Galloper Wind Farm Project

Environmental Statement – Chapter 31: Transboundary Effects

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Galloper Wind Farm Limited

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28 TRANSBOUNDARY EFFECTS

28.1 Statement on Potential Transboundary Effects

28.1.1 The need to consider the potential for transboundary effects was highlighted in the Scoping Opinion provided by the Infrastructure Planning Commission (IPC) in August 2010 (IPC, 2010). This has been adopted throughout the preceding technical Chapters of the Environmental Statement (ES) where summary statements on the likelihood of significant transboundary effects arising from the Galloper Wind Farm (GWF) development have been provided.

28.1.2 Subsequent to the Scoping Opinion, the IPC published advice in June 2011 relating to the screening of likely transboundary effects for Nationally Significant Infrastructure Projects (NSIP) projects. IPC advice note 12 suggests the use of a 'screening matrix' by applicants as a way of indicating to the IPC, prior to application and normally at the time of scoping, the likelihood of significant transboundary effects so that the IPC can decide on the need for consultation with potentially affected European Economic Area (EEA) member states.

28.1.3 Given the timing of the publication of Advice Note 12 in relation to the GWF application, it was felt to be too late to complete this 'screening' process prior to application. However, the following sections set out a summary of the key potential transboundary issues for GWF drawn from the main assessment and for each of the Environmental Impact Assessment (EIA) topics considered. This has not specifically followed the 'screening matrix' format suggested in Advice Note 12 since this form is considered to be superseded by the very detailed EIA now complete for GWF and set out in the preceding chapters of this ES. A summary of consultation relevant to the issue of potential transboundary effects is also provided.

28.2 Summary of Likely Significant Transboundary Effects

28.2.1 The following sections present a summary of the potential transboundary effects on the environment of other EEA member states. The summary table considers transboundary effects in relation to the following types of effect:

- Impacts that might occur on the environment within other EEA member states (i.e. not within the UK Renewable Energy Zone (REZ)); and
- Impacts that might occur on interests of another EEA member state within the UK REZ.

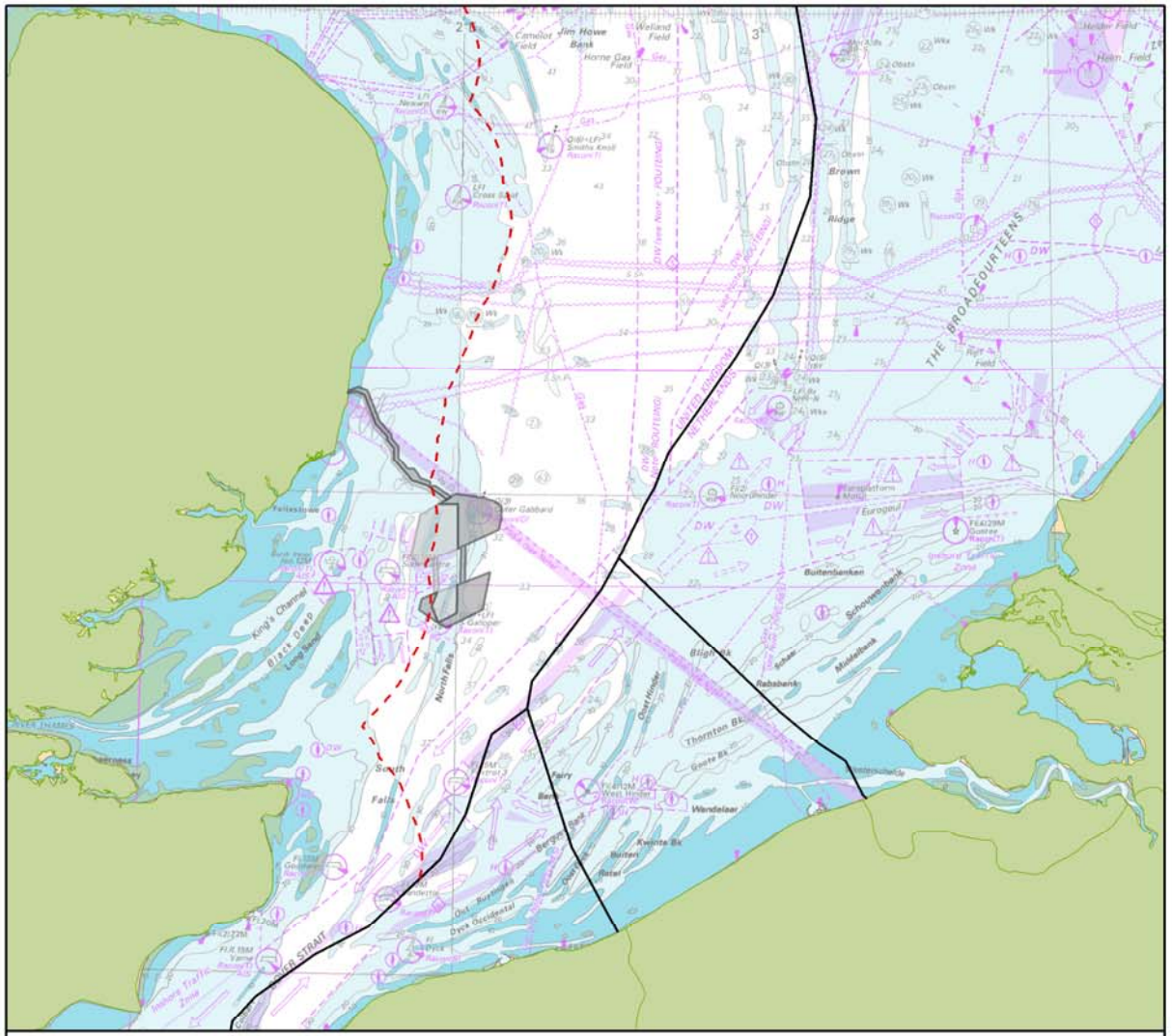
28.2.2 For ease of reference, the approximate distance of the nearest part of the boundary of the GWF area to the closest part of the Exclusive Economic Zone (EEZ) of each of the most adjacent member states is summarised in **Table**

