



Norfolk Vanguard Offshore Wind Farm

Evaluation of the Implications of the Proposals for Closed Areas to Fishing for the Commercial Fisheries Cumulative Impact Assessment

Applicant: Norfolk Vanguard Limited

Document Reference: ExA; ISH6; 10.D7.14

Deadline 7

Date: 02 May 2019

Photo: Kentish Flats Offshore Wind Farm





Table of Contents

Executiv	ive Summary	3
1	Evaluation of the Implications of proposals for closed areas to Fishing commercial fisheries cumulative impact assessment	-
1.1	Introduction	5
1.2	Status of the Current Proposals for Closed Areas to Fishing	5
1.3	Assessment of Cumulative Impacts	9





Glossary

CFP	Common Fisheries Policy
DEFRA	Department for Environment, Food and Rural Affairs
IFCA	Inshore Fisheries and Conservation Authority
JNCC	Joint Nature Conservation Committee
MPA	Marine Protected Area
MSFD	Marine Strategy Framework Directive
NFFO	National Federation of Fishermen's Organisation
NV East	Norfolk Vanguard East
NV West	Norfolk Vanguard West
OWF	Offshore Wind Farm
SAC	Special Areas of Conservation
SoCG	Statement of Common Ground
VisNED	National Association of Producer Organisations in Dutch Demersal Fisheries
VMS	Vessel Monitoring System

Terminology

NV East	Norfolk Vanguard comprises two distinct areas, Norfolk Vanguard West (NV West) and Norfolk Vanguard East (NV East) ("the Offshore Wind Farm (OWF) sites")
NV West	Norfolk Vanguard comprises two distinct areas, Norfolk Vanguard West (NV West) and Norfolk Vanguard East (NV East) ("the Offshore Wind Farm (OWF) sites")
Offshore project area	The overall area of Norfolk Vanguard East, Norfolk Vanguard West and the offshore cable corridor.
The Applicant	Norfolk Vanguard Limited
The Offshore Wind Farm (OWF) sites	The two distinct offshore wind farm areas, Norfolk Vanguard East and Norfolk Vanguard West.
The project	Norfolk Vanguard Offshore Wind Farm, including the onshore and offshore infrastructure.
Offshore cable corridor	The area where the offshore export cables would be located.
Vessel Monitoring System	A satellite-based monitoring system which at regular intervals provides data to fisheries authorities on the location, course and speed of fishing vessels.





EXECUTIVE SUMMARY

- 1. This document evaluates the potential implications of proposals for closed areas to fishing in UK, German and Dutch waters with regards to the cumulative impact of loss of grounds and associated displacement as a result of the Norfolk Vanguard Offshore Wind Farm presented in Chapter 14 Commercial Fisheries of the Environmental Statement (ES).
- 2. The updated cumulative assessment presented in this document takes account of detailed information on current proposals for closed areas provided by the National Federation of Fishermen's Organisations (NFFO) and the National Association of Producer Organisations in Dutch Demersal Fisheries (VisNED) provided to the Applicant during the examination phase. In addition, in line with the assessment presented in Chapter 14, it considers other relevant offshore wind farm projects and aggregate dredging activity.
- 3. As a worst case scenario, the assessment assumes that all the proposals for closed areas will be approved and implemented and that their final boundary will remain as currently proposed. In this context it is important to note that some of the proposals for closed areas in UK waters are still subject to agreement with other Member States, and may be subject to further amendment. They will only become final once they are submitted to the European Commission and ratified following scrutiny.
- 4. The focus of the updated assessment is on fleets of concern to NFFO and VisNED in respect of cumulative impacts. As outlined in the Statement of Common Ground (SoCG) (Rep2 SOCG 26.1) these include:
 - Beam trawling (Dutch and Anglo-Dutch vessels);
 - Dutch seine netting; and
 - UK local inshore fisheries.
- 5. The updated assessment of the cumulative impact of loss of grounds and associated displacement has identified potential for cumulative impacts of **moderate adverse** significance on Dutch beam trawlers and seine netters and on Anglo-Dutch beam trawlers. For these fleets, impact significance is higher than that identified in Chapter 14 Commercial Fisheries (minor adverse). This is a result of the increase in impact magnitude (from medium to high) arising from increased loss of fishing grounds as a result of proposals for closed areas . Note that in all cases the contribution of the Project to the overall cumulative impact is considered to be small, with the conclusion of impact significance (moderate adverse) applying regardless of whether or not the Project is considered in the assessment.





6. With regards to cumulative impacts in respect of loss of grounds and displacement on the UK local inshore fleet, the conclusion of the updated assessment remains as identified in Chapter 14 Commercial Fisheries (minor adverse).





