



Applicant's Responses to the Examining Authority's Request for further information

Applicant: Norfolk Boreas Limited Document Reference: ExA.PD.D13.V1

Deadline 13

Date: July 2020 Revision: Version 1

Author: Royal HaskoningDHV

Photo: Ormonde Offshore Wind Farm





Date	Issue No.	Remarks / Reason for Issue	Author	Checked	Approved
27/07/2020	01D	First draft for internal review	DT/EV	VR	JL
29/07/2020	01F	Final for submission at Deadline 13	CD/DT/JT/EV	VR/JL	JL







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Glossary of Acronyms

AEol	Adverse Effect on Integrity
AOE	Alde Ore Estuary
CRM	Collision Risk Modelling
CSIMP	Cable Specification Installation and Monitoring Plan
DCO	Development Consent Order
dDCO	Draft Development Consent Order
DML	Deemed Marine Licence
EIFCA	Eastern Inshore Fisheries and Conservation Association (or Eastern IFCA)
ES	Environmental Statement
ExA	Examining Authority
FFC	Flamborough and Filey Coast
HHW	Haisborough, Hammond and Winterton
HRA	Habitats Regulations Assessment
IPMP	In Principle Monitoring Plan
m	Metres
MMO	Marine Management Organisation
NE	Natural England
NPS	National Policy Statement
RSPB	Royal Society for The Protection of Birds
SAC	Special Area of Conservation
SIP	Site Integrity Plan
SNCB	Statutory Nature Conservation Body
SoCG	Statement of Common Ground
SoS	Secretary of State
SPA	Special Protection Area





The Applicant's Response to the Examining Authority's Rule 17 Request for Information in regard to the Norfolk Boreas Application.

Following an amendment to the approach to virtual Issue Specific Hearing (ISH5) the sessions due to take place on the 21st, 22nd and 23rd of July were replaced by questions issued in a Rule 17 request for further information published on the 17th July 2020.

The Applicant has responded to each of the relevant questions, detailed in numerical order in Sections 1 to 4 of this document.





1 Offshore Ornithology

Reference	Respondent:	Question:	Applicant's Response:
R17.1.1	Natural England, RSPB	In the light of the SoS decision letters for Norfolk Vanguard and Hornsea THREE published on 1 July 2020, can NE and the RSPB give their current positions for the Proposed Development.	The Applicant notes that this question is directed at Natural England and the Royal Society for the Protection of Birds (RSPB). However, the Applicant considers that the Secretary of State's (SoS) decision to award consent for Norfolk Vanguard is highly relevant to offshore ornithological considerations for Norfolk Boreas, due to the close proximity of the two offshore development areas and the consequently very similar levels of seabird activity recorded at the two sites. The Applicant considers that application of the approach taken by the SoS for Norfolk Vanguard will result in the same conclusions of no Adverse Effects on the Integrity (AEoI) of the Special Protection Areas' (SPA) features with potential connectivity to Norfolk Boreas and in these circumstances there would be no requirement for a derogation case or compensatory measures.
Level of pre	ecaution		
R17.1.2	The Applicant, Natural England, RSPB	To provide the latest considerations on the level of precaution applied to the significance of impacts on seabird populations, and how headroom could be taken into consideration when assessing AEoI.	The Applicant notes that the SoS' decision letter for Norfolk Vanguard highlighted that the ornithology assessment included precaution, and specifically mentioned the presence of headroom as a reason to conclude that there would not be AEoI due to that project. As noted in response to question R17.1.1, the similarities between the Norfolk Boreas and Norfolk Vanguard projects therefore indicate that a similar consideration is appropriate. With respect to headroom, the Applicant's position remains as set out in REP10-033 and REP6-021.
			Natural England's response to WQ3.8.4.1 provided justification for precaution in individual elements of the assessment but did not address the Applicant's concerns on the compounded effect of all of these individual elements of precaution when combined together. The Applicant maintains (as set out in REP4-014) that, while there may be justification in individual elements of precaution (as proposed by Natural England and included in the Applicant's assessment), it does not therefore follow that conclusions based on the combination of all the different sources of precaution are appropriate. The Applicant considers that such an approach in fact results in





Reference	Respondent:	Question:	Applicant's Response:
			over precautionary conclusions, and the SoS' decision for Norfolk Vanguard, as noted above, appears to support this position.
Cumulative	Effects		
R17.1.3	Natural England, RSPB	NE and the RSPB to provide their latest conclusions on significant cumulative displacement impacts for red-throated diver, guillemot and razorbill.	The Applicant notes that this question is directed at Natural England and the RSPB. However, the Applicant maintains that there will not be significant cumulative impacts on these species (as set out in REP2-035). The Applicant reached these conclusions following a robust assessment which considered the over estimation of displacement effects due to over precaution in both rates of displacement and consequent mortality (REP2-035) and population trends and mitigation (e.g. timing of cable installation and best practice vessel operations; REP10-03 Schedules 9 and 10, Condition 14(1)(d)(vi) and Schedule 11 and 12. Condition 19). The Applicant understands that Natural England does not require the cumulative assessment to be updated following the SoS' decision on
			Hornsea Project Three and Norfolk Vanguard (however the Applicant will continue to discuss this point with Natural England should this advice change). Consequently, the Applicant does not intend to update the cumulative assessment and considers that there will be no significant impacts as a result of either the project alone or cumulatively with other projects.
			The Applicant has also requested a meeting with the RSPB to seek an opportunity to continue engagement on these matters and is awaiting a response to this request.
R17.1.4	Natural England, RSPB	NE and the RSPB to provide their latest conclusions on significant cumulative collision impacts for herring gull, lesser black-backed gull, kittiwake and great blackbacked gull.	The Applicant notes that this question is directed at Natural England and the RSPB. However, the Applicant maintains that there will not be significant cumulative impacts on these species (as set out in REP2-035). The Applicant reached these conclusions following a robust assessment which considered the over estimation of collisions due to over precaution in both the collision risk methodologies (e.g. over-estimated nocturnal activity rates; REP5-051), and how these estimates are interpreted (e.g. density independent population modelling) and the presence of headroom in the cumulative totals when as-built collisions are considered (REP6-021).





