

Kriegers Flak Offshore Wind Farm

ESPOO – 2nd hearing - reply to ESPOO response. June 2016.

No.	Stakeholder	Subject	Response to notification	Reply to response	Consequence
A1	Federal Agency for Nature Protection (Bundesamt für Naturschutz) Germany	Water birds and migrating birds	<p>The planned Kriegers Flak Offshore Wind farm is located within an important N-S going migratory track for terrestrial birds (Southern Sweden to Germany) as well as a W-E going migratory track for water birds. Based on that location an impact on the bird population in Germany cannot be excluded, especially due to cumulative effects with the already existing Offshore Wind Farm 'Baltic II'. The Federal Agency for Nature Protection refers to the requirement of shutting down the turbines during bird mass migration events as collateral clause to receive permission for a wind farm by German Authorities. They suggest checking the need of a monitoring program and the forecast of bird mass migration in order to obtain an appropriate temporary shut-down of the turbines.</p> <p>BfN suggests cooperation between Danish and German Authorities regarding monitoring programs.</p> <p>Due to the proximity to the German EEZ it is expected that populations of resting birds are scared away. BfN worries about the effects of displacement of bird populations and the loss of habitat for resting birds in German territorial waters, which can be expected, especially as a result of the cumulative impacts from the German offshore wind farm 'Baltic II'. BfN assumes that the negative impact on bird population in Danish territorial waters can also be applied on bird populations in German territorial waters.</p>	<p>Information on water birds and migrating birds is found in the report: 'Kriegers Flak Offshore Wind Farm, Birds and Bats, EIA – Technical Report, June 2015'. The report is available in English.</p> <p>Further to this An Appropriate Assessment for common crane is found in the report "Report to Inform an Appropriate Assessment: Natura 2000 sites designated for migratory common crane in the west-central Baltic, September 2015" (available in English).</p> <p>The impact assessment in the EIA technical background report as well as in Part 3 in the EIA-report (only available in Danish) focused on water birds (long-tailed duck, common scoter, velvet scoter ) and migrating birds (common crane and raptors) because these birds were considered to be the most sensitive to establishment of an offshore wind farm at Kriegers Flak.</p> <p>Overall the impacts on water birds (long-tailed duck, common scoter, velvet scoter) were assessed to be minor to negligible.</p> <p>Long-tailed duck is the most important/present water bird in the project area. However it has been estimated that less than 1 % of the Baltic population of Long-tailed duck may be impacted by the establishment of an offshore wind farm at Kriegers Flak. Therefore the impact has been assessed to be minor.</p> <p>The impact on raptors was assessed to be negligible.</p> <p>The EIA technical background report focused on the assessment of potential impacts on migratory species and also undertook an initial screening exercise for Habitat Regulations Assessment (HRA). The EIA Technical Report included a literature review investigating records and data of migratory species using potential Baltic flyways over the Arkona Basin</p>	None

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				<p>and Bornholm, Denmark and also utilised radar tracking and GPS telemetry of common cranes in order to inform Collision risk Modelling (CRM). The Technical Report further considers preliminary cumulative impact assessment on common crane and calculates collision rates for a selected number of other projects.</p> <p>Further to this the Danish Energy and Nature Protection Agencies respectively were provided with an investigation in the form of a Report to Inform an Appropriate Assessment (RIAA) with respect to Natura 2000 sites designated for migratory common crane in the Baltic region.</p> <p>The Appropriate Assessment report presents the details of the assessment of the potential impacts on Natura 2000 sites designated for migratory common crane due to the risk of collision with Kriegers Flak Offshore Wind Farm alone or in combination with other plans or projects. It is concluded that no adverse effects on any Natura 2000 site integrity as a result of collision impacts on migratory common crane from Kriegers Flak OWF either alone or in combination with other projects are expected.