1 EVALUATION OF THE IMPLICATIONS OF PROPOSALS FOR CLOSED AREAS TO FISHING FOR THE COMMERCIAL FISHERIES CUMULATIVE IMPACT ASSESSMENT

1.1 Introduction

- 7. The NFFO and VisNED have expressed concerns during the Norfolk Vanguard examination with regards to the cumulative impact of loss of grounds and displacement associated with various proposals for closed areas to demersal fishing in UK, Dutch and German waters. NFFO and VisNED consider that these proposals are currently sufficiently progressed that they should be taken into account in further detail in the cumulative assessment for the Project. The cumulative assessment presented in Chapter 14 took account of the fact that closed areas to commercial fishing could be implemented in Marine Protected Areas (MPAs). However, a detailed assessment, considering the boundaries of specific proposals was not possible at that time given the draft status of the proposals and the lack of published information on detailed timeframes for their finalisation, approval and implementation.
- 8. In order to address the concerns raised by NFFO and VisNED, an updated cumulative assessment has been undertaken taking account of the proposals for closed areas as identified by NFFO and VisNED.
- 9. The focus of the assessment is on fishing methods and fleets of concern to NFFO and VisNED in respect of cumulative impacts. As outlined in the SoCG (Rep2 –SOCG 26.1) these include:
 - Beam trawling (Dutch and Anglo-Dutch vessels);
 - Dutch seine netting; and
 - UK local inshore fisheries.

1.2 Status of the Current Proposals for Closed Areas to Fishing

- 10. From consultation undertaken with NFFO/VisNED during the examination phase as part of the development of the SoCG, it is understood that proposals for closed areas to fishing within the following Marine Protected Areas (MPAs) are of key concern to NFFO/VisNED:
 - Dogger Bank Special Area of Conservation (SAC) (UK, Dutch and German sites);
 - Inner Dowsing, Race Bank and North Ridge SAC (UK);
 - North Norfolk Sandbanks and Saturn Reef SAC (UK);
 - Haisborough, Hammond and Winterton SAC (UK);
 - Sylt Outer Reef SAC (Germany);
 - Borkum Reef Ground SAC (Germany); and
 - Cleaver Bank SAC (The Netherlands).





- 11. In addition, NFFO and VisNed have expressed concern in relation to additional proposals for closures in Dutch waters under the Marine Strategy Framework Directive (MSFD).
- 12. The location of the proposals for closed areas listed above is illustrated in Figure 1¹. Information on the current status of the proposals is provided in section 1.2.1.
- 13. It should be noted that current proposals for closed areas in the Haisborough, Hammond and Winterton SAC include areas within 6nm under the Eastern Inshore Fisheries and Conservation Committee's (IFCA) proposed byelaws, as well as areas further offshore (beyond the 6 nm limit). The latter are being proposed as a Department for Environment, Food and Rural Affairs (DEFRA) management area under the Common Fisheries Policy.

Norfolk Vanguard Offshore Wind Farm

¹ Note that in the case of closed areas to towed gear under the Eastern IFCA proposed byelaws, the boundaries provided in Figure 1 depict areas of management interest but not final closures at this stage.