Reference	Respondent:	Question:	Applicant's Response:
			The Applicant understands that Natural England does not require the cumulative assessment to be updated following the SoS' decision on Hornsea Project Three and Norfolk Vanguard (however the Applicant will continue to discuss this point with Natural England should this advice change). Consequently, the Applicant does not intend to update the cumulative assessments and considers that there will be no significant impacts as a result of either the project alone or cumulatively with other projects.
			Natural England has stated in the Statement of Common Ground (REP10-039) that a significant cumulative impact on herring gull and lesser black-backed gull cannot be ruled out when Hornsea Project Three and Hornsea Project Four are included due to uncertainty with the estimates for those projects. However, in relation to Norfolk Vanguard the SoS has stated that he considers the Hornsea Project Three estimates to be reliable for assessment and has been able to reach conclusions with that project included (note that Hornsea Project Four is still at pre-application stage and therefore no updates are anticipated within the current examination). Therefore, the Applicant considers Natural England should now be able to assess the cumulative total, and reach the same conclusion as the Applicant that there will be no significant cumulative impact for these two species.
R17.1.5	Natural England, RSPB	NE and the RSPB to provide their latest conclusions on combined effects of collision and displacement for cumulative projects for gannet.	The Applicant notes that this question is directed at Natural England and the RSPB. However, the Applicant maintains that there will not be a significant cumulative impact on this species (as set out in REP2-035). The Applicant reached these conclusions following a robust assessment which considered the high likelihood that impacts are over-estimated due to the use of overly precautionary parameter values for predicting displacement and consequent mortality, precautionary rates in the collision risk models (e.g. for rates of avoidance and nocturnal activity REP5-051) and in how the mortality estimates are interpreted (e.g. unrealistic density independent population modelling). In addition, the cumulative totals include overestimates of the mortality for other wind farms which have been built with less impactful designs (e.g. fewer turbines) than the consented designs





Reference	Respondent:	Question:	Applicant's Response:
			which Natural England advise be used in the cumulative assessments (i.e. headroom, REP6-021).
Alde-Ore Es	stuary SPA		
R17.1.6	Natural England	NE to provide its latest conclusions on no AEoI for lesser black-backed gull population from in-combination collision effects.	The Applicant notes that this question is directed at Natural England. However, the Applicant maintains its position that there will be no AEoI for the lesser black-backed gull at Alde-Ore Estuary SPA due to the project alone or in-combination with other projects (as detailed in REP2-035). The Applicant also considers that the SoS' decision for Norfolk Vanguard is
			directly relevant to this question (paragraph 5.7):
			The Secretary of State considers that the potential loss of a relatively very small number of birds through collision impacts does not contribute in a significant way to the total number of birds predicted to be impacted incombination ("de minimis"). On this basis the Secretary of State concludes that the proposed development will not have an adverse effect on the above SPA.
			Norfolk Boreas is located alongside Norfolk Vanguard, the two projects have been assessed with identical turbine parameters, and both projects share the same seabird sensitivities. This is borne out in the very similar impact magnitudes for the two projects (e.g. using Natural England's preferred precautionary approach, collisions of lesser black-backed gull from Alde Ore SPA is 2.6 at Norfolk Vanguard and 2.1 at Norfolk Boreas, and using the Applicant's preferred evidence based approach is 1.6 at both Norfolk Vanguard and Norfolk Boreas). It is also of note that Norfolk Boreas is slightly further from this SPA than Norfolk Vanguard, and therefore connectivity would be predicted to be lower. Therefore, the Applicant considers that the same conclusion can be made for Norfolk Boreas as was made for Norfolk Vanguard (of no AEoI alone or in-combination).





Reference	Respondent:	Question:	Applicant's Response:		
Flamboroug	Flamborough and Filey Coast SPA				
R17.1.7	Natural England	NE to provide its latest conclusions on no AEoI for razorbill and guillemot populations from in-combination displacement effects.	The Applicant notes that this question is directed at Natural England. However, the Applicant considers that Natural England has applied an over precautionary approach to this assessment (as set out in REP6-021, and noted in response to R17.1.3) and maintains its position that there will be no AEoI for the guillemot and razorbill features of the Flamborough and Filey Coast SPA as a result of either project alone or in-combination displacement. Natural England has stated in the Statement of Common Ground (REP10-039) that in-combination AEoI can be ruled out for these species when Hornsea Project Three and Hornsea Project Four are excluded, but cannot be ruled out when they are included due to uncertainty with the estimates for those projects. The Applicant considers that the Appropriate Assessment for Norfolk Vanguard provides relevant guidance from the SoS on the interpretation of in-combination totals which include Hornsea Project Three (note that Hornsea Project Four is still at the pre-application stage and therefore no further updates are expected within the current project examination). The SoS has stated (HRA paragraphs 5.4.6 and 5.4.8) that he: is content that the inclusion of the Hornsea Three data does not affect the conclusions of the in-combination assessment. On this basis an AEoI on razorbill of the FFC SPA from displacement can be ruled out from the Project in-combination. And, is content that the inclusion of the Hornsea Three data does not affect the conclusions of the in-combination assessment. On this basis an AEoI on guillemot of the FFC SPA from displacement can be ruled out from the Project in-combination.		





Reference	Respondent:	Question:	Applicant's Response:
			Norfolk Boreas makes similarly small contributions to the in-combination totals for these species as Norfolk Vanguard and therefore the Applicant considers that the same conclusions (of no AEoI in-combination, including Hornsea Project Three) are appropriate.
			The Applicant understands that Natural England does not require the incombination assessment to be updated following the SoS' decisions on Hornsea Project Three and Norfolk Vanguard (however the Applicant will continue to discuss this point with Natural England should this advice change). Consequently the Applicant does not intend to update the incombination assessments and considers that there will not be an AEoI as a result of either the project alone or in-combination with other projects
R17.1.8	Natural England	NE to provide its latest conclusions on no AEoI for kittiwake, populations from in-combination collision effects.	The Applicant notes that this question is directed at Natural England. However, the Applicant considers that Natural England has applied an over precautionary approach to this assessment (as set out in REP6-021 and in the response to R17.1.4) and maintains its position that there will be no AEoI for the kittiwake feature of the Flamborough and Filey Coast SPA as a result of either project alone or in-combination collisions.
			The Applicant also considers that the SoS' decision for Norfolk Vanguard is directly relevant to this question (paragraph 5.7) which states:
			The Secretary of State considers that the potential loss of a relatively very small number of birds through collision impacts does not contribute in a significant way to the total number of birds predicted to be impacted incombination ("de minimis"). On this basis the Secretary of State concludes that the proposed development will not have an adverse effect on the above SPA.
			In the Norfolk Vanguard HRA (paragraph 5.4.2) the SoS has also stated:
			He recognises the precautionary nature of the NE approach to CRM upon which this assessment is based. He is also aware of the potential for lower numbers of predicted collisions than previously calculated based on built