31.1. The position of the GWF relative to the EEZ boundaries is shown in **Figure 31.1.**

Table 31,1 Summary of approximate distance to nearest EEA Member States EEZ

EEZ	Distance of GWF to nearest boundary (km)
Dutch Exclusive Economic Zone	28
French Exclusive Economic Zone	25
Belgian Exclusive Economic Zone	19

28.2.3 In relation to the potential impacts that might arise from the construction, operation or decommissioning of the proposed GWF project, a detailed description of the predicted spatial and temporal scale of each has been described in technical **Chapters 8 to 28** and a description of the significance has been set out in each case. The EIA has been used as the basis for the following summary of effects and in setting out the summary arguments reached in relation to the conclusions relation to potential transboundary issues.



28.3 Transboundary Consultation

28.3.1 Galloper Wind Farm Limited (GWFL) has completed extensive consultation as part of the EIA process and in satisfying the pre-application requirements of the Planning Act 2008. **Table 31.2** summarises those bodies from other EEA member states consulted prior to application. Direct consultation with Government departments in other EEA member states has not been conducted but rather the consultation has focused on specific 'user groups' known to have some interest in the GWF area based on available data, surveys and the expert knowledge of the project team. It was considered that this approach was appropriate in undertaking the EIA and providing a well-founded judgement of likely transboundary effects. The consultation was therefore focused on those sectors known to have some level of interest in the GWF area or likely to be affected by the project.

28.3.2 For example, in the case of non-UK commercial fishing vessels, those with a possible interest in the GWF were identified by reference to official fisheries landings and surveillance data as well as the expert judgement and experience of the fisheries consultant (DanBrit Ship Management Ltd). For shipping, those operators known to have regular routes passing through or close the GWF have been consulted, having been identified on the basis of site specific traffic surveys and consultation with regional ports. The identity and location of active cables and the owners / operators of those cables are known from data bases held, for example, by The Crown Estate. Further detail on the consultation completed with non-UK interests and responses received is set out in the **Consultation Report**.