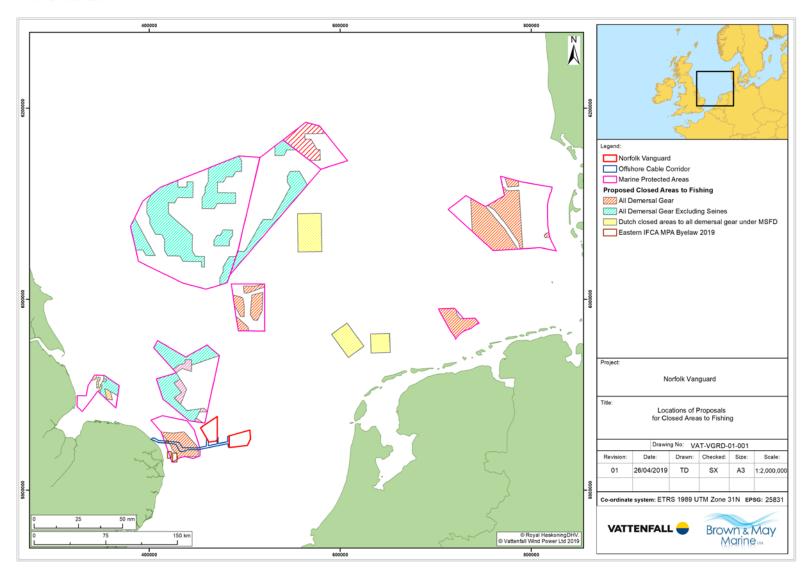


Figure 1 Location of Proposals for Closed Areas to Fishing





1.2.1 Proposals for closures in UK waters

1.2.1.1 Proposals in Offshore Waters

- 14. From consultation undertaken with the Department for Environment, Food and Rural Affairs (DEFRA) and the Joint Nature Conservation Committee (JNCC), it is understood that at present, for MPAs (or components of the MPAs) located in the UK offshore region, management negotiations with regards to proposals for closed areas are being undertaken under the process set out in the Common Fisheries Policy (CFP). This means that UK management measures for MPAs must be agreed by other Member States with an active interest in the management of the sites before they can be implemented.
- 15. On the basis of the information currently available, it is understood that other Member States have not yet consented to the UK's proposals for closed areas to fishing in MPAs in UK waters and that this has prevented the UK from submitting the proposals to the European Commission. The proposal for closed areas in the Dogger Bank SAC (which includes proposals within the UK, Dutch and German sites) is the sole exception to this. In this case, the proposal has been agreed by all interested Member States and it is anticipated that it will be submitted to the European Commission in the near future (DEFRA, pers. comm., 10.04.2019).
- 16. It should be noted that the current boundaries of proposals for closed areas in offshore UK waters are still open to amendment and that proposed management measures only become final once they are submitted to the European Commission and ratified following scrutiny. Until this process is complete, all proposed management boundaries for closed areas are considered "Draft" and could be subject to further change (JNCC, pers. comm., 05.04.2019).

1.2.1.2 Proposals in Inshore Waters

17. With regards to the proposals for closed areas to towed gear in the inshore area of the Haisborough, Hammond and Winterton SAC under the Eastern IFCA proposed byelaw, as outlined in the Eastern IFCA's submission at Deadline 6, it is understood that the proposal for closed areas to towed gear will be presented to Eastern IFCA members in the near future (planned for 15th May 2019). If a decision is made to progress the byelaw, a formal consultation process will follow (to last approx. 28 days). After this, the byelaw will be submitted to the Marine Management Organisation (MMO) and DEFRA for scrutiny and ultimate sign off (est. six to nine months).

1.2.2 Proposals for Closures in Dutch and German waters

18. From information provided by NFFO/VisNED, and outlined under their position in the SoCG submitted at Deadline 5 (Rep2- SOCG – 26.1), it is understood that the proposals





for closures in German waters were due to be submitted by the German Government to the European Commission on 1st February 2019 and that these are expected to be implemented in the forthcoming months (following the three month period that the European Commission has to adopt a delegated act). The closures proposed in Dutch waters are at a similar stage to those in German waters and are expected to come into force in December 2019.

1.3 Assessment of Cumulative Impacts

- 19. In line with the assessment presented in Chapter 14 Commercial Fisheries, consideration has been given in this updated assessment to other offshore wind farm projects, aggregate dredging areas and to the potential implementation of closed areas to fishing in MPAs.
- 20. It should be noted that the list of offshore wind farms and aggregated dredging areas included in the assessment has been updated in respect of that presented in Chapter 14 Commercial Fisheries to reflect their status at the time of writing. These are shown in Table 1.1 and Table 1.2 and illustrated in Figure 2.
- 21. With regards to proposals for closed areas, specific consideration has been given in the assessment to proposals identified by NFFO and VisNED (see section 1.2), including details on their location, extent and fishing gear that they apply to (Figure 1 and Figure 2).
- 22. For the purposes of this assessment, a precautionary approach has been taken and it has been assumed that all the current proposals for closed areas will be approved and implemented and that their final boundary will remain as illustrated in Figure 1 and Figure 2.

Table 1.1 Offshore wind farm projects included in the cumulative assessment

Offshore Wind Farm	Size (MW)	Maximum number of turbines
Norfolk Vanguard	1,800	180
Wind Farms under Construction		
UK Wind Farms		
Beatrice	588	84
East Anglia One	714	102
Hornsea Project One	1,200	174
Hornsea Project Two	1,386	174
Belgium Wind Farms		·
Rentel	309	42
Danish Wind Farms	1	,
Horns Rev	407	49
German Wind Farms	1	1
OWP (Demonstrations projekt) Albatros I	112	16