Reference	Respondent:	Question:	Applicant's Response:
			scenarios as opposed to the assessed or consented scenarios (the 'head room').
			The Norfolk Vanguard and Norfolk Boreas projects are located alongside one another, have been assessed with identical turbine parameters, and both projects share the same seabird sensitivities. This is borne out in the very similar impact magnitudes for the two projects (e.g. Flamborough and Filey Coast SPA kittiwake collisions using Natural England's preferred precautionary approach are 21 at Norfolk Vanguard and 14 at Norfolk Boreas and using the Applicant's preferred evidence based approach these are 4.6 and 6.1 respectively). It is also of note that Norfolk Boreas is slightly further from this SPA than Norfolk Vanguard, and therefore connectivity would be predicted to be lower. Therefore the Applicant considers that the same conclusion can be made for Norfolk Boreas as was made for Norfolk Vanguard (of no AEoI alone and a <i>de minimis</i> contribution to the incombination total).
R17.1.9	Natural England	NE to provide its latest conclusions on no AEoI for gannet populations from in-combination displacement and collision effects.	The Applicant notes that this question is directed at Natural England. However, the Applicant considers that Natural England has applied an over precautionary approach to this assessment (as set out in REP6-021 and in the response to R17.1.5) and maintains its position that there will be no AEoI for the gannet features of the Flamborough and Filey Coast SPA as a result of either project alone or in-combination collisions and displacement combined.
			Natural England has stated in the Statement of Common Ground (REP10-039) that in-combination AEoI can be ruled out for this species when Hornsea Project Three and Hornsea Project Four are excluded, but cannot be ruled out when they are included due to uncertainty with the estimates for those projects. The Applicant considers that the Appropriate Assessment for Norfolk Vanguard provides relevant guidance from the SoS on the interpretation of in-combination totals which include Hornsea Project Three (note that Hornsea Project Four is still at the pre-application stage and





Reference	Respondent:	Question:	Applicant's Response:
			therefore no further updates are expected within the current project examination). The SoS has stated (HRA paragraph 5.4.4) that:
			the Secretary of State has concluded that the use of the Hornsea Three data within the in-combination assessment is appropriate.
			Norfolk Boreas makes similarly small contributions to the in-combination total for this species as Norfolk Vanguard and therefore the Applicant considers that the same conclusions made for Norfolk Vanguard by the SoS are appropriate.
R17.1.10	Natural England	NE to provide its latest conclusions on no AEoI for the assemblage at Flamborough and Filey Coast SPA on the basis of displacement or collision impacts for the project in-combination.	The Applicant notes that this question is directed at Natural England. However, the Applicant considers that Natural England has applied an over precautionary approach to this assessment (as set out in REP6-021) and maintains its position that there will be no AEoI for the seabird assemblage feature of the Flamborough and Filey Coast SPA as a result of either project alone or in-combination impacts.
			Natural England has stated in the Statement of Common Ground (REP10-039) that in-combination AEoI can be ruled out for this species when Hornsea Project Three and Hornsea Project Four are excluded, but cannot be ruled out when they are included due to uncertainty with the estimates for those projects. The Applicant considers that the Appropriate Assessment for Norfolk Vanguard provides relevant guidance from the SoS on the interpretation of in-combination totals which include Hornsea Project Three (note that Hornsea Project Four is still at the pre-application stage and therefore no further updates are expected within the current project examination). The SoS has stated (HRA paragraph 5.4.4) that:
			the Secretary of State has concluded that the use of the Hornsea Three data within the in-combination assessment is appropriate.





Reference	Respondent:	Question:	Applicant's Response:
			Similar statements are made for the other species included in the assemblage (e.g. paragraphs 5.4.6 and 5.4.8). Therefore, it is appropriate to consider that following this guidance from the SoS a conclusion of no AEoI for in-combination impacts on the seabird assemblage feature can be reached.
Compensat	ory Measures		
R17.1.11	Applicant	Alde-Ore Estuary SPA: The Applicant to respond to NE's request [REP10-064, Q4.5.10.2] for a commitment to deliver measures on the ground to offset predicted collision risk mortality.	The Applicant's proposed compensation for lesser black-backed gull at the Alde-Ore Estuary SPA, submitted without prejudice, proposes to deliver predator exclusion using fencing (REP7-026). However, during discussions with stakeholders the Applicant became aware of debate over how best to implement this (i.e. the location and size of the fenced area) and therefore it was considered that the most appropriate first step was to ensure that this was properly considered in advance of finalising any strategy for approval. Thus, while it is anticipated that any final strategy required to be delivered as compensation (should this be required) would be based on the installation of predator proof fencing, this will be discussed with relevant stakeholders before the strategy is submitted to the Secretary of State for approval. For this reason a funded coordinator role was proposed as the first step (as set out in REP7-026). The Applicant welcomes Natural England's agreement that identifying a suitable location and installing predator proof fencing prior to construction would be achievable and is an appropriate compensatory measure (REP9-046). As set out above, the process to identify the location would be undertaken through collaboration with relevant stakeholders, mediated by the proposed facilitator role.
R17.1.12	Applicant	The Applicant [REP11-007, Q4.5.10.2] states that there were different opinions on what the best options for compensation measures would be and the Applicant would continue to engage with NE to further develop this measure post consent. The Applicant is reminded of the SoS decision letter for Norfolk Vanguard, which requires	Natural England has confirmed to the Applicant (during a meeting on the 10 th July): • That they agree with the in principle compensatory measures proposed to be taken forward by the Applicant, if required by the SoS (as also confirmed in REP9-046);





