Appendix to Espoo report

Triton

Consultation opinions and responses for ESPOO

Structor

OX2

1 Consultation opinions and responses

1.1 Denmark

1.1.1 Bornholm Regional Authority

- **Bornholm Regional Authority considers that the cumulative effect on the energy island at Bornholm needs to be described in the EIA**
  - Tritonia Vindpark AB ("OX2") has considered the Bornholm Regional Authority's opinion in the work on the EIA. The cumulative effects on the energy island at Bornholm are considered to be negligible, as described in more detail in Chapter 8 of the Espoo report (also mentioned as the "EIA").

1.1.2 Danmark´s Fiskeriforening PO (The Danish Fishers PO)

- **The Danish Fishers PO (the Association) has raised what account has been taken of the fishery currently taking place in the area. They consider it important to focus on the cumulative effects of offshore wind power in Swedish and Danish waters. The association also points out that Danish fishermen fish a large number of important fish and shellfish species in the project area and that priority must be given to co-existence between commercial fishing and offshore wind.**
  - OX2 has considered the commercial fishermen aspect in the work on the EIA All types of commercial fishing, with the exception of bottom trawling, will be able to continue in large parts of the farm during the operational phase, with the exception of a safety zone closest to the wind turbines. A description and assessment of the effects of wind farms on commercial fishing during the construction and operational phases, as well as conclusions on effects and impacts are summarised in section 7.9 of the EIA. The construction phase of the Triton wind farm is not considered to overlap with the construction phase of any of the other identified projects in the vicinity. The cumulative effects of nearby offshore wind farms during construction are therefore considered negligible. A detailed description of cumulative effects in the construction, operation and decommissioning phases is described in Chapter 8 of the EIA.

- **The association considers it important to investigate how the various species of fish and shellfish are affected by offshore wind turbines (changing substrates, ocean currents and changing the occurrence of different species of fish).**
  - The bases for descriptions and the estimated consequences are comprehensive reports describing the effects on fish (R.3). As the turbine foundations and erosion protection act as artificial reefs, numbers of fish (and shellfish) can increase locally in the area. Reefs can serve as a habitat for fish and a nursery for fry, and biodiversity can therefore increase as the artificial reefs add new habitats in the wind farm, where otherwise soft seabeds with lower fish populations predominate. In the southern Baltic Sea, natural hard seabed surface areas are dominated by, among others, common mussels and barnacles, together with associated species such as amphipods and polychaetes. This means that these species can also be expected to establish themselves on the Triton turbine foundations. As the Triton area has lower salinity than the waters off the west coast of Sweden there are no large crustaceans such as Norway lobster, lobster and European

edible crab. The establishment of Triton will thus not affect these species, either positively or negatively. Depending on the design used, the construction of wind turbine foundations in the Triton area is expected instead to provide increased production of common mussels, which have proven to be rapid colonisers on turbine foundations in other offshore wind farms. The substrate changes are expected to have a slight positive effect on fish in the area. The hydrographic changes resulting from the wind farm are minimal and very local. The effects on demersal fauna and flora are therefore considered to be negligible. This is further described in sections 7.2–7.3 of the EIA.

- **The association considers it important that favourable conditions for predators be highlighted, such as cormorants resting on turbine foundations while hunting in offshore wind farms. The growing number of seals and porpoises and their impact on the various species of fish should also be highlighted.**
  - OX2 has considered the viewpoint from the association. The environmental assessment of the impact on fish contains a description of how predators (seals, porpoises, etc.) affect presence of fish in the area. Based on the OX2 bird counts at Triton, the density of fish-eating birds is low in the area and great cormorants have not been observed in the project area during three flight counts. In addition, the location and depth conditions at the Triton wind farm contraindicate presence of significant numbers of great cormorants at the farm. All in all, the assessment indicates that the Triton wind farm will not attract any large numbers of great cormorants and that it is unlikely that the individuals who might be present in the wind farm will have a measurable effect on fish densities or stress levels of fish in the wind farm. As the number of species and the individual density of fish increase, there may potentially be higher predation pressure in the farm area as both seals and porpoises have been observed feeding around underwater constructions. Fish fauna is dynamic and there is a natural variation, therefore fish volumes will vary over time. There are no studies that suggest that large parts of stocks will congregate in the Triton wind farm to the extent that some predation pressure will affect stocks. The effect of predators on fish fauna is described in more detail in section 7.3 of the EIA.