Table 31.2 Summary of non-UK Consultees

Consultee
Commercial Fishing
Netherlands Fish Producer Organisations: Ziud West - Goedereede Delta Zuid - AC Yerseke Redersverenniging - Rijswijk Ons Beland - Harlingen DETV - Texel St Paulus - Volendam Hulp de Nood - AE Lekkum PO Oost – Urk

Dutch Fisheries Organisation – Cora Seip
Belgium Fish Producer Organisations: Rederscentrale - Oostende Gemeentetelijke Visveiling – Nieuwport Zeebrugse Visveiling – Zeebrugge Luk Louwagie – Belgium Fisherman
French National Fishing Associations National Association of Producers' Organizations (ANOP) FEDOPA (Fédération des Organisations de Producteurs de la Pêche Artisanale) OPOB (Pécheurs Bretons S A) PROMA (Pecheurs de Manche Eet D'Atlantique) FROM NORD (L'Organisation de producteurs Coopérative de Bretagne Nord)
Shipping Operators
DFDS Seaways (Norfolkline)
Stena Line Ferries
Eitzen Gas AS
Arklow Shipping Ltd
Wilson Euro Carriers AS
Oldenburg-Portugiesische
Cable Operators
BT Farland
Interoute
Global Crossing

28.3.3 During the statutory Section 42 pre-application consultation, UK statutory bodies advising on shipping and navigation did not raise any issues specifically relevant to transboundary issues. Similarly, the Marine Management Organisation (MMO) did not raise any issues relating to effects on non-UK fishing fleets. Only the Joint Nature Conservation Committee (JNCC) mentioned transboundary in their Section 42 response, requesting that an assessment of transboundary effects be included.

28.3.4 Note that consultation with the cable operators is relevant here, not because the operators themselves are companies resident in other EEA states but because they provide telecoms connections between other member states and the UK or other destinations.

28.3.5 **Table 31.3** provides detail on the likely potential significant effects arising from the proposed GWF project and an assessment of the potential significance of these effects.

Table 31.3 Summary of likely significant transboundary effects arising from all phases of the proposed GWF Project

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
Nature Conservation Designations (Chapter 8)	The assessment of effects on features of nature conservation interest has concluded that there will be no significant effects on sites of international importance (SAC, SPA or Ramsar), nor on OSPAR listed habitats or species. This includes site specific and cumulative effects.	Given the lack of significant effects on sites of international importance, including Natura 2000 sites, it is concluded that there can be no significant transboundary effect on the wider European Natura 2000 network. Similarly the OSPAR listed habitats and species will not be subject to significant effects.
Physical Environment (Chapter 9)	Effects on waves and tides are limited to within or adjacent to the GWF with far field effects being limited and of very small magnitude. No far field effects on sediment transport of seabed morphology will occur. Sediment plumes from construction rapidly disperse to background within a few kilometres. Scour of the seabed is limited to the immediate vicinity of the wind farm structures. No significant cumulative effects will occur given the spatial separation between GWF and other wind farms and the small magnitude of change arising from other activities.	Given the small magnitude of change and the limited spatial footprint of those changes, no direct or indirect or cumulative, significant transboundary effects can occur as a result of changes to the physical environment
Marine Water and Sediment Quality (Chapter 10)	Changes to turbidity arising from construction will reduce quickly with distance from the source with no long term effects. Sediment contaminants are at a low level and as a result any disturbance of the seabed would not give rise to significant effects. Accidental spillages, were they to occur, could lead to a deterioration in water quality; mitigation is set out in respect of a pollution control plan and environmental management plan so that no such impact would occur. No significant cumulative effects will occur given the temporally and spatially limited effects arising from GWF.	Given the spatially and temporally limited effects arising from the GWF project, no direct or indirect or cumulative, significant transboundary effects can occur as a result of changes in water quality.
Offshore Ornithology	The ornithological assessment has concluded that the majority of the effects of the GWF on the bird species of principal concern will be of Minor or Negligible	Given the lack of any significant effects at regional, national or international levels, it is