</p> <p>Therefore no mitigation measures, such as automatic shut-down or monitoring program, have been proposed. Furthermore the Nature 2000 assessment concluded no adverse effects on any Nature 2000 site integrity as a result of collision impact on migratory common crane from Kriegers Flak either alone or in combination with other projects are expected. It is considered to be unlikely, that common crane population will suffer unsustainable mortality.</p> <p>Regarding the evaluation of common crane, the EIA and Nature 2000 assessments conclude no consideration of an alternative option for Kriegers Flak Wind Farm or application of mitigation is deemed to be necessary.</p> <p>Further to this a monitoring program has not been considered necessary.</p>	
A2	Federal Agency for Nature Protection (Bundesamt für	Marine mammals	BfN assumes the existence of harbour porpoise in the project area the whole year around.	Information about impacts on marine mammals is found in the background report "Kriegers Flak	Requirements on noise levels

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	<p>Naturschutz) Germany</p>		<p>Damages/injuries occur due to acoustic noise (single-event emission sound pressure level SEL between 160dB-200 dB causes temporary injuries, above 200 dB can cause physical injuries and can possibly be mortal).</p> <p>The establishment of monopiles (worst case) corresponds to SEL of 180 dB in a distance of 750 m. BfN assumes that noise emission due to pile-driving from the Kriegers Flak Offshore Wind Farm during the construction phase will propagate in German territorial waters with amplitudes &gt;160 dB. In reference to the European species conservation (Article 12 FFH guideline), such intensity of acoustic noise will harm, stress, injure or kill individuals of harbour porpoise.</p> <p>The permission process in Germany requires the compliance of 160 dB in 750 m distance from source area, making sure that no individuals of harbour porpoise are present in the area of 750 m from the source during piling by applying measure to scare existent individuals away.</p> <p>BfN refer to their homepage (<a href="http://www.bfn.de22515.html">www.bfn.de22515.html</a>) as well as to an added report by BMUB (chapter 4.2.) with knowledge of relevant methods to decrease noise and/or scaring off harbour porpoise to further distances.</p> <p>The BfN does not understand why the noise emission from piling shall be reduced by 16 dB in case of 10 MW turbines. They remark that in this case the SEL would still be too high.</p> <p>Furthermore BfN assumes that noise emission due to piling will enter an area with a radius of 8 km from the source and will result in behaviour of flight and avoidance.</p> <p>BfN suggests gravity foundation or suction buckets rather than monopiles to reduce noise emission during construction. In case of piling BfN suggests using monopiles with a small diameter.</p> <p>BfN points out that stratification (due to temperature and salt) in the Baltic Sea can result in acoustic noise channels, that can trigger noise propagation and so predictions on noise emission on harbour porpoise could be underestimated.</p> <p>BfN asks for further contact and information in the ongoing process, i.e. wind farm layout, construction etc.</p>	<p>Offshore Wind Farm - Marine Mammals – EIA – Technical Report, June 2015”. The report is available in English.</p> <p>Information about the underwater noise modelling, which has been undertaken as part of this project, is found in the report “Underwater noise modelling - EIA for Kriegers Flak Offshore Wind Farm, Technical report”.</p> <p>The final construction permission will include conditions to ensure the required mitigation measures are applied during construction.</p> <p>The impact assessment of the worst case situation (10 m diameter monopile foundation) indicates that underwater noise mitigation measures are required to ensure no marine mammals will experience permanent hearing damage (PTS).</p> <p>The Danish regulation is slightly different from the German regulation. The Danish regulation is developed to protect marine mammals from permanent hearing damage, and is based on the work from an expert group. The regulation is revised in 2016 including some new studies and fieldwork on harbour porpoises and seals. The Danish regulation and the background reports can be requested at the Danish Energy Agency. The Danish threshold value is 190 dB re. 1 <math>\mu\text{Pa}^2\text{s}</math> (PTS), for pile driving exposures longer than 1 hour (computed as the cumulated SEL over all pulses). The older threshold value on which the EIA has been based was 183 dB re. 1 <math>\mu\text{Pa}^2\text{s}</math>.