203 497 450 396	Maximum number of turbines 32 71 56 66
497 450	32 71 56
497 450	71 56
450	56
450	56
396	66
1,200	172
1,200	200
1,200	200
1,200	200
1,200	200
860	90
784	110
	140-150
•	54
	7
	100
	10
36.4	10
740	02
-	93
	94
	2
700	58-126
	44
252	42
288	48
309	42
450	75
498	83
496	62
344	41
252	30
16.8	2
240	16-18
110	8
336	42
270	45
240	16-18
	1,200 1,200 1,200 1,200 1,200 860 784 1,500 448 50 950 58.4 740 725 20 700 370 252 288 309 450 498 496 344





Offshore Wind Farm	Size (MW)	Maximum number of turbines
EnBW He Dreiht	900	90
Application submitted and not yet determined		
UK Wind Farms		
Hornsea Project Three	2,400	342
Thanet Extension	340	34
Moray West	750	90
French Wind Farms		
Parc Eolien en mer de Dieppe – Le Treport	496	62
In Planning, Application not yet submitted		
UK Wind Farms		
East Anglia North	600-800	67
East Anglia Two	400-900	75
Norfolk Boreas	1,800	180
Identified in strategic plans but not yet in planning		
UK Wind Farms		
Greater Gabbard Extension	504	TBC
Galloper Extension	353	TBC
Sheringham Shoal Extension	317	TBC
Race Bank Extension	573	TBC
Dudgeon Extension	402	TBC
Rampion Extension	400	TBC
Dutch Wind Farms		
Holland Kust Zuid Holland III & IV (Tender 2018)	700	58-126
Hollandse Kust Noord Holland I & II (Tender 2019)	700	58-126
Belgian Wind Farms		
Poseidon P60 - Mermaid	2-2.3	1
Danish Wind Farms		•
Horns rev Reserved Area	TBC	TBC
Ringkobing Reserved Area	TBC	TBC

Table 1.2 Aggregate Dredging Areas (Exploration and Option Areas)

Area name	Area number	
West Wight	522	
New 495	525	
Thames D	524	
Colbart	530	
EEC 1	529	
Outer OTE	528/2	







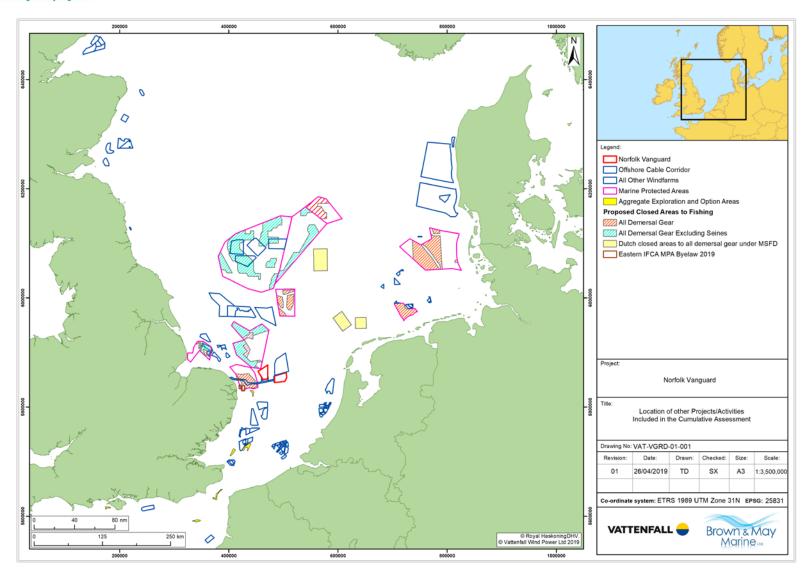


Figure 2 Location of other projects, activities and measures included in the cumulative assessment