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
(Chapter 11)	significance, particularly when relevant mitigation measures are considered. Residual impacts on the regional breeding population of lesser black backed gull were considered to be of a Moderate-Major adverse significance, as a result of the predicted impacts of additional mortality due to collisions with the wind turbines. A non-significant impact was predicted for the Alde-Ore SPA. It was considered that the GWF site does not form an important part of the foraging range of any SPA-designated colony. The ornithology assessment concluded that when mitigation measures are implemented to minimise the risk of potentially significant effects on species' populations, there will be no significant impacts to any species at an international, national or regional scale, nor on any Natura 2000 site, caused by the GWF, either alone or in-combination with other projects or activities**.**	concluded that there can be no significant transboundary effect on the ornithological interests of any other EEA Member State nor any effect on Natura 2000 site designated for ornithological interest lying outside of the UK.
Marine and Intertidal Ecology (Chapter 12)	Impacts on the benthos within the GWF area and along the export cable route are limited to direct habitat loss or disturbance arising from placement of wind farm infrastructure, activity of construction vessels and indirect, inter-related effects arising from changes to the physical environment, sediment plumes and scour. All of these effects are predicted to be local to the GWF area and in the case of disturbance, recovery of the benthos is predicted. The biotopes affected are common in the southern North Sea context. Mitigation is offered to ensure that effects on more sensitive, high value *Sabellaria* reef biotopes do not occur. Cumulative effects are similarly limited by the small area of seabed affected and the widespread and common nature of the benthic communities affected.	Given the spatially and temporally limited effects arising from the GWF project and common and widespread nature of the biotopes affected, no direct or indirect or cumulative, significant transboundary effects can occur as a result of impacts on the benthos.
Fish and Shellfish Resource (Chapter 13)	Direct or indirect effects on seabed habitats are as described for the benthos, being limited in spatial and/or temporal scales. Noise arising from the piling of foundations will disturb fish during the piling operation and, for the most sensitive species such as herring, at ranges of 20 to 34km from source, but only 6 to 9km for the less sensitive flatfish species; such effects would be short term, temporary and reversible. No significant effect on spawning populations is predicted. Other potential effects, such as from sediment plumes, EMF or	Potential impacts would not give rise to significant transboundary effects being in most cases spatially and temporally limited and reversible in nature. Noise disturbance on the most hearing sensitive species could lead to some re-distribution of fish. For the most hearing sensitive, such as herring, noise

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
	operational turbine noise are predicted to be spatially limited and of no significance. No significant cumulative effects are predicted to occur.	impact ranges means that some disturbance could occur within the Belgian EEZ. No such disturbance would occur for less sensitive species such as flatfish. No significant effects on spawning populations will occur as a result of the noise generated by piling either in isolation or cumulatively, given the distance from key spawning areas (e.g herring) or the widespread nature of spawning (e.g. cod), together with the temporary and intermittent nature of the disturbance.
Marine Mammals (Chapter 14)	Few marine mammal species were found at the GWF site in any notable or significant densities. Harbour porpoise were the most frequently encountered marine mammal species within the GWF study area. Other species infrequently recorded included white-beaked dolphin, harbour seal and grey seal. The only significant impacts anticipated from the GWF project would be in relation to potential disturbance / displacement arising from construction pile driving activities; disturbance could occur at a range of up to circa 24km. Potential injury or lethal effects would be mitigated by application of soft start piling procedures working alongside marine mammal observers. Potential cumulative effects from other OWF in the area could occur where piling events overlapped or occurred successively but such effects would be appropriately mitigated. The marine mammal assessment concluded that, given the relatively low numbers of marine mammals encountered within and adjacent to the GWF site throughout the year and the application of best-practice mitigation, the FCS of regional, national and international marine mammal populations is unlikely to be adversely affected by the GWF development.	Piling at the GWF site may result in some disturbance to harbour porpoise within the Belgian EEZ, although any such disturbance will be short lived, temporary and fully reversible. Importantly, the GWF will not lead to any effects on populations of marine mammals at a regional, national or international scale and as such no significant transboundary effects will occur on marine mammal populations within the EEZ of other member states.