</p> <p>The type of foundations depends on the concessionaire, though requirements regarding underwater noise emission are to be fulfilled in any case, including documentation of the fulfilment.</p> <p>Regarding underwater noise: stratification due to temperature and salt is included in the noise modelling.</p> <p>Information about the ongoing process can be found on the Danish Energy Agency’s web site: <a href="http://www.ens.dk/en/supply/renewable-energy/wind-power/offshore-wind-power/large-scale-offshore-wind-tenders">http://www.ens.dk/en/supply/renewable-energy/wind-power/offshore-wind-power/large-scale-offshore-wind-tenders</a></p>	<p>and mitigation will be integrated in the construction license.</p>

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A3	Federal Agency for Nature Protection (Bundesamt für Naturschutz, BfN) Germany	Natura 2000	BfN evaluates no disturbances of the SAC (Special Area of Conservation) 'Kadetrinne' (DE1339-301) and 'Westliche Rönnebanke' (DE1249-301) due to a distance to the project area of 50-70 km.	-	None
B1	State Agency for Agriculture and Environment Western Pomerania (Staatliches Amt für Landwirtschaft und Umwelt Vorpommern) Dienststelle Stralsund Germany	Marine mammals	<p>The State Agency for Agriculture states that the most important harm on marine mammals (harbour porpoise) will be underwater noise from piling, which can cause permanent injuries on harbour porpoise. They refer to the discussion of impacts on harbour porpoise in the 'Non-technical summary' of the EIA, summarizing minor impacts on harbour porpoise taking into account that individuals are scared away from the project area. The State Agency for Agriculture evaluates this to be an appropriate measure to avoid permanent hearing threshold shift (PTS) on marine mammals due acoustic noise from piling, although they suggest that a temporary hearing threshold shift (TTS) is to be treated and included as a relevant and preventable injury too.</p> <p>The State Agency for Agriculture points out that acoustic stress will provoke flight reaction especially during construction /piling, which can result in a separation of mother-calf pairs (loss of contact). Harbour porpoise is subject of species conservation programs in several of the German SACs (Special Area of Conservation) in coastal waters such as the SAC 'Plantagenetgrund (DE 1343-301) as well as 'Darsser Schwelle' (DE 1540-302).</p> <p>Due to seasonal migration of harbour porpoise the State Agency for Agriculture suggests that the EIA should include the impacts of underwater noise emission across borders and its effect on the state/condition of conservation of harbour porpoise in and between the FFH areas (thus to discuss the effect not only on the population in Danish territorial waters but also in the Central Baltic Sea) in order to ensure compliance with the Nature 2000 guidelines.</p> <p>They suggest that this may require restricting the construction/piling period off the mating season.</p>	<p>Impacts on the temporary hearing threshold (TTS) of harbour porpoises is evaluated in the technical report: "Kriegers Flak Offshore Wind Farm - Marine Mammals – EIA – Technical Report, June 2015" as well as in the EIA Part 3 'Marine environment' where the impact on harbour porpoises regarding TTS is evaluated to be minor to moderate.</p> <p>Regarding underwater noise, see comments to A2.</p> <p>The EIA includes assessments of potential transboundary impacts on populations of harbour porpoise.</p> <p>The background report and the EIA report state that harbour porpoise in the area are primarily part of a subpopulation in the Kattegat, the Belt Sea, Oresund and the western Baltic Sea.</p> <p>Significant cumulative impacts on marine mammals during the construction phase cannot be ruled out, if monopile foundations are driven into the seabed at Kriegers Flak and at one or more of the nearby offshore wind farms simultaneously. If that is the case, special consideration must be given to planning these activities in order to reduce the noise impact on marine mammals.</p> <p>The impact assessment does not conclude that timing restrictions with regards to construction of foundations are necessary, considering that the proposed mitigation measures are applied.</p>	Requirements on noise levels and mitigation will be integrated in the construction license.