Reference	Respondent:	Question:	Applicant's Response:
		"Applicants and statutory nature conservation bodies ("SNCBs") to engage constructively during the preapplication period and provide all necessary evidence on these matters, including possible compensatory measures, for consideration during the Examination".	 That they do not require any further information on the proposed compensatory measures at this stage, and that they are content that the precise details of the compensatory measures can be dealt with post consent; and Both Natural England and the MMO have also confirmed that they are content with the proposed mechanism for securing the compensatory measures in the dDCO.
			Therefore, the Applicant considers that an appropriate level of detail has been provided, with which Natural England agrees, and that should the SoS determine that compensation is required by Norfolk Boreas this can be appropriately secured through the DCO, with the precise details being finalised post consent in consultation with Natural England.
R17.1.13	Natural England	What compensatory measures does NE consider suitable to deliver for lesser black-backed gull?	Whilst this question is directed to Natural England, the Applicant notes that Natural England provided a review of the proposals made by the Applicant and their respective suitability (REP9-046). Natural England's review did not identify alternative options which the Applicant had not already considered and therefore the Applicant is not aware of any other measures which Natural England might consider suitable. In addition, and as noted above (R17.1.12), Natural England has confirmed that it agrees with the proposed in principle compensation measures (REP9-046).
R17.1.14	Applicant	Flamborough and Filey Coast SPA Similar to R17.1.12, the Applicant to provide additional details of compensation measures appropriate to the Proposed Development for kittiwake at D13. The ExA reminds the Applicant that compensatory measures must be specific to Norfolk Boreas and not duplicate those for Norfolk Vanguard.	The Applicant has proposed in principle kittiwake compensatory measures which are specific to Norfolk Boreas [REP7-025] and which have been agreed with Natural England (see REP9-047). The compensation measure proposed for kittiwake (an artificial nesting platform) is not limited to a single installation and multiple artificial sites could be constructed without detracting from their effectiveness. In any event, the compensatory measures proposed for Norfolk Vanguard were not required by the SoS, so although the type of measures proposed are the same, there is no potential for these to be duplicated.





Reference	Respondent:	Question:	Applicant's Response:
R17.1.15	Natural England	What compensatory measures does NE consider suitable to deliver for kittiwake?	Whilst this question is directed to Natural England, the Applicant notes that Natural England provided a review of the proposals made by the Applicant and their respective suitability (REP9-046). Natural England's review did not identify alternative options which the Applicant had not already considered and therefore the Applicant is not aware of any other measures which Natural England might consider suitable. In addition Natural England has already agreed that the Applicant's in principle proposal (of an artificial colony) is appropriate for delivering the necessary level of compensation (REP9-047).
R17.1.16	Applicant	General The Applicant to inform the ExA whether any of the compensation measures under consideration would require land access rights. If so, what rights would be sought and where and how are these being addressed.	For the FFC SPA, as the Applicant outlines in paragraph 100 of Appendix 1 of the In Principle Habitats Regulations Derogation Provision of Evidence [REP11-012], the structure for the nest sites would need to be consented by way of a separate Marine Licence post consent. However, the artificial nest sites will be constructed within the existing offshore Order limits for the project for which the Applicant has already entered into an agreement for lease with The Crown Estate. In relation to the AOE SPA, as the Applicant outlines in section 4.6 of Appendix 2 of the In Principle Habitats Regulations Derogation Provision of Evidence [REP11-013], the strategy adopts a phased approach which, at the outset, requires the approval and agreement of the working group to the compensatory measures. This working group would include the Applicant, Natural England, the Local Planning Authority, the RSPB and the National Trust and therefore includes those with land ownership interests in the location in which fencing is likely to be proposed. However, the Applicant would only propose to secure land access rights once the precise location of fencing is established. This would be part of the agreement on the strategy with the Working Group, and would be included within the strategy submitted in accordance with Part 2 of Schedule 19.
R17.1.17	Applicant, Natural England	Updates The Applicant and NE to detail any further updates on agreement to or requirements for compensatory measures.	The Applicant considers the SoS' decision on Norfolk Vanguard, which is located immediately adjacent to Norfolk Boreas and therefore has very similar seabird interests and has very similar impact magnitudes (as referred to above, R17.1.6, R17.1.7, R17.1.8 and R17.1.9), is highly relevant to





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			Norfolk Boreas. The SoS was able to conclude no AEoI on the basis that Norfolk Vanguard's contribution to in-combination impacts was <i>de minimis</i> and consequently no compensatory measures were required for either the Alde-Ore Estuary SPA or the Flamborough and Filey Coast SPA. The Applicant considers that the same approach can be applied to Norfolk Boreas which would lead to the same conclusions as those for Norfolk Vanguard, that there is no AEoI and that no compensatory measures are therefore required.

2 Haisborough Hammond and Winterton SAC

Reference	Respondent:	Question:	Applicant's Response:
R17.1.18	Natural England	Cable Protection: NE to clarify the statement in the SoCG [REP10-038, p13] that while it does not agree to no AEoI, it acknowledges that mitigation would significantly reduce the risk of an AEoI. Can NE, therefore, confirm whether or not there is no AEoI after agreed mitigation?	The Applicant met with Natural England on the 10 July 2020. On the basis of discussion during the meeting, the Applicant understands that Natural England are currently considering the Secretary of State's decision documents for the Norfolk Vanguard project and the potential implications for the Norfolk Boreas project. The Applicant understands that until due consideration has been given to the decision in this context and Natural England's review is complete, Natural England's position on AEoI remains as previously stated. The Applicant and Natural England have scheduled a meeting for early August when it is expected that Natural England will be able to provide an update on their position to the Applicant.
R17.1.19	Natural England	Is NE content with the detail in the In Principle Monitoring Plan on pre and post-construction surveys? If not, what additional details does it consider needs adding?	The Applicant is not aware of any additional information which Natural England would wish to see included within the IPMP. The commitment has been made within the In Principle Monitoring Plan (IPMP) to agree the scope and timing of each pre-construction survey within the HHW SAC with Natural England and the MMO through the HHW SAC control document, and therefore this will be done at the most appropriate