- **The association also states that fishermen are concerned about magnetic fields around cables and noise from the blades that is transmitted down the foundations and cables to the seabed. The fishermen question how these factors will affect the presence of fish in the wind farm.**
  - OX2 has considered the aspect from the association. Magnetic fields have a limited impact on fish. This is shown not least in the fact that there is a reef effect around wind turbine foundations, which indicates that other factors are more important than a possible impact from subsea cables. The impact is deemed to be negligible. The impact of the noise generated by a wind turbine in operation or by boat traffic for maintenance, based on the operation as a whole, is insignificant. This in turn means that the impact is negligible. This is described in more detail in section 7.3 of the EIA.

1.1.3 Energinet

- **Energinet requests that a dialogue is initiated between Energinet and OX2 on the possible cable routing to the offshore wind farm. Energinet requests that the planning for the Triton wind farm ensures a minimum 400 metre wide corridor for laying the export cable. The corridor can run parallel to the Baltic Pipe gas pipeline corridor or directly south of the Swedish territorial border.**
  - OX2 has initiated a dialogue with Energinet regarding the planned cable routing through the wind farm.

1.1.4 The Danish Energy Agency

- **The Danish Energy Agency considers it very important that the Danish and Swedish authorities cooperate and coordinate environmental descriptions and cumulative effects of the establishment of the Triton wind farm and wind farms at Bornholm and the future energy island Bornholm.**
  - OX2 recognizes that the aspect is primarily aimed at the work conducted at an authority level. However, the company would like to emphasize that the construction phase for the Triton wind farm is not deemed to overlap with the construction phase of any of the identified project in the immediate area. A detailed description of cumulative effects in the construction, operation and decommissioning phases is described in Chapter 8 of the EIA.

1.1.5 The Danish Ministry of Defence

- **The Danish Ministry of Defence states that the wind farm may affect the military radar facility on Bornholm. The extent of the impact should be analysed and, if necessary, removed or reduced. If the impact cannot be avoided or reduced, requirements for adjustment of the wind farm or compensation may be imposed.**
  - OX2 has commissioned an impact analysis according to the method presented by the Ministry of Defence. The report has been sent to the Ministry of Defence.

1.1.6 The Danish Environmental Agency/Species and nature conservation

- **The Danish Environmental Agency/Species and nature conservation considers that any impact on the newly designated bird protection area F129 Rønne Banke (for the protection of long-tailed ducks) should be considered with regard to, inter alia, cumulative effects from other plans and projects.**
  - The impact on birds has been investigated and considered in the EIA and the accompanying report (R.6) and summarised in section 7.6 of the EIA. No long-tailed ducks have been found in the area of the Triton wind farm. In terms of the barrier effect on possible flights during the winter between Rønne Banke and the southern coast of Sweden, Triton is too far west to form any significant barrier. The number of resting and feeding seabirds is low in the area of the Triton wind farm, according to the results of counts and previous studies. The impact on long-tailed ducks of displacement effects is assessed to be negligible since they do not forage in the area. Long-tailed ducks usually fly at altitudes below 30 metres, so the risk of collision is considered to be very low. The

Triton wind farm is therefore not considered to affect the bird protection area. No cumulative effect is expected to occur that affects the F129 bird protection area.

- **The Danish Environment Agency/Species and nature conservation also wishes to draw attention to the vulnerable Baltic populations of porpoises and to the importance of implementing preventive measures, particularly in relation to noise, in order to avoid injuring marine mammals.**
  - The impact on marine mammals has been investigated and taken into consideration by account in the EIA and the accompanying report (R.4.A) and summarised in section 7.4 of the EIA. During the construction phase, several mitigatory measures will be used, such as soft start-up, double bubble curtains and Hydro Sound Damper.

- **The Danish Environmental Agency/Species and nature conservation would also like to draw attention to the island of Bornholm. The Triton wind farm could potentially have transboundary effects on the designation base for the Danish Natura 2000 site N252 (and in particular the F129 Rønne Banke bird protection area) and birds and bats, which risks infringing on Denmark's obligations in relation to the Species and Habitats Directive and the Birds Directive.**
  - The Triton wind farm is not expected to affect the Natura 2000 site N252 (Adler Grund og Rønne Banke) or the F129 Rønne Banke bird protection area (see answer to the Danish Environmental Agency/Species and nature conservation's first point of view above), as is also described in more detail in Chapter 11 of the EIA. The impacts on bats and birds have been assessed in Chapters 7.5 and 7.6 EIA. The transboundary impact on bats is assessed to be insignificant and the impact to be negligible. The transboundary effects of displacement and barrier effects on birds are considered to be negligible. The cross-border impact of collision risks is assessed to be negligible for all species except cranes where the impact of collision risk is assessed to be small. Use of mitigatory measures such as operational regulation during periods of high migration will mean that the impact on cranes is also considered to be negligible.