B2	State Agency for Agriculture and Environment Western Pomerania (Staatliches Amt für Landwirtschaft und Umwelt Vorpommern, StaLU) Dienststelle Stralsund Germany	Migrating birds	<p>StaLU states that the evaluation of transboundary impacts on birds due to collision risk and barrier effect is basically in accordance with the EU bird protection program.</p> <p>For a detailed evaluation of the risk assessment in the southern Baltic area StaLU refers and asks to include the following: Relevant species for the coastal waters of Mecklenburg-</p>	<p>See comments to A1.</p> <p>The assessment of impacts on common crane due to collision with turbines is based on existing knowledge from other projects, which have been carried out during different weather conditions.</p>	None

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			<p>Vorpommern included in the EU-bird protection program (Source: Anlage 1 der Landesverordnung über die Europäischen Vogelschutzgebiete in Mecklenburg-Vorpommern (Vogelschutzgebietslandesverordnung- VSGLVO M-V) vom 12.07.2011 (GVOBl. M-V 2011, 462) shall be included in the EIA.</p> <p>It should be mentioned that the area between Rügen (Germany) and Skåne (Sweden) is defined by the Federal Agency for Nature Conservation as an area with a very high importance for migrating birds in the Baltic Sea.</p> <p>In the EIA it is concluded that birds, migrating during the day, can see and react on obstacles (compared to migration during night time). The Agency for Agriculture suggests to include that collision during day time cannot be excluded in case of bad weather conditions, such as fog, heavy rain and strong winds, which result in lower flight height, and will increase the risk of collision and hazards on migrating birds during day time migration, respectively.</p> <p>The Agency of Agriculture suggests in case of higher abundance of migrating birds that it can be necessary to consider relevant measures to minimize the collision risk. They suggest the use of bird activity-controlled automatic shut-down of the turbines as mitigation measure which would stop the wind farm turbines, when the density of migrating birds during night time exceeds a certain number or in weather condition with lowered visibility range during daytime. Furthermore they suggest suitable measure of monitoring should be applied to monitor the efficiency of the automatic shut-down and adjust the automatic bird density controlled shut-down.</p>	<p>The preliminary screening before the EIA investigations, resulted in a list of bird species which may potentially be impacted by an offshore wind farm at Kriegers Flak. Species protected in the Habitats Directive Annex 1 were included in the preliminary screening.</p>	
B3	<p>State Agency for Agriculture and Environment Western Pomerania (Staatliches Amt für Landwirtschaft und Umwelt Vorpommern, StaLU) Dienststelle Stralsund Germany</p>	Bats	<p>StALU resumes bats gathering at sites along the Swedish coastline, migrating individually or in groups across the Baltic Sea towards their wintering grounds.</p> <p>Even though their general flight height is lower than the risk area (rotor area) bats can attain rotor heights and might even be attracted to the rotor area due to its secondary function as food source and rest area. Another hazard can occur from the so called barotrauma, a physical damage of body tissue, caused by the low-pressure cell in the proximity of the rotor area. Migrating patterns and corridors are rather unknown, and detailed studies cannot be required from the executive authorities. Due to the species-specific migrating behaviour and migrating pattern after the installation of the offshore wind farm (attraction vs. avoidance), a prediction of collision risk is not possible in advance.</p>	<p>Information on migrating bats is found in the report: "Kriegers Flak Offshore Wind Farm, Birds and Bats, EIA – Technical Report, June 2015". The report is available in English. The reports conclude that the degree of impact on bats is considered as minor. Therefore there will be no monitoring program or automatic shut-down.</p>	

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			<p>StaLU suggests a monitoring program: installing acoustical bat monitoring programs ('Horchboxen') after the construction of the offshore windfarm; using automatic bat detectors with incorporated automatic shut-down.</p> <p>They state that the use of bat detectors and the automatic shut-down in connection with a monitoring program would fulfil the requirements of the Federal Agency for Nature Conservation and EU guidelines Fauna-Flora-Habitat-Richtlinie (Richtlinie 92/43/EWG des Rates vom 21. Mai 199) (§ 44 Absatz 1 Nummer 1 BNatSchG (vgl. § 7 Absatz 2 Nummer 13 b) BNatSchG, Anhang IV der Richtlinie 92/43/EWG).</p>		