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
Commercial Fisheries (Chapter 15)	The GWF development area together with the wider southern North Sea area is exploited by non-UK vessels – predominantly beam trawlers, particularly those from the Netherlands and Belgium. The GWF area is also passaged and occasionally fished by French vessels. All of these vessels would be large nomadic vessels capable of fishing across much of the southern North sea and English Channel as their quota allows and as such the GWF makes up only a proportion of their available fishing grounds. For the Belgian and Dutch beam trawling vessels, it is assumed that there will be direct displacement of fishing from the wind farm area during all phases of the development and some more temporary restriction on those Belgian trawlers fishing across parts of the export cable route during cable installation. Indirect (inter-related) effects may also occur during foundation piling whilst fish are displaced from an area that could extend up to 9km from the noise source for the flatfish species targeted by these vessels and therefore affect catches in areas adjacent to GWF in the short term. However, given the small area of affect by comparison to the wide area exploited by these vessels, the significance of impacts on these Belgian & Dutch vessels is assessed as being negligible to minor-adverse. A similar conclusion is drawn in relation to cumulative effects on these non-UK vessels. Note that the fishing associations that represent the interests of all of the Dutch and Belgian beam trawl vessels and the French trawlers, have been directly consulted in the preparation of the GWF application.	The construction and operation of GWF will have effects at certain times of the year on a proportion of the Belgian & Dutch beam trawl fleets, particularly where complete avoidance of the wind farm area by the vessels is assumed. However, it is concluded that this will not give rise to significant transboundary effects, either in isolation or cumulatively, given the small area of exploitable sea affected by the wind farm in comparison to the very large areas of the southern North Sea exploited by these vessels. Other indirect effects arising from construction, such as noise effects on fish will affect a somewhat larger area but will be temporally limited and reversible, with no significant effects on overall fish populations. Therefore, no significant transboundary effects arise.

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
Shipping and Navigation (Chapter 16)	For commercial shipping, the GWF sits adjacent to a busy area for vessels approaching/leaving the Thames estuary and the ports of Felixstowe and Harwich or vessels routing north-south in the North Sea. The area to the west and bisecting the GWF area is controlled by the Sunk TSS. An application has been made for the TSS to be extended east to control vessels passing through the GWF. A proportion of vessels currently pass through the GWF area especially to the east (based on surveys data equating to circa 4 ships per day). Therefore, a small proportion of vessels will need to deviate their current routes once the wind farm is in place or under construction and a proportion of these may be vessels from other EEA member states. This deviation is estimated to amount, for example, to an extra 2.2nm or circa 1% of the passage distance for vessels routing from Humber to Ostend. Such effects are considered to be of minor significance. None of the other potential effects such as vessel collisions, effects on recreational or fishing vessels, effects on radar etc will give rise to significant effects either in isolation or cumulatively. Note that shipping operators, including those from other EEA member states, that have regular routes around the GWF area, have been directly consulted in the preparation of the GWF application.	Given the small proportion of vessels affected and the small deviation in routing caused, the GWF will not give rise to any significant transboundary effects on ships from other EEA member states. There will be no significant effects on the safety of navigation given the location of the GWF in relation to current shipping routes and when considering the mitigation measures set out to control shipping in the area.
Military and Civil Aviation (Chapter 17)	The GWF lies wholly within UK airspace. The assessment has concluded that there would be no impact on UK military or civil aviation as a result of the GWF project.	Given that the GWF lies wholly within UK airspace, there can be no significant transboundary effects on other EEA member states.

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
Other Human Activities (Chapter 18)	Oil & Gas: there is no oil and gas infrastructure within 100km of GWF; there will be no impacts on oil and gas activities. Aggregates: a number of dredging licence or application areas lie generally to the west of GWF, although several lie adjacent to the export cable route. The export cable route has been amended to ensure no direct impacts on these areas. There is an aggregate area, owned by CEMEX UK that is currently located in the GWF export cable corridor. CEMEX UK Marine has no objections to GWFL submitting a planning application that includes reference to potential cables both in and adjacent to Area 507/5, subject to reaching agreement of any outstanding issues prior to construction. All of the other areas are licensed to UK owned businesses which have been directly consulted in the preparation of the GWF application. Other wind farms; the only wind farm that might be directly affected by GWF is the Greater Gabbard site lying immediately adjacent to and under the same parent company ownership as GWF. Further afield, the East Anglia zone lies to the north. This project has been directly consulted in the preparation of the GWF application. Cables: several live telecoms cables run through or close by the GWF area with some being crossed by the GWF export cables. In addition the BritNed power cable runs to the south of the site. Damage to these cables is assessed to give rise to a potentially significant effect. However mitigation is set out in the form of cable separations and appropriate cable crossings which reduces the effect to one of negligible significance. All of these cable operators have been directly consulted in the preparation of the GWF application.	No significant transboundary effects will arise as a result of the potential impacts of the GWF project on other human uses of the area by virtue of the spatial separation of activities or by the application of appropriate mitigation and working arrangements and agreements.
Archaeology and Cultural Heritage (Chapter 19)	The effects of GWF are limited to the footprint of the wind farm infrastructure or indirect effects from changes to physical processes (scour etc). Both in isolation and cumulatively, with the proposed mitigation applied, no significant effects will occur.	Given the spatially limited effects no significant transboundary effects, direct or indirect, will occur.