1.1.7 The Danish Environmental Agency/Aquatic environments and Outdoor Life

- **The Danish Environmental Agency/Aquatic environments and Outdoor Life considers that the EIA should report on the transboundary impacts on surface water bodies, groundwater bodies and Danish marine areas. The wind farm should not affect the ability to maintain marine strategy status – good environmental status in marine ecosystems, and allow sustainable use of marine resources. Aquatic environments and Outdoor Life also asks for information on whether the project involves a direct or indirect impact on water bodies that in turn results in a deterioration of the current state of these bodies or a failure to achieve established environmental objectives.**
  - The effects on aquatic environment and demersal flora and fauna, fish and marine mammals are described in sections 7.2 to 7.4 of the EIA As the impact is considered to be negligible no Danish surface water bodies or marine areas are considered to be affected by the wind farm. Nor does the wind farm affect any groundwater bodies. The wind farm is therefore not expected to affect the Danish marine strategy or set environmental targets.

- **In addition, the Danish Environmental Agency/Aquatic environments and Outdoor Life wonders whether the wind farm is in conflict with the NOVANA monitoring programme or the marine strategy directive monitoring programme.**
  - The transboundary effects on Danish waters are limited. The wind farm is therefore not expected to affect the Danish marine strategy or the targets set for the NOVANA monitoring programme.

1.1.8 The Danish Maritime Authority

- **The Danish Maritime Authority notes that the Triton wind farm is located very close to large volumes of shipping in the international shipping traffic system "Bornholmsgat". The planned turbines should therefore be located in such a way that there is both sufficient space for normal traffic flow, for vessels following traffic flows and traffic systems to carry out emergency manoeuvres outside the ship traffic system and normal traffic flows.**
  - Models according to PIANC and the British *Maritime and Coastguard Agency*, respectively, have been used in the assessment of safety distances.

- **The Danish Maritime Authority recommends that sailing risk analyses be prepared prior to the establishment of the wind farm, in accordance with international standards, such as the IMO "Formal Safety Assessment" (FSA).**
  - The methodology for the nautical risk analysis that has been conducted is based on an established methodology for maritime risk analysis in the form of ISO standards 31000 and 31010, as well as the FSA methodology recommended by the IMO, where deemed possible. The IWRAP Mk2 (IALA Waterway Risk Assessment Program) is used to assess whether and how the wind farm may affect the likelihood of grounding and collision between ships and to estimate the likelihood of ships sailing or drifting into the wind farm.

1.2 Germany

1.2.1 OWP Gennaker GmbH

- **OWP Gennaker GmbH considers that the approved Gennaker offshore wind farm has not been taken into account.**
  - The distance from the Triton wind farm to the Gennaker wind farm is too great for the occurrence of cumulative effects. For more detail seen the reasoning behind this in Chapter 8 of the EIA.

- **OWP Gennaker GmbH points out that the Gennaker wind farm is planned for construction in 2026/2027. OWP Gennaker is concerned about the risk of delays and high costs due to conflicting construction schedules.**
  - OX2 cannot see that the risks are great, as the timetables for the two projects do not appear to coincide. In general, OX2 is open to dialogue about how potential coordination with nearby wind farms can be achieved to reduce the risk of delays and increased costs.

- **OWP Gennaker GmbH also considers that consideration should be given to, and assessment made of, any cumulative effects on the marine environment and shipping during the construction and operational phases.**
  - OX2 has considered the comments of OWP Gennaker GmbH in the environmental assessment of cumulative effects. The distance to the Gennaker wind farm is considered to be too great for the occurrence of cumulative effects. For more detail seen the reasoning behind in Chapter 8 of the EIA.

1.2.2 Landesamt für Umwelt, Naturschutz und Geologie Mecklenburg-Western Pomerania (LUNG)

- **LUNG considers that transboundary effects and cumulative effects on fauna should be described in the EIA**
  - OX2 has taken the view of LUNG into account. OX2 has conducted counts of marine mammals, fish and birds in the planned area of the Triton wind farm. The bases for descriptions and the estimated consequences are comprehensive reports describing the effects on fauna (R.2, R.3, R.4.A, R.5, R.6, R.13). The transboundary impact on fauna is described in Chapter 7. Cumulative effects of the construction, operation and decommissioning phase related to other permitted or planned wind farms and other activities in the area are described in Chapter 8 of the EIA.