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			time, which the Applicant maintains is post consent. The Applicant understand that the MMO is content with this position.
R17.1.20	Applicant	Reef features The Applicant to respond to NE's advice [REP10-038, p21] that there are uncertainties that micrositing as a mitigation measure would be 100% achievable. NE advise that all reef, including low and patchy reef, should be avoided by micrositing but it is not confident that this would be possible. What leads the Applicant to believe that this would be possible?	The Applicant's position, as presented throughout the Examination is that, based on the best available scientific evidence, micrositing to avoid all Annex I reef will be possible. The Evidence that this will be possible is provided within: • Section 7.4.2 of the Information to Support HRA [APP-201]; • Appendix 7.2 of the Information to Support HRA [APP-207]; • Table 5 of the Applicant's Comments on Relevant Representations - Submitted in response to the Examining Authority's request in the Rule 6 Letter [AS-024]; • Section 5.2 and Appendix 1 of the Outline Norfolk Boreas Haisborough Hammond and Winterton Special Area of Conservation Site Integrity Plan (the most recent version is REP10-028] however evidence has been provided in this plan from its first submission as part of the Application [APP-711]); • Section 4.2 and Appendix 1 of the Cable Specification, Installation and Monitoring Plan [REP10-026]; • The Clarification note Optimising cable routeing through the HHW SAC [REP4-022]; • Section 2.1 and 3.2.2 of The Haisborough Hammond and Winterton Special Area of Conservation Position Paper [REP5-057] (including Appendix 1 [part of REP5-057] and Appendix 2 [REP5-058]); • Section 1.9 of the Applicant's Comments on Deadline 5 Submissions [REP6-013]; • The Applicant's Comments on Responses to the Examining Authority's Further Written Questions [REP6-014], responses to Q2.1.0.4; • Annex 4 of the Applicant's Additional information for the HHW SAC position paper [REP6-019] Section 3.3, Section 5; • Appendix 3, document reference 8.25 In Principle Habitats Regulations Derogation, Provision of Evidence [REP7-027]





Reference	Respondent:	Question:	Applicant's Response:
			 Section 3 and Section 3.1; The Applicant's Comments on responses to the third round of written questions [REP8-015] Q3.8.3.6; The Applicant's Comments on Deadline 9 Submissions and Other Submissions [REP10-033] Sections 1.9 and 1.15; The Applicant's Statement of Common Ground with Natural England [REP10-038]; and Section 1.5 of the Applicant's Comments on Deadline 10 Submissions and Other Submissions [REP11-008].
			To summarise the evidence contained within the examination documents above, the Applicant maintains that the best available scientific evidence (including site specific survey completed by the Applicant augmented by third party data and used in advanced mapping techniques by Envision Mapping Limited [APP-207]) shows that it will be possible to microsite around the current location and extent of <i>S.spinulosa</i> reef within the Norfolk Boreas offshore cable corridor. This is due to the fact that the corridor is wide (between 2 and 4.7km) and the mapping shows that currently <i>S.spinulosa</i> reef within this corridor does not extend such that it would prevent micrositing.
			As summarised in REP5-057 Natural England have expressed concerns that the extent of Annex I reef could increase significantly prior to construction which would limit the ability to microsite.
			As explained in detail in section 2.1.1 of the Haisborough Hammond and Winterton Special Area of Conservation Position Paper [REP5-057] the Applicant does not consider that there is any reasonable scientific evidence to demonstrate that the extent of <i>S.spinulosa</i> reef will have changed significantly by the time Norfolk Boreas commences construction. Natural England consider that proposed fisheries closures within the HHW SAC could increase the extent of <i>S.spinulosa</i> reef as a result of a reduction in fishing pressure. However, as explained in REP5-057 the Applicant has reviewed current levels of fishing pressure within the proposed fisheries closures and found that there is currently very low or no fishing currently occurring in these





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			areas and therefore implementation of the closures is very unlikely to significantly increase the extent of <i>S.spinulosa</i> reef.
			Therefore, the Applicant maintains that as it would be possible to microsite to avoid Annex I reef at the present time it is also highly likely that it will be possible to do so at the time Norfolk Boreas starts construction. Working with Natural England and the MMO, the Applicant has introduced further mitigation measures captured within the outline HHW SAC control document (document 8.20, REP10-028 and REP10-026) to give further confidence that Annex I S.spinulosa reef will be avoided. The relevant mitigation measures committed throughout the course of the examination are as follows:
			 A reduction in the amount of cable protection to protect export cables which have not been buried to the optimum depth due to ground conditions from 10% to 5%; A commitment to avoid placing cable protection in areas that Natural England have the greatest confidence that S.spinulosa reef can recover (termed Priority Areas by the Applicant, see the HHW SAC control document Figure 4.1 in the CSIMP or 5.1 in the SIP); and A commitment to decommission all cable protection which has not been buried to the optimum depth due to ground conditions.
			With regard to the particular point referenced in the question on page 21 of the Statement of Common Ground (SoCG), the Applicant asserts that where an area of seabed has been defined as supporting patchy reef, this will be classified as such due to there being between 10% and 20% coverage of actual reef. This is the criteria developed by Gubbay (2007). Therefore, within such an area there would be between 80% and 90% of the seabed which would not support reef. The Applicant maintains that even areas defined as patchy reef could be avoided through micrositing based on best available scientific evidence. However, should the extent of reef have expanded significantly prior to construction, areas defined as containing patchy reef may present opportunities for micrositing whilst still avoiding the locations of actual reef. The final cable route or routes would be agreed with the MMO in consultation with Natural England through the HHW SAC control document and the onus





Reference	Respondent:	Question:	Applicant's Response:
			would be on the Applicant to demonstrate that it was avoiding all areas of actual reef.
			The Applicant considers that it has demonstrated that even using the maximum cable spacing distances it will be possible to route up to two export cables for Norfolk Boreas as well as up to two export cables for Norfolk Vanguard through the HHW SAC whilst avoiding all sensitive features. This is presented within the Optimising cable routeing through the HHW SAC clarification note [REP4-022]. This note is based on best available scientific evidence.
			In response to Natural England's concerns regarding a significant increase in reef to such an extent that it spans the entire cable corridor and therefore micrositing would not be possible, the Applicant considers that in such a scenario, any areas of disturbance caused by cable routing would rapidly recover and any areas of habitat loss through cable protection would be small scale. Therefore, in this hypothetical scenario AEoI could also be ruled out. The Applicant considers that this position is supported by the SoS's decision on the Norfolk Vanguard project which has concluded that there is no AEoI as a result of in-combination cable installation for both Norfolk Vanguard and Norfolk Boreas. This conclusion is based on the fact that the area affected will be small and that the habitats are likely to rapidly recover.
R17.1.21	ММО	Regarding the potential impacts to Annex 1 reef and Archaeological interest features, MMO in [REP5-073] express concerns that micro-siting may not be possible and would like this to be dealt with at consenting stage rather than post consent. Is the MMO now content with the Applicant's provisions for micrositing to mitigate potential impacts on Annex 1 reef or sandbank features and archaeological interest features? If not, what additional measures would it consider necessary?	As described above and demonstrated within the Optimising cable routeing through the HHW SAC clarification note [REP4-022], the Applicant's firm position is that micrositing to avoid both Annex I reef (see response to 17.1.2 above) and Archaeological features will be possible and that this has been clearly demonstrated at the consenting stage. As demonstrated in the Information to support HRA [APP-201] and the HHW SAC position paper [REP5-057] micrositing to avoid Annex I reef would only not be possible in a hypothetical scenario whereby reef had extended to such an extent that it spanned the majority of the 2 to 4.7km width of the offshore cable corridor. As explained in the response to R17.1.20 above, this is considered to be very unlikely notwithstanding the proposed fisheries closure, given the very low





