Noise at Deadline 9 (REP9-082) on the Applicants' non-compliance with Action Point 10.	As per its response at ID 2, ***Section 2.1*** of the ***Applicants' Comments on SASES' Deadline 9 Submissions*** (REP10-020), the Applicants understood the action points requesting consultation with SASES to be in relation to construction phase noise controls, particularly regarding the approach to

ID	SASES' Comment	Applicants' Comments
		referencing Lowest Observed Adverse Effect Levels (LOAELs) and Significant Observed Adverse Effect Levels (SOAELs) (see ID 26).

2.3 Addendum to Substation Action Save East Suffolk (SASES) Deadline 9 Submissions on Substation Design Principles Statement (REP10-058)

ID	SASES' Comment	Applicants' Comments
Introduction		
44	This information is an addition to Paragraph 3.2 of SASES Deadline 9 submission "Substations Design Principles Statement" [REP9-078].	Noted.
Additional Information		
45	Paragraph 3.2 of [REP9-078] addresses the issue of the unacceptable height of the capacitor banks associated with the Harmonic Filters for the proposed Applicant's substations.	The Applicants consider that the maximum heights of the Harmonic Filters are appropriate and have been fully assessed.
46	Following enquiries of well-established suppliers of such equipment, asking whether it would be possible for the proposed 14m high 275kV capacitor banks to be split into pairs of lower height, the following response has been received from a major supplier: "*There is no problem to build the capacitor bank with more than one stack per phase. The enclosed picture is a 300 MVAR MSCDN 380 kV 50 Hz with 2 stacks per phase.*" [Please refer to (REP10-058) for the enclosed picture referred to]	The design of the harmonic filters cannot be undertaken in isolation, nor can it be undertaken on the basis of 'enquiries of well-established suppliers of such equipment'. The results of power quality studies for instance (undertaken as part of the detailed design process) will influence the final design of the harmonic filters. It is noted that the suggested reconfiguration of the harmonic filters is likely to require an increased footprint of the onshore substations. The ***Substations Design Principles Statement*** (REP8-082) makes clear commitments requiring the Applicants to seek to further reduce the visual extent of the onshore substations, National Grid substation and cable sealing end compounds, through appropriate equipment procurement and layout considerations.
47	On careful examination six capacitor banks can be seen, with the bottom of one capacitor bank connected to the top of the immediately adjacent bank, thereby creating the equivalent of three double height	See response to ID46.

ID	SASES' Comment	Applicants' Comments
	banks, but with a much lower visual profile. The Rampion wind farm substation has achieved an 8m overall profile by a similar technique.	
48	Based on this information SASES reaffirms its belief that the current substation design proposal does not meet "Good Design" criteria and that the Applicant should offer a much improved design with a smaller footprint and overall lower height, with a proposed target of 10m height for all buildings and equipment.	See response to ID46.
49	For comparison Figure 2 below (taken from [REP9-078]) shows capacitor banks which have not been split, and which in any case are of lower height than those proposed for the Applicant projects, with fewer 'layers' of capacitors). [Please refer to (REP10-058) for the enclosed figure referred to]	See response to ID46.

3 Applicants' Response to SASES' Deadline 8 Submission in respect of the Electricity Act 1989 (REP8-222)

3.1 Introduction

3. This document presents the Applicants' response to SASES Deadline 8 Submission ***Further Submission in respect of the Electricity Act 1989*** (REP8-222).

4. This document is applicable to both the East Anglia TWO and East Anglia ONE North DCO applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's procedural decisions on document management of 23rd December 2019 (PD-004). Whilst this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it for the other project submission.

3.2 Electricity Act 1989

5. At the outset of the Examination, the Applicants recognised that a number of representations had been made in respect of both the Electricity Act 1989 (the 1989 Act) and the regulatory context in which the Applications were being brought forward. It was against that background that the Applicants provided a ***Regulatory Context Note*** (REP2-003).

6. The submission made by SASES (***Further Submission in respect of the Electricity Act 1989*** (REP8-222)) is partial in its coverage of both the statutory duties and the regulatory framework. For example, SASES quotes one of the general duties imposed upon a licensed transmission holder in terms of Section 9 of the 1989 Act – to develop and maintain an efficient, co-ordinated and economical system of electricity transmission. SASES then completely misinterprets the duty. The duty is to maintain a system of electricity transmission. That is directed at the system as a whole and a single generation connection only forms a part. Furthermore, under the same general duty, the transmission operator is obliged to "*facilitate competition in the supply and generation of electricity*". This requires transmission operators to ensure that they have systems in place which allow new connections to the transmission system and that it is to undertake in a fair way to ensure that it facilitates competition. This duty is particularly relevant in the context of the matters dealt with at the

Examination in that the CION process facilitates new grid connections which would facilitate competition in the generation of electricity.

7. As set out in the Regulatory Context Note, in addition to the direct statutory duties, transmission licence holders are also subject to conditions contained in their licence. These are imposed by GEMA/Ofgem. The Regulatory Context Note identifies that Section 3A of the 1989 Act provides the principal objective and general duties of the Secretary of State and GEMA/Ofgem. Those general duties are also relevant in relation to offshore wind in that they include the reduction in greenhouse gases, security of supply and also protection of consumer interest. In addition, under Section 3A(5) the Secretary of State and GEMA/Ofgem are obliged to exercise their functions in a manner which is best calculated to promote efficiency and economy on licensed transmission holders.