C1	Regional Planning Association Western Pomerania (Regionaler Planungsverband Vorpommern) Germany	Cumulative effects	<p>The Regional Planning Association states no direct interferences with the federal state planning of Western Pomerania due to the proximity of KF OWF to the coastline of Mecklenburg Vorpommern of &gt;30 km.</p> <p>The Regional Planning Association suggests that EIA assessment of cumulative effects should be further concretised during the ongoing process and planning of the Kriegers Flak Offshore Wind Farm.</p>	<p>Cumulative effects are addressed in the technical background reports and in the EIA report.</p> <p>Information about the ongoing process can be found on the Danish Energy Agency's web site: <a href="http://www.ens.dk/en/supply/renewable-energy/wind-power/offshore-wind-power/large-scale-offshore-wind-tenders">http://www.ens.dk/en/supply/renewable-energy/wind-power/offshore-wind-power/large-scale-offshore-wind-tenders</a></p>	None
D	Central Command for Maritime Emergencies (Havariekommando) Germany	Wind farm layout and, emergency procedures	<p>Due to the vicinity of the project to the German EEZ and possible transboundary cooperation in any emergencies the Central Command for Maritime Emergencies asks to be informed about further details regarding the project development, i.e. wind farm layout charts, coordinates of each construction during the ongoing process.</p> <p>Furthermore the Central Command for Maritime Emergencies asks for transmission of any available alarm-plans, emergency procedures and contact details of the project as well as information regarding support activities in a DenGer-plan activation-event.</p>	<p>The DEA will try to inform CCME, about anything new of interest for the CCME.</p> <p>Information about the ongoing process can also be found on the Danish Energy Agency's web site: <a href="http://www.ens.dk/en/supply/renewable-energy/wind-power/offshore-wind-power/large-scale-offshore-wind-tenders">http://www.ens.dk/en/supply/renewable-energy/wind-power/offshore-wind-power/large-scale-offshore-wind-tenders</a></p> <p>Regarding safety concerning the platforms, Energinet.dk will prepare an HSE plan for the construction phase in collaboration with the relevant entrepreneurs cf. the requirements of Danish legislation. An emergency preparedness plan will be part of the HSE plan. For the operation phase, an emergency preparedness plan will be put in place for the unmanned platforms cf. Energinet.dk's HSE certification requirements. Energinet.dk is in the process of establishing a first and single point of contact regarding all HSE and emergency incidents of Energinet.dk-owned structures and operations. The point of contact will appear from Energinet.dk's homepage: <a href="http://www.energinet.dk">www.energinet.dk</a>. Upon request Energinet.dk is ready to collaborate with any</p>	None

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				relevant authority within and outside Denmark regarding contingency planning and emergency abatement.	
E	German Sailing Association (Deutscher Segler-Verband) Germany	Wind turbine layout and marine safety	<p>The German Sailing Association refers to several regulations and laws regarding marine safety and regulation for pleasure crafts at sea citing the German Traffic Regulations for Navigable maritime Waterways; the Convention on the Law of the Sea, article 60; as well as Germanischer Loyd. Here they point out that there are more or less no restrictions for pleasure crafts to enter and navigate in and close to offshore wind farms.</p> <p>Deutscher Segler-Verband demands that ships under 24 m in length are allowed to navigate through the wind farm.</p>	<p>Information about access to the wind farm area and safety zones is found in the report: "Kriegers Flak Offshore Wind Farm, Technical Project Description for the large-scale offshore wind farm (600 MW) at Kriegers Flak, October 2015".</p> <p>The wind farm is located in the Danish EEZ, hence the Danish Maritime Authority (DMA) will determine safety regulations.</p> <p>The exact safety zones during construction will be agreed with the DMA prior to construction.</p> <p>In general, there are no restrictions regarding navigation of ships within Danish offshore wind farm areas during the operation phase.</p> <p>However specific rules for navigation will be defined by the DMA when the final wind farm layout has been decided.</p>	None
F	County Western Pomerania Ruegen (Landkreis Vorpommern-Rügen) Germany		No comments.	-	None
G	Hanseatic City of Rostock (Hansestadt Rostock) Senator für Bau und Umwelt Holbeinplatz 14, Germany		The Hanseatic city of Rostock wishes information and cooperation during the permission process if there are any requirements regarding the extension of the land based grid connection that may be in the scope of responsibility of the Hanseatic city of Rostock.	Kriegers Flak OWF comprises structures in Danish territory and Danish territorial waters only. It does not include any land based structures in Germany. The question raised may, however, concern another on-going project, i.e. the Kriegers Flak Combined Grid Solution (CGS). Energinet.dk and the German company 50 Hertz are collaborating on establishing the CGS project, which will connect the Danish sea cable between the Kriegers Flak OWF and Denmark with the German sea cable from the Baltic II OWF and Germany, thereby establishing a new power connection between the two countries. Obtaining environmental permits of land based structures in Germany of the CGS project will be the responsibility of 50 Hertz.	None