1.3.1 Beam Trawling

1.3.1.1 Dutch Registered Beam Trawlers

- 23. Fishing activity by Dutch registered beam trawlers occurs at relatively high levels across a wide section of the southern North Sea, including the offshore project area (beyond the 12nm limit) (Figure 3 and Figure 4).
- 24. The operational phase of other offshore wind farm projects, particularly in the case of projects located in areas that sustain high levels of beam trawling activity will add to loss of grounds/displacement on this fleet. This will be of greater relevance in the case of offshore wind farm projects off the Dutch and Belgian coast, as fishing within operational wind farms is not permitted in these countries. Another important contribution to the overall cumulative impact would come from potential restrictions on towed gear fishing implemented in MPAs. As shown in Figure 3 and Figure 4, current proposals for closed areas cover considerable areas and sections of these overlap with grounds targeted by Dutch registered beam trawlers.
- 25. The overlap of the construction/decommissioning phase of the project with the construction/decommissioning works in other offshore wind farms and/or with aggregate dredging activity in the southern North Sea, would also add to potential cumulative impacts. However, impacts associated with these activities would be temporary and therefore would contribute to cumulative impacts to a lesser extent than operational projects and closed areas to fishing.
- 26. Considering the potential increased area from which fishing by Dutch registered beam trawlers could be excluded when taking account of other projects/activities/measures, particularly the implementation of closed areas to fishing and the prohibition to fishing in operational wind farms in some countries, the magnitude of the impact is considered to be high. Note that in the assessment provided in Chapter 14, where detailed information on the location of proposals for closed areas was not included, impact magnitude was considered to be medium.
- 27. As discussed in Chapter 14 Commercial Fisheries, the sensitivity of Dutch beam trawlers to loss of fishing grounds/displacement is low. This combined with the high magnitude of impact identified above, results in an impact of **moderate adverse** significance. This was considered minor adverse in Chapter 14 Commercial Fisheries as impact magnitude was identified as medium.
- 28. It should be noted that the contribution of Norfolk Vanguard to the overall cumulative impact would be small with the conclusions of the assessment presented above remaining the same (moderate adverse), regardless of whether or not Norfolk Vanguard is considered in the assessment (Figure 3 and Figure 4).





- 29. In the context of this assessment it is also important to note the removal of floating foundations and of the 9MW turbine option from the Project Design Envelope and the associated increase in minimum spacing (from 680m to 760m) which address concerns raised by NFFO/ViNED during the examination in relation to turbine spacing within the offshore sites. As a result of these changes, it is anticipated that some level of activity by beam trawlers would be able to resume within the operational Offshore Wind Farm (OWF) sites. Note that the assessment presented in Chapter 14 Commercial Fisheries considered that skippers would elect not to fish within the OWF sites. This took account of NFFO/VisNED's concern with regards to fishing within the OWF sites under a worst case scenario which included the use of floating foundations combined with a minimum spacing of 680m (for the 9MW turbine option).
- 30. As noted, the assessment above assumes that all the current proposals for closed areas will be approved and implemented and that their final boundary will remain as illustrated in Figure 1 and Figure 2. However, some of the proposals for closed areas in UK waters are still subject to amendment as proposed management measures only become final once they are submitted to the European Commission and ratified following scrutiny. The precautionary nature of the assessment should be noted in this context.





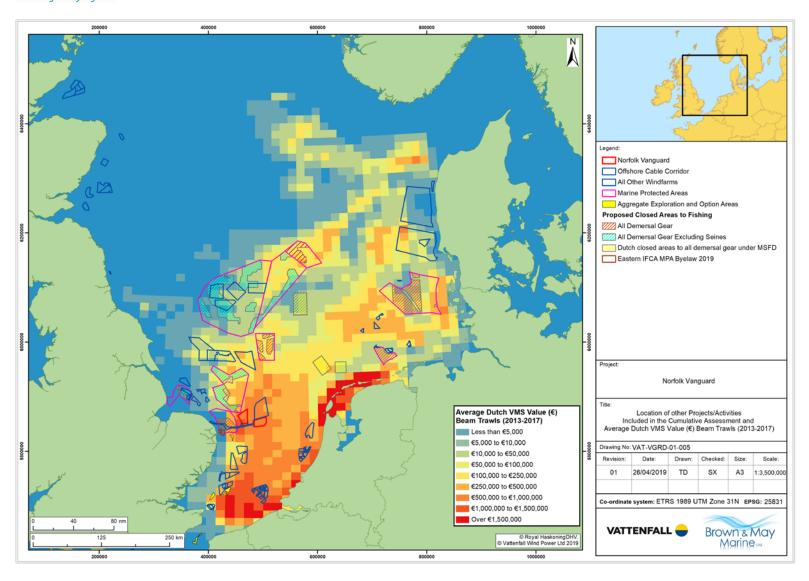


Figure 3 Dutch Beam Trawling VMS value (Euros) (Annual average 2013 -2017)