- **LUNG considers that the impact on migratory birds, especially in the coastal waters of Mecklenburg-Western Pomerania, where large European bird protection areas have been identified and where a large number of migratory birds are present, should be described in the EIA**
  - The impact on migratory birds has been investigated and taken into consideration in the EIA and the accompanying report (R.6) and is summarised in section 7.6 of the EIA. It shows that no impact is present with the actions that have been taken, such as operational control**.** This also applies to migratory birds migrating via the coastal waters of Mecklenburg-Western Pomerania.

- **LUNG considers that protection areas that may be affected by the project should be identified.**
  - Natura 2000 sites and sites protected under the Birds Directive are shown in 2 in the EIA. Only the Natura 2000 area Sydvästskånes utsjövatten (SE0430187) are deemed to be affected by the wind farm, see section 3.2 and Chapter 11 of the EIA.

- **LUNG also points out that the scope for other relevant plans and projects in the coastal waters of Germany should not be overlooked either.**
  - Nearby permitted and planned wind farms and other projects are shown in Figure 6 in Section 3.5.1 of the EIA Cumulative effects of the construction, operation and decommissioning phase related to other permitted or planned wind farms and other activities in the area are described in Chapter 8 of the EIA.

- **Furthermore, LUNG considers that appropriate sound preparation calculations should be made for high-lying sources above the water, as onshore at the Mecklenburg-Western Pomerania coast.**

- Sound calculations have been made and modelling can be seen in Figure 24 and Figure 25 in the EIA. The results of the models indicate that the noise does not reach any coast.

1.2.3 The German Federal Waterways and Shipping Agency (GDWS)

- **GDWS highlights risks to maritime safety. According to the layout in the draft, a gap in the wind farm for the Ystad-Swinemünde route would be kept clear, but affected vessels on the Sassnitz-Ystad route would no longer be able to follow their existing routes but would have to go around the wind farm or also use the corridor between the wind turbines.**
  - The north-south route for ferry services between Sassnitz and Ystad, for example, will be kept wide enough to allow ship traffic to continue.

- **GDWS also highlights the consequences of possible vessel breakdowns. The EIA should describe and evaluate the effects of any incident within or at the wind farm which, due to the immediate proximity to the Swedish-German continental shelf boundary and depending on existing main wind directions (southeast), could also affect areas for which Germany is responsible.**
  - In a nautical risk analysis (R.17), the likelihood of accidents has been quantified, including collisions that could lead to discharges of oil. The dominant wind direction is from the west to the south-west, which would lead an oil spill away from the German coast. There will be booms in the wind farm that can be used quickly to limit spread, and wind farm vessels can also be used in such work.

1.2.4 The Institute for Baltic Sea fisheries

- **The Institute for Baltic Sea fisheries points out that some research corridors overlap with the "Baltic Acoustic Spring Survey" area where annual surveys are conducted in May. It is important that the Institute for Baltic Sea fisheries has access to the site in order to carry out the surveys.**
  - The survey corridors for the export cables to the Swedish mainland are currently preliminary and will be specified and delimited when the final route is selected. When the final route for the export cables is selected, these will be tested in separate order. The consultation process for the export cables started in December 2022. Wind farm work and export cables will be adapted as far as possible to other interests.

1.2.5 The German Nature and Biodiversity Conservation Union (NABU)

- **NABU expresses concern about the assessment that the expected environmental impact from the farm is expected to be limited.**
  - The consultation notification was drafted at an early stage of the project and more studies have now been conducted and an EIA has been compiled. The EIA summarises the studies carried out and assessments are made of impacts on relevant environmental aspects. The EIA also describes the assessment grounds used in the EIA, i.e. how the assessments have been made.

- **NABU wonders about the impact of the wind farm on the Baltic Sea and its poor environmental status. The EIA should take into account the poor ecological and environmental status of the Baltic Sea.**
  - The effects on aquatic environment and demersal flora and fauna, fish and marine mammals are described in sections 7.2 to 7.4 of the EIA. As the impact is considered to be negligible, the Baltic Sea and its poor environmental status are considered to not be affected negatively by the wind farm.

- **NABU also wonders about the impact of the wind farm on fauna (birds, porpoises and bats).**
  - OX2 has conducted counts of marine mammals, fish and birds in the planned area. The bases for descriptions and the estimated consequences are comprehensive reports describing the effects on fauna (R.2, R.3, R.4.A, R.5, R.6, R.13). The construction phase will be ongoing for a limited period and mitigatory measures will be taken. Negligible to small adverse effects are expected to occur for fish and marine mammals as a result of the activity, that is, both of the wind farm and the inter-array cable network. The impact on demersal fauna is considered to be negligible. During the operational phase, the impact on fish, marine mammals, demersal flora and bats is considered to be negligible. The impact on birds is assessed to be negligible to small, depending on the species of bird. For recipients and values linked to demersal flora, fauna and fish, the impact is considered to be very local and is therefore not deemed to lead to any transboundary impact. For marine mammals, the transboundary impact is assessed to be the same as in Swedish waters, because affected populations move across large areas between different countries. For birds, the main effects and impacts are assessed to be linked to displacement and collisions with wind turbines. The risk of collision is greater or less depending on the species of bird. Overall, the impacts are assessed to be small to negligible. For more details on the effects on fauna, see Chapter 7 of the EIA,