Reference	Respondent:	Question:	Applicant's Response:
			levels of fishing in this location. In any event, under this scenario reef would be so extensive that any impacts associated with a failure to microsite would be very small scale in comparison to the overall reef and would rapidly recover therefore not resulting in AEoI.
R17.1.22	Natural England	Sandbank features: NE to detail any remaining concerns that the Applicant's measures for promoting recovery of sandbanks [REP10-038, p83] would change the sediment composition of the seabed. If it does have concerns, what additional measures does NE consider would be necessary?	The Applicant maintains that the mitigation measures proposed represent the best method for maintaining sediment composition and that no condition is required. Following a recent meeting with Natural England we understand that Natural England are considering this further following the SoS's ruling that a specific condition was not required for Norfolk Vanguard (nor for Hornsea Three).
			The Norfolk Vanguard decision by the SoS supports the Applicant's view that a condition is not required because of the commitment in the HHW SAC control document (document 8.20) to require the location and method for sediment disposal to be agreed with the MMO in consultation with Natural England. Norfolk Boreas has included the same mitigation measures as Norfolk Vanguard in the HHW SAC control document (8.20).
R17.1.23	Applicant	SIP and CSIMP Does the Applicant accept NE's and MMO's view that the Cable Specification, Installation and Monitoring Plan should be re-named Cable Specification, Installation, Mitigation and Monitoring Plan and that mitigation should be included? If not, why not?	As stated at Deadline 10 in the Applicant's Comments on Deadline 9 Submissions and Other Submissions [REP10-033], "The Applicant does not fundamentally object to this name change, but it does consider that a change in name at this late stage of the examination would be unhelpful and lead to confusion given that so many of the Examination submissions thus far refer to the document under its current title. This could, however, be addressed as part of the final submission of the document post consent." The Applicant's position remains unchanged from that stated at Deadline 10.
			Furthermore, the Applicant considers that agreement on the actual content of the document is more important than agreement on the exact name of the document, and as agreement has been reached on the content to be included in the document, the naming of it is to all intents and purposes immaterial at this stage.
R17.1.24	Natural England,	a) NE expresses concern in [REP9-039, p4] that there is no evidence presented that a 30-year temporary cable	The Applicant responded to this concern raised by Natural England in row 5, Section 1.9 of the Applicant's Comments on Deadline 9 Submissions and





Reference	Respondent:	Question:	Applicant's Response:
	Applicant protection would have no impact on site conservation objectives. Does NE still have these concerns?	Other Submissions [REP10-033] and further information is provided in that response.	
		b) If so, how would the Applicant address these? c) What evidence can the Applicant present about the likely effects of cable protection being in place for 30 years?	The Applicant understands that Natural England is concerned that there are no studies available which can specifically demonstrate that Sandbank or <i>S.spinulosa</i> reef communities would rapidly recover from the decommissioning of types of cable protection which the Applicant proposes to deploy. This is because offshore windfarms located within such habitats and using such cable protection techniques have not yet been decommissioned. However, based on the rapid recovery of Sandbank communities to other impacts, such as windfarm installation and to dredging activity, the Applicant maintains that the best available scientific evidence indicates that recovery would occur rapidly following the decommissioning of cable protection (see below).
			Furthermore, in light of the condition included by the SoS on the Norfolk Vanguard DCO, the Applicant proposes to include a condition which requires a cable protection decommissioning plan within the HHW SAC. The Applicant believes this will provide confidence that the cable protection could be decommissioned, such that Condition 3 (1) (g) of the transmission DMLs (in the Haisborough, Hammond and Winterton Special Area of Conservation, cable protection must not take the form of rock or gravel dumping) would no longer be necessary and could be deleted. The Applicant is engaging with Natural England and the MMO on these proposed amendments to the dDCO, however Natural England has not been able to agree the approach proposed by the Applicant in time for Deadline 13 and therefore a meeting has been arranged for the 13 th of August (the earliest date NE could attend) during which this matter will be progressed. The Applicant is confident that this matter will be concluded for Deadline 14.
			The Applicant presented evidence within its DCO Application and in subsequent documents during the examination demonstrating that that Sandbank communities and <i>S.spinulosa</i> reef can recover from a range of impacts. References used are as follows (all of which are referenced within the Information to support HRA [APP-201] unless otherwise stated):





Reference	Respondent:	Question:	Applicant's Response:
			 Tillin and Marshall, 2015 Sabellaria spinulosa on stable circalittoral mixed sediment. DONG, 2017 Race Bank Export Cable Dredge Areas, pre, dredged and post-dredge studies. Available to download from the MMO Public Register. Gibb et al. (2014); Assessing the sensitivity of Sabellaria spinulosa reef biotopes to pressures associated with marine activities. Cooper et al., 2007; Recovery of the seabed following marine aggregate dredging on the Hastings Shingle Bank off the southeast coast of England. Pearce et al. 2007 Recoverability of Sabellaria spinulosa Following Aggregate Extraction; Pearce et al., 2011a Sabellaria spinulosa Reef Ecology and Ecosystem Services; Pearce et al 2011b Impacts of marine aggregate extraction on adjacent Sabellaria spinulosa aggregations and other benthic fauna Hendrick et al., 2011 Biogenic Reefs and the Marine Aggregate Industry; Holt et al 1998 Biogenic reefs: An overview of dynamic and sensitivity characteristics for conservation management of marine SACs; Leonhard & Pedersen 2006 Benthic Communities at Horns Rev Before, During and After Construction of Horns Rev Offshore Wind farm; Hill et al 2011. Recovery of seabed resources following marine aggregate extraction [REP10-033]; Foden 2009 Recovery rates of UK seabed habitats after cessation of aggregate extraction [REP10-033]; Newell et al 2002 Impact of Marine Aggregate Dredging and Overboard Screening on Benthic Biological Resources in the Central North Sea [REP10-033]; and Newell & Woodcock 2013 Aggregate dredging and the marine environment: an overview of recent research and current industry practice[REP10-033].