8. Against that background, when considering the CION process, it is important to understand the whole regulatory context. The CION process is created to fulfil licence obligations and thereby discharge the statutory duties of the Secretary of State and GEMA/Ofgem. The Regulatory Context Note sets out the full context for all these matters. If The SASES submission fails to have regard to the full statutory and regulatory context.

9. A further illustration of the SASES submission failing to have regard to the full context is the National Grid Electricity System Operator Limited (NGESO) and the transmission operators are obliged by regulation to undertake extensive forward planning. This requires (i) the publication of Future Energy Scenarios[1]; (ii) the Ten Year Statement[2]; and (iii) the Network Options Assessment[3]. This is all set out in the Regulatory Context Note at page 30. This illustrates how the regulatory framework directs and assists the holders of a transmission licence to comply with their statutory duty in terms of Section 9 of the 1989 Act. Section 9 requires the system to be developed and maintained in an efficient, co-ordinated and economical manner. The Applicants would invite the ExA to have regard to the proper context of these matters as set out in the Regulatory Context Note. It will be clear from examining this position that the arguments put forward by SASES have no proper foundation in law and are based on a misinterpretation of the legislation and regulatory framework.

10. The Applicants have also previously made submissions on Schedule 9 matters at ISH2 (***Written Summary of Oral Case (ISH2)*** (REP3-085) and ***Applicants'***

[1] NGESO Future Energy Scenarios 2020, available at https://www.nationalgrideso.com/document/173821/download
[2] NGESO Electricity Ten Year Statement, available at https://www.nationalgrideso.com/document/157451/download
[3] NGESO Network Options Assessment, available at https://www.nationalgrideso.com/document/162356/download

Comments on Substation Action Save East Suffolk (SASES) Deadline 5 Submissions (REP6-031).

3.3 National Grid Entities

11. Throughout the Examination, SASES have sought to refer to every National Grid entity as "NG." Again, we would refer to the Regulatory Context Note where the structure of the transmission system is set out in some detail. NGESO fulfils the overarching regulatory function. It has overall responsibility for directing the flow of electricity over transmission owners and OFTO's networks and carries out the overall system planning role. This is all set out in pages 7 and 8 of the Regulatory Context Note.

12. There are separate transmission owners who own, maintain and operate the onshore systems. National Grid Electricity Transmission plc (NGET) are one of those entities and own and operate the transmission system in England and Wales.

13. The two entities NGESO and NGET have separate licences and fulfil separate and distinct functions. SASES continued to deliberately only refer to all entities as NG. This is unhelpful and it is unclear as to which entity they are referring to when making submissions. It should be noted that a further National Grid entity known as National Grid Ventures has also been referenced at the Examination. Again, this is a separate and distinct operation from the other regulated entities.

3.4 CION Process

14. The CION process is one which is fully described and set out in the Regulatory Context Note. It derives both from the regulatory requirements imposed on the Secretary of State/GEMA/Ofgem and also the statutory duties imposed upon transmission owners in respect of Section 9. However, it is important again to understand the wider regulatory context of the imposition of licence obligations as well as the statutory duties. To look at the CION process only in one respect would be to fail to have regard to the full context of why the system is put in place and its purpose and function (see pages 41 to 47 of the Regulatory Context Note). SASES' position is that one part of Section 9 of the 1989 Act is the only relevant factor in the CION process. However, as identified above, Section 9 also has to facilitate competition of generation. GEMA/Ofgem have to act and deliver a regulatory framework which has full regard to the whole range of the statutory duties, Through regulation they control and regulate the conduct and actings of the transmission licence holders. The Applicants' position is not that Section 9 is not relevant, but that all these provisions are relevant when considering the development and application of the CION process. This is clearly evident from the way in which the final design has to be economic, efficient and also ultimately

to be justified in the context of the GB consumer. The consumer interest being obligations imposed on the Secretary of State and GEMA/Ofgem.

15. SASES claim that the grid connection at Friston is neither efficient nor co-ordinated when compared to an offer at Bramford. The evidence provided to the Examination entirely refutes this suggestion. As has been stated, the grid connection to Bramford is more than four times the length of the grid connection to Friston and requires a number of significant engineering operations relating to HDD under landfall and estuaries and rivers. Far from being more efficient, the findings of the CION process have clearly demonstrated that it would be a less efficient option. Furthermore, there is not room at Bramford for two substations. There would require to be new sites and new routing.

16. Two extracts of the CION process have been provided, one a redacted version (***Redacted CION assessment document for EA2 (version 2.0 -18/08/16) – Bramford*** (REP3-137)) and one a summary (Appendix 8.15 of the ***Consultation Report – Appendix 8 – Phase 3.5 Consultation*** (APP-037)). These illustrate the processes that have been gone through and the consideration of alternative sites through that process. The NGESO is the party who is best placed and has been given the responsibility for discharging the CION process decision making. It has established a clear process for undertaking the CION process which sets out the process in an open and transparent way. Potential generators can be confident that it will apply consistently. It is clear that the details of each individual CION process are highly confidential because it includes figures which, if revealed, would undermine the CfD auction process. In that context, as much information as possible has been disclosed and in terms of the regulatory process, NGESO were clear as to where the best connection option was within the network.

17. Finally, in respect of the CION process, SASES make assertions about the relevance of a grid connection offer made to the Five Estuaries potential proposal. The claim, without any evidential support, is that there is alternative location for a grid connection. It should be noted that on the TEC register Five Estuaries has a capacity of 348MW and a grid connection date of October 2030. There is no evidence that such an option could accommodate 1700MW by 2024/25.