- **NABU points out that Sweden participates in CMS and has thus undertaken to minimise and mitigate any impact on species. NABU wonders about the impact of the wind farm on migratory birds and its actions during mass migrations.**
  - OX2 has conducted several bird counts to survey the presence of birds, including migratory birds, in the planned area. The surveys have given a good picture of the numbers of birds present. In the context of the environmental assessment process, the impact of the project in the various phases has been reviewed and described, among other things, in terms of barrier effects, displacement and collision risks, which also includes an assessment of cumulative and transboundary effects. A report assessing the impact on birds has been prepared (R.6). The study conducted for birds in the area shows that there are negligible impacts on all species except cranes, where there is little impact without mitigatory measures and negligible impacts with mitigatory measures. Mitigatory measures in the form of equipment for the detection of cranes will be used and the impact of the established wind farm will be followed up in a survey programme. The wind farm will also be equipped with operational control equipment. This is described in more detail in section 7.6 of the EIA. Mitigatory measures are described in more detail in Chapter 10 of the EIA.

- **NABU points out that the Triton wind farm overlaps with an important area for porpoises.**
  - The aspect has been considered. OX2 has conducted porpoise counts and the surveys have provided a good overview of the presence of porpoises in the area. A report assessing the impact on porpoises has been prepared (Reference report R.4.A). Conclusions regarding the impact on porpoises are presented in section 7.4 of the EIA.

- **NABU considers that Germany's recommendations on the impact of noise on porpoises should be taken into account.**
  - Calculations for subsea noise have been made and are presented in section 6.1 of the EIA and in R.4.A and section 7.4 of the EIA, where a comparison is also made between the guidelines of different countries.

- **NABU considers that measures to reduce the impact on bats during intensive migration periods should be described in the EIA**
  - The impact on bats has been investigated and taken into account in the EIA and the accompanying report (R.5) and is summarised in section 7.5 of the EIA. Furthermore, precautions will be taken to avoid negative impact on bats, as further described in section 7.5 of the EIA. Mitigatory measures are compiled in more detail in Chapter 10 of the EIA.

- **NABU is also concerned about the location of the wind farm because it risks having a major negative impact on the environment and therefore wonders if alternative locations have been examined.**
  - OX2 has taken NABU's position regarding location into account. Alternative locations are presented in Chapter 9 of the EIA.

- **NABU considers that the effects on species in Swedish waters and bordering waters should be taken into account.**
  - OX2 has conducted counts of marine mammals, fish and birds in the planned area. The bases for descriptions and the estimated consequences are comprehensive reports describing the effects on fauna (R.2, R.3, R.4.A, R.5, R.6, R.13). The impact on species is described in more detail in Chapter 7 of the EIA.

- **NABU considers that the impact on shipping and the impact on the environment in the event of a collision should be taken into account.**
  - The aspect has been considered. A marine risk analysis has been carried out on the basis of current recommendations and a required safety distance will be maintained between wind turbines and adjacent routes. The impact on shipping and impact on collision are discussed in Section 7.10 of the EIA.

- **NABU considers that the best possible lighting technology (obstruction lighting) should be used to achieve the least possible impact on birds and bats.**
  - The effects on bats and birds are described in sections 7.5 and 7.6 respectively of the EIA. Mitigatory measures will be taken to avoid any negative impact, as described in the respective sections. In the case of obstruction lighting, OX2 will apply the Swedish Transport Agency's regulations on obstruction marking.

- **NABU considers that the noise impact on porpoises etc. when detonating UXO should be investigated.**
  - The impact on porpoises of detonating UXO is discussed in Section 7.4 of the EIA. UXO is not expected to be found in the wind farm area, but if there were to be, the first step is to avoid building in that particular part. In cases where the area cannot be avoided and the UXO must be removed, a separate assessment will be made for each occurrence of UXO. Each occurrence of UXO is a unique site-specific situation that needs dedicated subsea noise modelling.

- **NABU points out that cumulative effects of other wind farms need to be reported in the EIA.**
  - Cumulative effects of the construction, operation and decommissioning phase related to other permitted or planned wind farms and other activities in the area are described in Chapter 8 of the EIA. The construction phase for the Triton wind farm is not considered to overlap with the construction phase of any of the other identified wind farms. The cumulative effects are therefore considered negligible.