Reference	Respondent:	Question:	Applicant's Response:
			The Applicant also notes that the Appropriate Assessment undertaken by the SoS for Hornsea Project Three has made reference to evidence presented by the Orsted Applicant from the Race Bank offshore windfarm, much of which relies upon the information provided in DONG 2017 (which has also been quoted as evidence in the Norfolk Boreas Information to Support HRA APP-201). The SoS states that "studies undertaken on Race Bank showing that the majority, if not all, of sandbank features will recover following the cessation of activities." The SoS goes on to state that: "The Secretary of State is not aware of any substantive evidence as to why the complete removal of all infrastructure above or protruding from the seabed at the time of decommissioning within the North Norfolk Sandbanks and Saturn Reef SAC would not have the same beneficial effects as those from similar type of impacts predicted to occur within the Dogger Bank SAC." The North Norfolk Sandbanks and Saturn Reef and Dogger Bank SACs are both designated for Sandbanks which are slightly covered by sea water all the time, as is the HHW SAC. Therefore, this provides further support for the conclusion reached by the Applicant.
			In summary, although it is not possible to provide like for like examples of recovery following the decommissioning of cable protection as decommissioning of cable protection in similar environments has not yet been studied, the Applicant has provided a large body of comparable evidence to show that in this habitat recovery has occurred and that it has occurred rapidly. Therefore, based on the best available scientific evidence it is reasonable to conclude that the same would occur following the decommissioning of Norfolk Boreas's cable protection.
R17.1.25	Natural England, MMO	In the light of the SoS decision on Norfolk Vanguard, what is NE's and MMO's final conclusion regarding the appropriateness of both the SIP and CSIMP for undertaking appropriate assessment and addressing uncertainties related to cable laying?	Given that the SIP is described by the SoS in his letter as "an additional safeguarding mechanism" and " not critical to our recommendation", the Applicant considers that the CSIMP, which contains all of the same mitigation measures but without the Grampian condition, can be relied upon to address uncertainties and to mitigate impacts such that a conclusion of no AEoI can be reached. Furthermore, the Applicant understands that Natural England and the MMO support the approach of securing the CSIMP in preference to





Reference	Respondent:	Question:	Applicant's Response:
			the SIP. However, in the interests of consistency between Norfolk Boreas and Norfolk Vanguard, and in the event that the additional safeguard is recommended by the Examining Authority or considered appropriate by the Secretary of State, the Applicant proposes to retain optionality for both the SIP and CSIMP in the dDCO.
R17.1.26	Applicant	Compensatory Measures Notwithstanding the Applicant's view that it is not possible to conclude the precise size of any compensatory measures [REP11-008, p27] pending the SoS decision, the ExA requires details of possible compensation measures in the event of no AEoI for one or more features of cable protection, cable installation, Annex I reef or Annex I sandbank.	The Applicant is of the firm opinion that AEoI for the HHW SAC can be ruled out at the consenting stage and therefore compensatory measures are not required [APP-201, REP5-057, REP6-016 and REP7-027]. The findings of the SoS's Appropriate Assessment for the Norfolk Vanguard project support this view especially in the in-combination assessment which rules no AEoI as a result of both Norfolk Boreas and Norfolk Vanguard. Therefore, any compensatory measures remain "in-principle" and are provided on a without prejudice basis.
			The principle of developing compensatory measures provided within REP7-027 and REP11-014 has been agreed in consultation with Natural England. During this process it was determined that the most suitable method for providing compensatory measures was through an extension to the HHW SAC.
			In order to determine the size of the possible extension it was proposed that a 10:1 ratio should be used, i.e. the area of extension should be ten times the size of the area impacted. This recognises that the whole extension area is not guaranteed to achieve favourable condition.
			A worked example is included within the in principle document which uses the impact of habitat loss as a result of installed cable protection, and is presented again in summary here. The maximum area of habitat loss due to cable protection would be 20,000m² and therefore using the ratio of 10:1 an area of 200,000m² or 0.2km² would be sufficient to compensate for the loss. As the HHW SAC is nearly 1,500km² an extension of 0.2km² would be proportionately very small and therefore Natural England advised that, given the amount of work involved to designate the extension, it would better to





Reference	Respondent:	Question:	Applicant's Response:
			extend the HHW SAC by a much greater area in order to make a meaningful contribution to the SAC.
			As demonstrated in the in principle compensatory measures document [REP7-027] it would be feasible to extend the HHW SAC by up to 120km² if required. An extension of this size would clearly overcompensate for the worked example provided of cable protection.
			The example of habitat loss due to cable protection was chosen for the worked example as this was the impact of greatest concern for Natural England. However, an extension of the size proposed would also overcompensate in the event AEoI could not be ruled out due to other impacts. For example, the impact that could result in the largest possible area affected is the temporary impacts caused by cable installation. Cable installation could temporarily affect a maximum area of 2.45km² [REP10-026] and therefore using the 10:1 ratio this would equate to 24.5km². This assumes a highly over precautionary approach whereby the absolute maximum area of impact would occur and that there would be no recovery at all following cable installation; which is extremely unlikely as all available scientific evidence points to recovery occurring. If it were determined that an area of 2.45km² was required, this would also be sufficient to compensate for all other impacts such as habitat loss through cable protection as that impact would occur within the 2.45km² for cable protection. 24.5km² is only 20% of the size of the indicative extension area illustrated in Figure 4.4 of REP11-014. Therefore, regardless of what impact is concluded to cause AEoI, if any, the indicative extension area to the HHW SAC would comfortably be able to accommodate the size of any compensatory measures.
			With regard to a potential that AEoI could not be ruled out for either Sandbank or Reef features, it should be noted that within the HHW SAC there is no overlap between the Areas to be managed as Annex I reef and the areas to be managed as Annex I Sandbanks (this is illustrated in Figure 4.4 of the document [REP11-014]). This is because the <i>S.spinulosa</i> reef is only supported by the stable trough areas between the Sandbanks. Therefore should the SoS determine that Norfolk Boreas was to have an impact on 20,000m² of Sandbank due to habitat loss, it would not also be possible for the project to