H	Hanseatic City of Stralsund (Hansestadt Stralsund)		No comments.	-	None

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	Germany				
I	Svenska Kraftnät Sweden	Hansa Power Bridge project	<p>Svenska Kraftnät has taken note of the documents for the above matter and has nothing to recall the established proposals.</p> <p>Svenska Kraftnät informs that in the autumn of 2015 they signed a cooperation agreement with the German system operator Sollertz targeting to build a DC link, called Hansa Power Bridge, between the south coast and the German coast west of Rugen. The project is still in the initial phase, and it is not possible to say, which route which may be proposed for the planned direct current connection. Germany, however, in its marine planning identified a number of maritime areas designed just for crossing international line elements, such as power cables. One of these areas, known as Gate 8, looks to be in the same sea area of the planned wind farms at Kriegers Flak. It is therefore not possible to rule out that the planned new DC link between Sweden and Germany may be proposed to pass near Kriegers Flak.</p> <p>For general information regarding the Swedish Kraftnät future plans for the national grid for electricity, we refer to Perspektivplan 2025 and Nätiitvecklingsplan 2016 -2025. Relevant documents are published on <a href="http://www.svk.se">www.svk.se</a>.</p>	<p>The Danish Energy Agency (DEA) is not informed about the project 'Hansa Power Bridge' and has not received an application for this project.</p> <p>The DEA will discuss the project as soon as they receive information about it.</p>	None
J	Sveriges Meteorologiska och Hydrologiska Institut (SMHI) Sweden	Hydrology	<p>SMHI refers to the agreement from 2012 that the environmental impact assessment has to account for the wind farm's impact on the vertical mixing in the water column (due to turbine foundation and air current/flow over the water surface).</p> <p>SMHI is missing a description of vertical mixing in EIA and points out that such a statement is important because an increased mixing could affect the renewal of the Baltic Sea bottom water.</p>	<p>Information about hydrography is found in the report: "Hydrografi, VVM-redegørelse for Kriegers Flak Havmøllepark, Teknisk baggrundsrapport". The report is available in Danish only.</p> <p>Vertical mixing is assessed in the above mentioned report and in the EIA-report, part 3, section 5.3.1. It is assessed that there will be "none to minor" impact on salinity, vertical mixing and on the renewal of the Baltic Sea bottom water.</p>	None
K	Vattenfall Sweden	Wind farm layout and location	<p>Vattenfall announces that they are authorized under the Act/law of Sweden's economic zone and continental shelf, to establish 128 wind turbines on the Swedish part of Kriegers Flak.</p> <p>Vattenfall refers to the comments they submitted in connection with the notification of 2012: cumulative effects of the two parks in general and especially the resulting lee-effects due to the wind conditions for Vattenfall's Swedish project at Kriegers Flak.</p>	<p>The proposed Swedish wind farm at Kriegers Flak is integrated in the assessments of cumulative effects in the EIA report for Kriegers Flak OWF (part 3 Marine Environment, Cumulative Effects).</p> <p>The Kriegers Flak wind farm will be built on Danish territory hence no restriction due to the lee-effect on the Swedish part of Kriegers Flak will be considered.</p>	None



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			Vattenfall requires these aspects to be included in the further detailed planning, so that the project on the Swedish side of Kriegers Flak is not to be inhibited/impaired.		
L	Kustbevakningen Sweden	Marin safety	<p>Kustbevakningen has, based on its duties, no comments on the environmental impact, but would like to complement/update their statement from 2012 with another point covering EIA at sea:</p> <p>Due to the proximity to the Swedish EEZ and Swedish territorial waters the operator must contact Kustbevakningen in connection with the upcoming construction and in case of oil spill (or other dangerous liquids/substances) (according to the Coast Guard Agreement from Copenhagen).</p>	Due to the Danish regulation, the Concessionaire has to contact the Danish authorities in case of oil spill. If necessary the Danish authorities will contact "Kustbevakningen".	None