- **NABU believes that the impact on the Natura 2000 site and other protected sites should be limited.**
  - The project has developed extensive Natura 2000 surveys that specifically address the impact on the Natura 2000 area Sydvästskånes utsjövatten. No impact is expected on any other nearby Natura 2000 sites, as described in more detail in sections 7.2, 7.4 and 7.6 of the EIA.

1.2.6 The German Federal Agency for Nature Conservation (BFN)

- **BFN points out that the Arkona basin is an important migratory bird route and therefore wonders about the barrier effects.**
  - OX2 has conducted several bird and bat counts to survey the presence of birds and bats, including migratory birds and bats, in the planned area. The surveys have given a good picture of the numbers of birds and bats present. In the context of the environmental assessment process, the impact of the project in the various phases has been reviewed and described, considering barrier effects, displacement and collision risks, which also includes an assessment of cumulative and transboundary effects. The impacts of barrier effects have been assessed for reference species with documented susceptibility to wind power facilities. The wind farm area is not located in an area with significant daily movements of birds, so that the impact of barrier effects is considered negligible for sea fowl in the area. The Triton wind farm is not considered to be an obstacle for seabirds flying between different foraging areas in the Southern Baltic. A report assessing the impact on bats and birds has been prepared (R.5 and R.6, respectively). The conclusions with regards to effects and impacts on bats and birds are laid out in sections 7.5 and 7.6 of the EIA, respectively. Mitigatory measures are described in more detail in Chapter 10 of the EIA.

- **BFN recommends installation of radar systems on turbines to reduce the risk of collision with migratory birds.**
  - OX2 has conducted several bird counts to survey the presence of birds, including migratory birds, in the planned area. The surveys have given a good picture of the

numbers of birds present. In the context of the environmental assessment process, the impact of the project in the various phases has been reviewed and described, taking into account barrier effects, displacement and collision risks. Mitigatory measures to reduce the adverse impacts on migratory birds are addressed in Section 7.6 and Chapter 10 of the EIA. OX2 will have a survey programme with measures including radar surveys, and bird observations are carried out to investigate the patterns of movement of migratory cranes and the degree of avoidance in the area of activity and the impact of the wind farm, including the effect of, for example, reduced rotor speed.

- **BFN considers that measures to reduce the impact on migratory bats should be taken.**
  - OX2 has conducted several bat counts to survey the presence of bats, including migratory bats, in the planned area. Mitigatory measures to reduce the adverse impacts on migratory bats are addressed in Section 7.5 and Chapter 10 of the EIA.

- **BFN draws attention to potential adverse impact on the populations of seabirds and considers that transboundary impacts in German waters should be surveyed.**
  - OX2 has conducted several bird counts to survey the presence of birds, including migratory birds, within the planned area. The surveys have given a good picture of the numbers of birds present. In the context of the environmental assessment process, the impact of the project in the various phases has been reviewed and described, taking into account barrier effects, displacement and collision risks, which also includes an assessment of cumulative and transboundary effects. A report assessing the impact on birds has been prepared (R.6). Conclusions regarding the effects and impacts on birds are presented in section 7.6 of the EIA. Mitigatory measures are described in more detail in Chapter 10 of the EIA.

- **BFN considers that the impact on porpoises of pulsatory sound and noise, including transboundary effects, should be described in the EIA. BFN further considers that account should be taken of German sound limit levels (sound exposure level 160 dB re 1µPa2s and maximum sound level 190 dB re 1µPa, measured at a distance of 750 metres from the sound source).**
  - The impact on marine mammals is described in more detail in section 7.4 of the EIA. This limit values are shown in section 6.1 of the EIA. The comparison between the limit values of different countries is shown in R.4 and section 7.4 of the EIA.

- **BFN points out that the effects on porpoises from sound and noise should be investigated and calls for mitigatory measures to reduce sound dispersion.**
  - OX2 has taken into account BFN's aspect regarding sound propagation. Mitigatory measures to reduce sound dispersion, such as soft start-up and double bubble curtains, are discussed in Chapter 10 of the EIA.

- **BFN notes that the impact on German Natura 2000 sites is expected to be small as a result of the long distance between the sites and the wind farm.**
  - OX2 has noted this statement.