Reference	Respondent:	Question:	Applicant's Response:
			have an impact on 20,000m ² of Annex I <i>S.spinulosa</i> reef. Therefore, the Applicant considers that compensatory measures would not be required for the full maximum area of each feature separately as this would be double counting. Notwithstanding this the indicative extension area is sufficiently large to compensate for any effects on either feature.
			As shown in Figure 4.4 of the document [REP11-014] the proposed extension area encompasses extensive Annex I sandbanks as well as areas where Natural England are confident that Annex I <i>S.spinulosa</i> reef can occur (or reestablish). The final size of any SAC extension would be determined based on the impacts for which AEoI had not been ruled out by the SoS and the final project design.
			As stated in REP9-048 and confirmed during a recent meeting (10 July 2020), "Natural England support the thorough consideration of compensatory measures which have been proposed [by the Applicant (in consultation with Natural England)]. Natural England confirmed during the meeting on the 10 July that they consider that the proposals contain a sufficient level of detail to demonstrate that they can suitably compensate for any AEoI and they are in agreement that any further detail would be agreed post consent in the final plans.
			In summary the indicative extension area would be large enough to compensate many times over, for the maximum combined size of impact that could occur within the HHW SAC as result of the Norfolk Boreas Project.
R17.1.27	EIFCA	Eastern IFCA to confirm its final position on compensatory measures, taking account of the Applicant's response [REP11-008].	





3 Southern North Sea SAC

Reference	Respondent:	Question:	Applicant's Response:
R17.1.28	Natural	If NE and MMO still consider that it is not appropriate to	The Applicant understands that both Natural England and the MMO
	England,	equate the use of the SIP process to its use in the SNS	consider the use of a SIP is appropriate in the case of the SNS SAC:
	MMO	SAC, in relation to the disturbance of marine mammals, what do they consider to be an appropriate process?	As stated in the SoCG with NE [REP10-038]:
			"Natural England is broadly in agreement that the implementation of the SIP is appropriate."
			Following a meeting with the MMO held on the 13 July 2020, the Applicant understands that the MMO also supports the use of a SIP for the SNS SAC.
R17.1.29	ММО	The MMO to provide an update on discussions with	
		Regulators Group regarding management of underwater	
		noise risk.	

4 Climate Change

Reference	Respondent:	Question:	Applicant's Response:
R17.1.30	Applicant	The EA's National Flood and Coastal Erosion Risk Management Strategy for England (July 2020) is seeking to better prepare us for 2°C warming in global temperatures as well as planning for higher scenarios, such as a 4°C rise in global temperatures. The ExA accepts that the Applicant has considered a 2°C rise in temperature for the Proposed Development, what implications would a 4°C rise have?	The Applicant considers implications of increased global temperatures would principally be associated with the Norfolk Boreas project at the landfall (coastal erosion risk management) and operational drainage at the onshore project substation (flooding). With regard to the landfall, the Applicant refers to its response to Q3.16.0.1 of the Applicant's responses to the Examining Authority's Third Round of Written Questions [REP7-016] which outlines that a significant level of flexibility is included in the 'set back' distance to which the Transition Joint Bays can be sited from the cliff-line. This is a minimum of 125m with flexibility to set back up to 325m, sufficient to accommodate not only the most up to date information and forecasts of coastal erosion (currently predicted to be between 50m and 110m by 2065) but also beyond.





			With regard to operational drainage at the onshore project substation, the Applicant refers to its response to WQ3.15.0.8 of the Applicant's responses to the Examining Authority's Third Round of Written Questions [REP7-016]. The outline drainage assumptions included an allowance of 40% for climate change; this was included as contingency to demonstrate proof of concept for design check purposes. The requirement to include a 20% climate change allowance within the Outline Operational Drainage Plan was agreed with Norfolk County Council Lead Flood Authority. The 20% climate change is not a relaxation but is the correct level of climate allowance which is required in line with the Environment Agency's Climate Change Allowance Guidance. Therefore, there is flexibility in the sizing and volume of the attenuation pond to limit outfall rates.
			In summary, the assessments undertaken by the Applicant demonstrate that should it be necessary to plan for a higher scenario such as a 4°C rise in global temperatures during detailed design, this could be accommodated within the design flexibility already contained within the application
R17.1.31	Applicant	In support of the 'zero net carbon' Climate Change Act 2008 (2050 Target Amended) Order 2019 Act made on 26 June 2019, the Applicant to provide a carbon footprint for the Proposed Development, separately providing carbon assessments for onshore and offshore facilities.	Notwithstanding paragraph 5.2.2 of EN-1 which states "The [decision-maker] does not, therefore need to assess individual applications in terms of carbon emissions against carbon budgets", and the application of this post 'net zero' in the SoS's decision letter dated 4 October 2019 on the Drax repowering scheme (EN010091), the Applicant has commissioned a carbon footprint assessment for the Norfolk Boreas project in response to this request and will endeavour to submit this at Deadline 14. EN-3 also recognises, at paragraph 1.1, that "Electricity generation from renewable sources of energy is an important element in the Government's development of a low-carbon economy" and at bullet two of paragraph 1.7.2 that "Through supporting the transition to a low carbon economy, EN-3 is considered likely to have positive effects on the climate change objective in the medium and long term". In the SoS's decision on Norfolk Vanguard, the SoS concludes that (paragraph 11.2) "The Secretary of State does not consider that the amendment to the Climate Change Act 2008 has lessened the need for renewable energy generation and that the Development is, therefore, still in accordance with the NPSs in that respect." The SoS also states (paragraph 4.4) that the Norfolk Vanguard project "benefits from the presumption in favour of electricity generating stations in general and in





favour of offshore wind farm generating stations in particular. In addition, granting development consent for the Development would be consistent with government policy and will contribute to the delivery of low-carbon and renewable energy, ensuring a secure, diverse and affordable energy supply in line with legal commitments to "net zero" and the need to address climate change". Noting this, but particularly given that the full extent of the supply chain is not yet known, the assessment to be submitted at Deadline 14 will be necessarily high level.



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