EIA Topic (and Chapter)	Summary of potential effects in a transboundary context	Assessment of transboundary effects
Landscape, Seascape and Visual Character (Chapter 20)	The GWF lies at least 19km from the EEZ of another member state and much further from the nearest coastline. At this range no effects will occur on the seascape or landscape of another state either in isolation of cumulatively with other wind farms.	Given the distance of GWF from another EEZ, no significant transboundary effects can occur in respect of landscapes and seascapes.

28.4 Transboundary Effects - Conclusions

28.4.1 Potential transboundary effects have been summarised based on a review of the detailed EIA presented in this ES and for each of the topics considered. Transboundary issues have been considered in light of the potential for likely significant effects on:

(i) The environment of other adjacent EEA member states (i.e. impacts within the REZ of other states); and

(ii) Interests of other member states within the UK REZ.

28.4.2 Consultation has been conducted with those interests from other EEA member states known to have some level of interest in the GWF area or that may be likely to be affected by the GWF project. Consultation has been completed with commercial fishing interests from Belgian, the Netherlands and France and commercial shipping operators from a variety of other Member States. Discussions have also been held with commercial operators of cables.

28.4.3 With regard to point (i) above, the spatial separation of GWF from the EEZ of even the nearest EEA member state (at 19km), together with the prevailing tidal currents (on a south-west – north-east axis) means that, in most cases, it is concluded that there can be no direct or indirect significant transboundary effects, particularly given the limited spatial (and temporal) nature of the majority of the potential impacts on the environment arising from the GWF project Noise from the piling of foundations may result in disturbance of some species within the Belgian EEZ but such effects will be limited in extent, short term, temporary and reversible and will not lead to significant population effects for either fish or marine mammal species. No significant effects on any bird species will occur and as such there will be no significant transboundary effects on features of ornithological interest. As a result, there will be no significant adverse effects on sites, habitats or species of international nature conservation interest and specifically no impacts on the status of the Natura 2000 network of sites either in the UK or in other EEA member states.

28.4.4 In the case of point (ii), three primary interests were identified in the vicinity of GWF relevant to the consideration of transboundary effects – commercial fishing, commercial shipping and subsea cables.

28.4.5 On commercial fishing, Belgian and Dutch beam trawler do exploit the GWF area and, under the worst case may be excluded from the area during all phases of the development (see **Chapter 15**). However, the small area of the wind farm compared to the large areas of the southern North sea exploited by these vessels means that no significant effects will occur on the non-UK fleets and as such no significant transboundary effects will occur. As noted above, piling noise may disturb some fish over a larger area but such

effects will be temporary and reversible (behavioural and not injurious) such that no significant inter-related effects will occur on these non-UK fishing vessels.

28.4.6 In the case of commercial shipping, the proposed GWF project will result in the displacement of a small proportion of ships passing the area to the east but the deviation in course that would result would amount to only a small proportion of the overall passage distance and time for these vessels. More broadly, and with the proposed mitigation in place, effects on the safety of navigation are considered to be tolerable. As a result no significant transboundary effects will occur.

28.4.7 In conclusion, the detailed EIA presented for GWF in this ES allows the clear conclusion to be drawn that there would be no likely significant effect on the environment of another EEA member state nor on the interests of any such states within the UK REZ.