1.2.7 Deutscher Segler-Verband (The German Sailing Federation)

- **The German Sailing Federation is concerned about restrictions on water sports/recreational craft in the area. Recreational craft do not pose a safety risk in the same way as larger ships. There is no reason to ban all vessel traffic in the wind farm area. The establishment of a safety zone should not limit recreational craft and there is a major difference in the risk of collision with wind turbines between large vessels and recreational craft. Cumulative effects if all wind farms prohibit boats from staying in the area should also be described.**
  - No restrictions are planned for recreational craft to sail in the wind farm, but a 50-metre safety distance to individual foundations will be recommended.

1.3 Poland

1.3.1 The Marine office in Szczecinie (The Marine Office)

- **The Marine Office states that as the planned project is located in an area of sea far from Polish waters, it is difficult to clearly indicate its impact on specific environmental aspects of these areas. However, it is not possible to rule out the possibility of the project having a transboundary impact on the environment, especially for migratory birds. The cumulative transboundary impact on migratory birds and migratory species should therefore be investigated.**
  - OX2 has conducted several bird counts to survey the presence of birds, including migratory birds, within the planned area. The surveys have given a good picture of the numbers of birds present. In the context of the environmental assessment process, the impact of the project in the various phases has been reviewed and described, taking into account barrier effects, displacement and collision risks, which also includes an assessment of cumulative and transboundary effects. A report assessing the impact on birds has been prepared (R.6). Conclusions regarding the effects and impacts on birds are presented in section 7.6 of the EIA. Mitigatory measures are described in more detail in Chapter 10 of the EIA. The identified bird species in the neighbouring Danish, Polish and German Natura 2000 sites and bird protection areas are not considered to be affected by the Triton wind farm because the area is not used as a foraging area for the identified species. The size and extent of the impact on migration is considered to be insignificant and the consequence is therefore negligible.

- **The Marine Office considers that cumulative effects with regard to areas designated for wind power facilities should be investigated.**
  - The aspect has been considered. Cumulative effects of the construction, operation and decommissioning phase related to other permitted or planned wind farms and other activities in the area are described in Chapter 8 of the EIA.

- **The Marine Office notes that the Świnoujście–Ystad route becomes longer when ships have to travel around the wind farm, which is a violation of the Convention on the Law of the Sea.**
  - The north-south route for ferry services between Sassnitz and Ystad, for example, will be kept wide enough to allow ship traffic to continue, which means that the route will not be extended.

- **The Marine Office points out that a corridor along the Baltic Pipe gas pipeline should be ensured in order for maintenance and potential repairs to be carried out.**
  - OX2 will not locate foundations or jack-up vessels closer than 500 meters from the Baltic Pipe gas pipeline during the construction, operations and repair work of the wind farm. OX2 will continue the dialogue with the owner of the Baltic Pipe to ensure safe and efficient coexistence in the area. Furthermore the number of intersections for the cables with the pipe will be minimized and at any intersection agreements will be settled with the owner of the Baltic Pipe.

- **The Marine Office points out that the drawings show that the design of the farm may be different, which means that there is uncertainty about layout with regard to shipping.**
  - The north-south route through the eastern part of the wind farm will be maintained.

- **The Marine Office points out that information about marine plans has been omitted from the consultation paper. The wind farm is located in an area designated as an existing shipping lane, which did not appear in Figure 29 "Wind farm and other infrastructure in the vicinity" on page 40 of the consultation paper.**
  - A five-kilometre long swathe will be kept open for the shipping route between Ystad and Świnoujście. Figure 1 of the EIA also shows that no foundations will be built within the relevant shipping lane.

- **The Marine Office considers that risk of collisions should be minimised during the construction and decommissioning phases, particularly with regard to ships involved in the construction/dismantling of the works and ships sailing to Polish ports, such as ships operating on the Świnoujście-Ystad route.**
  - During the construction phase, all marine operations will be monitored and coordinated by *a Marine Coordinator* to reduce the risk of collisions, for more details see section 7.10 of the EIA.

- **The Marine Office considers that if power lines cross shipping lanes, they should be located perpendicular to the route of the shipping lane and, where possible, buried in the seabed.**
  - This will be pursued.

- **The Marine Office considers that the construction and operation of the Triton wind farm and its export cables must not lead to the extension of the navigation routes to the Polish ports or to the disruption of the regular shipping services on the Świnoujście-Ystad and Świnoujście-Trelleborg shipping routes.**
  - The north-south route for ferry services between Sassnitz and Ystad, for example, will be kept wide enough to allow ship traffic to continue.

- **The Marine Office considers that a safety zone for a maritime area with a radius of 500 metres must not overlap with areas designated for shipping in the zone subdivision plan for Swedish marine areas around wind turbines. This applies in particular to areas with the Świnoujście–Ystad and the Świnoujście–Trelleborg shipping lanes.**
  - The required safety distance, the safety zone, will be determined on the basis of internationally accepted models.