M	Trafikverket Sweden	Wind farm layout	<p>Trafikverket emphasizes that the maritime traffic must not be limited or prevented by wind farms. This also counts for unnecessary detour routes for vessels, as this would result in an increase of emission as well as costs. The planned project is located in direct proximity and overlapping with main shipping routes in the Baltic Sea.</p> <p>Trafikverket also points out that a high maritime security is to be maintained in the area, and the navigation equipment must not be disturbed by the installations and the wind farm, respectively.</p>	<p>The impact on shipping and navigation is presented in the "Environmental Statement Part 3 Marine environment" and in the navigational risk assessment for Kriegers Flak Offshore Wind Farm ("Sejladsforhold, VVM-redegørelse for Kriegers Flak HavmølleparkTeknisk baggrundsrapport, Oktober 2015").</p> <p>The overall approach for the navigational risk assessment follows IMO's (International Maritime Organization) guidelines for evaluation of navigational safety assessment. The approach has been approved by the Danish Maritime Authority (DMA) (Søfartsstyrelsen), and the results have been evaluated together with the DMA.</p> <p>DMA defines the traffic rules for the area, when the final layout of the wind farm has been decided.</p> <p>The Danish transport and Construction Agency (Trafik- og Byggestyrelsen) decides on the rules regarding lighting and other types of marking in terms of safety, when the final layout of the wind farm has been decided.</p> <p>Disturbance of navigation equipment is not expected. Alternating-current (AC) submarine cables, which will not interfere with navigational systems, will be installed. Thus it has not been addressed in the technical report or the EIA report.</p>	None
N	Boverket Sweden	Marine mammals and	Boverket has no objections to the established environmental impact assessment. Though they argue that the project raises		None

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		birds	the need to develop future cooperation on the management of marine resources. The present EIA clearly shows the need for coordination regarding long-tailed duck, migrating cranes and harbour porpoises. Boverket suggests that the marine planning is executed by all Baltic countries, which are members of the EU, should be able to exchange working methods/results, which at an early stage can be coordinated thus reaching a consensus on how marine resources are to be explored. A coordinated marine planning would make it possible to take account of the impacts of wind farm across project boundaries and land borders in a different way than indicated by the ESPOO Convention .	The Danish Energy Agency agrees that there is a need for better cross-border cooperation on the marine spatial planning, although there is ongoing work (ex. the Baltic Scope project, and the "Intergovernmental Offshore Wind Forum").	
O1	Naturvårdsverket Sweden	Migrating birds	Naturvårdsverket (Environmental Protection Agency) states the importance of adjusting/optimizing the design of the wind farm to minimize the impact on important migration routes of birds and bats, as far as they are affected. If particularly important and concentrated migration routes are identified, the individual turbines/wind farm should be placed differently or should be moved to another location to minimize the impact.  Naturvårdsverket notes that the area is highlighted as a particularly important passage regarding crane migration and other important raptors. In some cases there is an increased collision risk. Since a majority of the individuals of many species move in just a few days, when weather conditions are favourable, an automatic shut-down should be installed, which can be activated during most critical periods.	See comments regarding birds in A1 and bats in B3.	None
O2	Naturvårdsverket Sweden	Water birds	Naturvårdsverket notes that wintering long-tailed ducks, common scoter and velvet scoter should be mentioned. The populations are relatively small, compared to the populations in the entire Baltic Sea. Furthermore they state that loss of habitat will be a problem since the populations are already declining for other reasons, so the loss of habitat caused by the offshore wind farm can be seen as an additional factor.	See A1	
O3	Naturvårdsverket Sweden	Marine mammals	Naturvårdsverket states the importance of special care and caution in connection with the construction phase in order to avoid negative impact on the harbour porpoises, which is also mentioned in the EIA.	See A2	
P	Sveriges Geologiska Undersökning (SGU) Sweden	Sediment conditions	SGU announced briefly examined the Swedish part of Kriegers Flak and detailing the conditions that emerged from these studies. SGU indicates that the wind farm and its construction can result in minor changes in sediment dynamics, erosion and spreading of sludge, fine material and possible	Sediment dispersal during construction has been analysed. Details are found in the report "Sedimentforhold og vandkvalitet, VVM-redegørelse for Kriegers Flak Havmøllepark, Teknisk baggrundsrapport" (Niras, 2015) as well as in the EIA,	None

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			pollution/contamination of the environment. SGU indicates that the spreading of fine material without any precautions during the construction phase can affect a large area.	part 3. The reports are available in Danish only.  The background report and the EIA (Part 3) concludes that sediment dispersal due to construction activities will be limited to small areas and short time periods, thus changes in sediment conditions are assessed to be insignificant.	