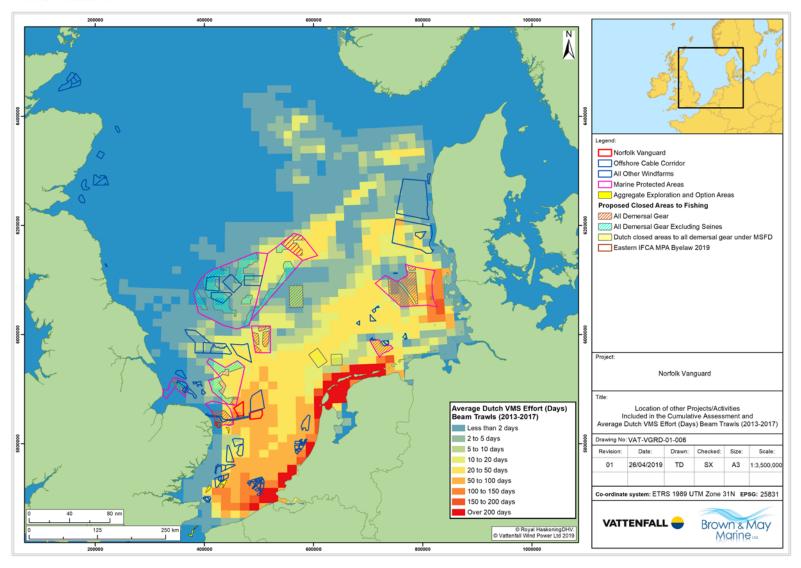


Figure 4 Dutch Beam Trawling VMS Effort (Days) (Annual average 2013 -2017)





1.3.1.2 Anglo-Dutch Beam Trawlers

- 31. Analysis of Vessel Monitoring System (VMS) data (Figure 5 and Figure 6) for UK registered but Dutch owned and operated beam trawlers (Anglo-Dutch vessels) suggests that the offshore project area supports low to medium levels of fishing with patches of activity extending throughout the southern North Sea and highest fishing intensity being reported in the Central North Sea.
- 32. The overlap of construction/decommissioning activities associated with the project and other offshore wind farms or aggregate dredging activity, particularly in the Central North Sea, where activity by these vessels is highest, would temporarily contribute to cumulative impacts on this fleet (Figure 5 and Figure 6). However, it would be the implementation of closed areas to demersal gear, being long term, that would result in the greatest contribution to cumulative impacts.
- 33. Fishing activity by Anglo-Dutch beam trawlers off the Dutch and Belgian coasts is limited. Therefore, impacts from wind farms which may become operational in these countries, where access to fishing is prohibited, would have little potential to contribute to cumulative impacts. In the case of operational wind farms in UK waters, given that access for fishing is permitted it would be expected that fishing activity would resume to some extent in these projects during the operational phase.
- 34. Considering the increased area from where fishing may be excluded at a given time, particularly when taking account of the extent of the proposals for closed areas to fishing, the magnitude of the cumulative effect is assessed to be high. Note that in the assessment provided in Chapter 14, where detailed information on the location of proposals for closed areas was not included, impact magnitude was considered to be medium.
- 35. As discussed in Chapter 14 Commercial Fisheries, the sensitivity of Anglo-Dutch beam trawlers to loss of fishing grounds/displacement is low. This combined with the high magnitude of impact identified above results in an impact of **moderate adverse** significance. This was considered of minor adverse significance in Chapter 14 Commercial Fisheries as impact magnitude was identified as medium.
- 36. It should be noted that the contribution of Norfolk Vanguard to the overall cumulative impact would be small, with the conclusions of the assessment presented above (impact of moderate adverse significance) remaining the same, regardless of whether or not Norfolk Vanguard is considered in the assessment (Figure 5 and Figure 6).
- 37. In the context of this assessment, as outlined above in respect of Anglo-Dutch beam trawlers, it is important to note that with the removal of floating foundations and of the 9MW turbine option from the Project Design Envelope and the associated increase in





minimum spacing (from 680m to 760m), it is anticipated that some level of activity would be able to resume within the operational OWF sites.

38. As previously mentioned, the assessment above assumes that all the current proposals for closed areas will be approved and implemented and that their final boundary will remain as illustrated in Figure 1 and Figure 2. However, some of the proposals for closed areas in UK waters are still subject to agreement by Member States, and therefore subject to amendment. The proposed management measures will only become final once they are submitted to the European Commission and ratified following scrutiny. The precautionary nature of the assessment should be noted in this context.