Q	Försvarsmakten Sweden	Wind farm layout	Försvarsmakten worries about that the establishment of the wind farm will result in a significant harm of their strategic impact /power due to the influence on technical systems.	The Kriegers Flak Offshore Wind Farm is being built outside Swedish jurisdiction and therefore there is no legal obligation to compensate FRA for any necessary mitigating measures.	None
R	Havs- och vattenmyndigheten (HaV) Sweden	Marine mammals	<p>HaV suggests that the project should include impact risk on harbour porpoises, fish and fishing. HaV states the environmental impact on marine life being biggest during the construction phase. These impacts can be prevented by various measures. HaV states on the impact of fish and harbour porpoises by noise and concludes, that noise reduction is necessary.</p> <p>HaV suggest that information from the SAMBAH project concerning harbour porpoises have to be taken into account in the detailed planning. During the operational phase HaV sees no reason to believe that wind power is likely to have any negative effect on neither fish nor marine mammals.</p> <p>Though Commercial fishing may be adversely affected if they are excluded permanently from the area.</p> <p>HaV highlights the importance of describing and assesses cumulative effects of all the projects planned around Kriegers Flak.</p>	<p>Impacts on harbour porpoises, fish and fishing as well as cumulative effects are assessed in the EIA report, part 3 and in the relevant technical reports.</p> <p>It has been assessed, that the impact on fish communities will be negligible/minor, and no mitigation measures will be necessary.</p> <p>With regards to impacts from underwater noise on harbour porpoise, see comment to A2.</p> <p>The background report on marine mammals and the EIA-report (Part 3) include the preliminary results from the SAMBAH project. The final results had not been published at the time of submission of the EIA for Kriegers Flak OWF.</p>	None
S	Sveriges Ornitologiska Förening (SOF) Sweden	Water birds and migrating birds	<p>SOF focuses especially on long-tailed duck, raptors and cranes and states that the wind farm should be relocated and moved to another site.</p> <p>SOF states, it is not ethically defensible to explore the planned location due to the likelihood of moderate to significant impacts on several protected bird species.</p> <p>SOF indicates that the planned project involves habitat loss and displacement of several seabird species, particularly long-tailed duck, which is undergoing severe population decline.</p> <p>SOF recommends, in accordance with the leading research and knowledge of water birds, to completely avoid the exploration</p>	See A1.	None

No.	Stakeholder	Subject	Response to notification	Reply to response	Consequence
			of wind power in the area of shallow offshore banks (< 20 m) in the Baltic Sea. SOF considers that the location of a wind farm in a known migratory route for raptors and cranes, where most of the birds will pass in rotor height, and where the cumulative effect on cranes is evaluated as significant, is contrary to the EU's nature directives of the member countries' responsibility to protect bird populations. The establishment of such a wind farm involves the deliberate killing according to the precedent EU judgments (for example, C-103 / 00), which Denmark is obliged to follow.		
T	Länsstyrelsen Skåne Sweden		<p>Länsstyrelsen notes that the environmental impact assessment addresses four possible methods to construct wind turbine foundation. Länsstyrelsen evaluates that piling will result in noise from the construction and can disturb and harm harbour porpoises even on long distances away from the building site.</p> <p>Länsstyrelsen states that the conclusion, drawn in the EIA regarding Harbour porpoises, is insufficient. They refer to new studies by the LIFE project SAMBAH showing that the area around Kriegers Flak has the largest concentration of harbour porpoise (click sound recordings) in the Baltic Sea and that there is a clear seasonal variation in the presence of harbour porpoises at Kriegers Flak.</p> <p>Länsstyrelsen discusses the time limit of the piling work and asks to reconsider if piling is an appropriate construction method during the period, when harbour porpoises are most likely to be expected in the area.</p> <p>They refer the so-called 'bubble curtains', described in the Environmental Protection Agency's report ( 5828 ) Vindval as a protection method and suggests, that the effects of bubble curtains and other noise-absorbing/reducing measures should be mentioned in the EIA.</p>	<p>With regards to impacts from underwater noise on harbour porpoise, see A2.</p> <p>The background report on marine mammals and the EIA-report (Part 3) include the preliminary results from the SAMBAH project. The final results had not been published at the time of submission of the EIA for Kriegers Flak OWF.</p>	None
U	Försvaret radioanstalt (FRA) Sweden		No comments.	-	None
V	Jordbruksverket Sweden		No comments.	-	None
W	Myndigheten för Samhällsskydd och Beredskap (MSB) Sweden		No comments.	-	None
X	Transportstyrelsen Sweden		No comments.	-	None