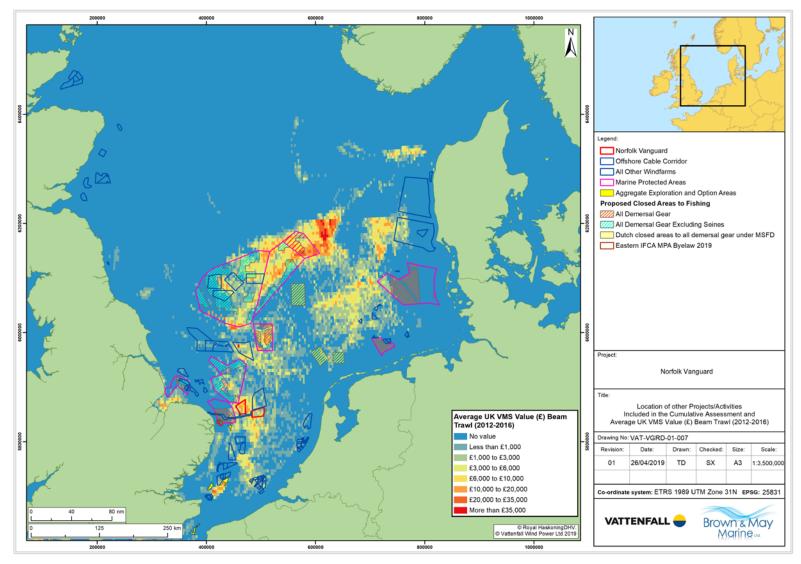


Figure 5 UK Beam Trawling VMS Value (£) (annual average 2012 -2016)





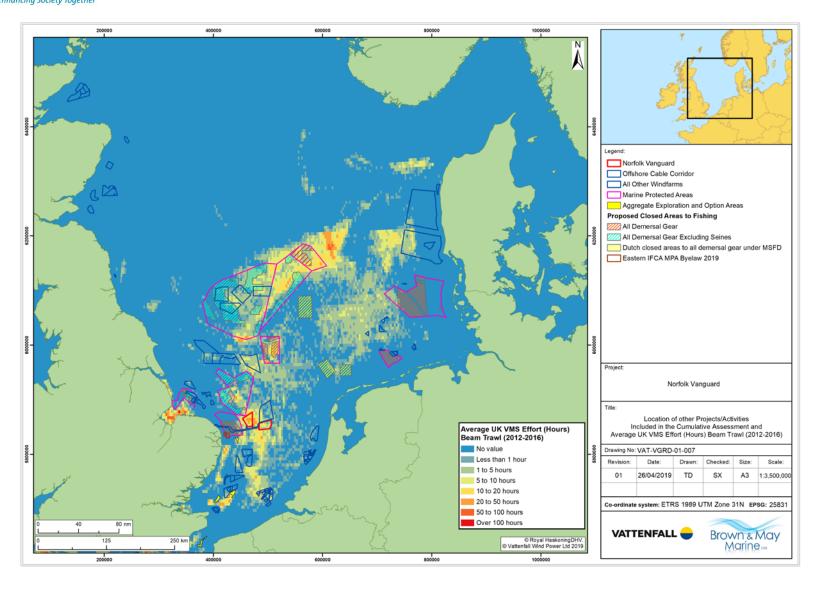


Figure 6 UK Beam Trawling VMS Effort (hours) (Annual Average 2012-2016)





1.3.2 Dutch Seine Netters

- 39. Analysis of VMS data indicates that Dutch seine netting occurs at low levels in the OWF sites, with comparatively higher effort and values recorded in other areas, particularly in the English Channel, where the majority of activity concentrates. As shown in Figure 7 and Figure 8, there is little overlap between seine netting grounds in the Channel and other projects/activities that could result in cumulative impacts. However, in a North Sea context, particularly when taking account of offshore wind farm developments and the extent of the proposals for closed areas in Dutch and German waters, the level of overlap with fishing grounds used by this method is higher. It should be noted, that as a worst case scenario, it is considered this method will not be able to resume within operational wind farms given the dimensions of the fishing gear used (Figure 7 and Figure 8). With this in mind, and assuming that grounds in the North Sea may be of importance to some vessels at times, the magnitude of the impact is assessed to be high. Note that in the assessment provided in Chapter 14, where detailed information on the location of proposals for closed areas was not included, impact magnitude was considered to be medium.
- 40. As discussed in Chapter 14 Commercial Fisheries, the sensitivity of Dutch seine netting to loss of fishing grounds/displacement is considered to be low. This combined with the high impact magnitude identified above, results in a cumulative impact of **moderate** adverse significance. This was considered to be of minor adverse significance in Chapter 14 Commercial Fisheries as impact magnitude was identified as medium.
- 41. It should be noted that the offshore project area supports seine netting activity at very low levels (Figure 7 and Figure 8). The contribution of the project to the overall cumulative impact on this fleet would be very small, with the conclusions of the assessment presented above remaining the same (moderate adverse), regardless of whether or not the Norfolk Vanguard project was considered in the assessment.







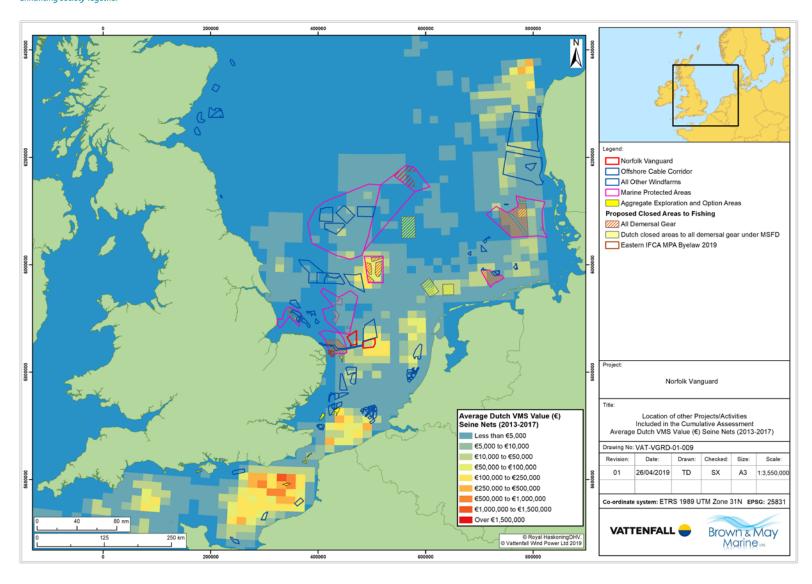


Figure 7 Dutch Seine Netting VMS Value (Euros) (annual average 2013-2017)







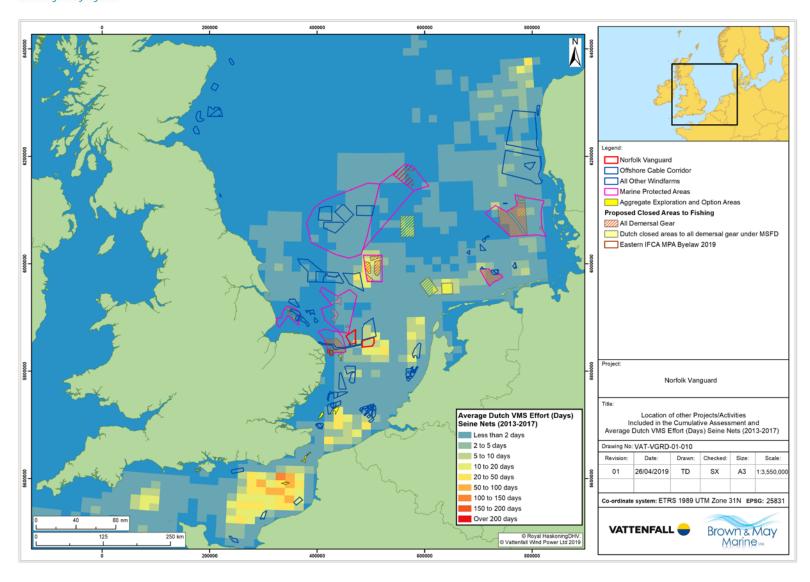


Figure 8 Dutch Seine Netting VMS Effort (Days) (annual average 2013-2017)





1.3.3 UK Local Inshore Fleet

- 42. As identified in Chapter 14 Commercial Fisheries, the principal fishing methods used by the local inshore fleet are potting, long lining and netting. It should be noted that the use of these methods would be permitted in the proposed closed areas, as current restrictions only apply to demersal towed gear.
- 43. With this in mind, it is not considered that the proposals for closed areas included in this assessment have potential to contribute to cumulative impacts with regards to loss of grounds on this fleet. Therefore, the assessment presented in Chapter 14 Commercial Fisheries, which concluded an impact of **minor adverse** significance, still applies.
- 44. With regards to potential impacts associated with displacement on the local fleet, the Applicant acknowledges the concerns raised by NFFO/VisNED in the SoCG (Rep2 SOCG -26.1). The Applicant notes, however, that the evidence gathered to inform the baseline characterisation for the Project indicates that activity by the local fleet occurs predominantly in inshore areas within the 12nm limit and primarily within the 6nm limit. Whilst some local vessels, particularly long liners and to a lesser extent netters, are known to venture to areas further offshore, activity by these vessels in offshore areas relevant to the project only takes place on a seasonal basis and when weather conditions allow. By virtue of their main engine power and gear sizes Dutch and Anglo Dutch beam trawlers are not permitted to fish within the UK's 12nm limit. As such, there is limited potential for conflicts of relevance to occur between local vessels and larger Dutch and Anglo-Dutch vessels as a result of cumulative impacts associated with displacement. Therefore the conclusion of minor adverse significance with regards to the cumulative impact of displacement on the local fleet, identified in Chapter 14 Commercial Fisheries, is considered to still apply.