1.3.2 The Polish Ministry of Infrastructure

- **The Polish Ministry of Infrastructure considers that account should be taken of the potential adverse effects of wind farms on maritime safety, particularly in view of potential for accidents to ships during the construction, operation and decommissioning of wind phases. Appropriate means and methods to minimise the negative impact of wind farms on safe navigation (in particular taking into account the provisions of the relevant international agreements and the regulations and recommendations of the International Maritime Organization (IMO) should be considered.**
  - The methodology for the nautical risk analysis that has been conducted is based on an established methodology for maritime risk analysis in the form of ISO standards 31000 and 31010, as well as the FSA methodology recommended by the IMO, where deemed possible. The IWRAP Mk2 (IALA Waterway Risk Assessment Program) is used to assess whether and how the wind farm may affect the likelihood of grounding and collision between ships and to estimate the likelihood of ships sailing or drifting into the wind farm.

- **The Polish Ministry of Infrastructure considers that the construction of the Triton wind farm is in breach of the Convention on the Law of the Sea. Alternative designs of the wind farm to take account of international shipping routes, in particular the Świnoujście-Ystad route, should be investigated. The measures needed to minimise hazards related to ship navigation should also be considered. The distance between the construction of the offshore wind farm and the shipping routes should be determined according to accepted international standards in this respect, taking into account the parameters of the largest vessels operating on the route in question; adopting simultaneous two-way traffic and taking into account the space required for these vessels to carry out emergency manoeuvres. Furthermore, it is recommended that a protection zone of 500 metres is established from the outer edge of the shipping corridor, in which no structures forming an offshore wind farm may be built along the corridor defined as described above.**
  - The north-south route for ferry services between Sassnitz and Ystad, for example, will be kept wide enough to allow ship traffic to continue. A nautical risk analysis has been carried out, see R.17 and Chapter 7.10 of the EIA. Figure 1 of the EIA shows the area in which wind turbines may be located and shows a five-kilometre traffic lane through the area.

- **The Polish Ministry of Infrastructure considers that a study should be carried out on the impact of offshore wind farms on marine communication and navigation systems (e.g. radar). In particular, the study should contain proposals for solutions to compensate for any adverse effects of wind farms on the above-mentioned systems.**

- Preliminary studies have been carried out on how the wind farm could affect radar and other communications equipment. An in-depth analysis will be carried out in connection with the final design and prior to construction. An evaluation of the actual impact will be carried out in the first years after construction and, if necessary, technical equipment will be installed to correct any interference it is causing.

- **The Polish Ministry of Infrastructure considers that installation work in the maritime route area should be completed as quickly as possible and that the environmental impact assessment should include estimates of the increase in fuel consumption and greenhouse gas emissions due to possible obstructions to vessel navigation caused by cable routing to the Triton wind farms.**
  - The construction of subsea cables through shipping lanes will be preceded by careful planning to avoid any disruption to maritime traffic.

- **The Polish Ministry of Infrastructure considers that measures to combat pollution in the event of an accident involving ships should be investigated.**
  - The wind farm will contain booms that can be deployed quickly and limit the spread in the wind farm. Wind farm vessels can also be used in this work.

- **The Polish Ministry of Infrastructure points out that the Triton wind farm is planned to be built at a location crossing the salt water inlet from the Danish Straits to the Baltic Sea. The Ministry of Infrastructure also considers that the impact on the stratification of the Baltic Sea and the oxygenation of its water (inflow of oxygenated water) should be investigated.**

  The effects of hydrographic changes are assessed to be very local, a report on hydrodynamic effects, containing modelling, has been developed, see R.12. The modelling shows that the hydrographic changes are limited, as described in more detail in section 7.2 of the EIA.

- **The Polish Ministry of Infrastructure considers that cumulative effects with the artificial island of Lynetteholm should be investigated.**
  - Considering the distance between Lynetteholm and the Triton wind farm, no cumulative effects are expected to occur.

- **The Polish Ministry of Infrastructure considers that the impact on the Baltic Pipe pipeline during the construction and operation phases should be described.**
  - OX2 will not locate foundations or jack-up vessels closer than 500 meters from the Baltic Pipe gas pipeline during the construction, operations and repair work of the wind farm. OX2 will continue the dialogue with the owner of the Baltic Pipe to ensure safe and efficient coexistence in the area. Furthermore the number of intersections for the cables with the pipe will be minimized and at any intersection agreements will be settled with the owner of the Baltic Pipe.

- **The Polish Ministry of Infrastructure points out that the draft Marine Spatial Plan for Sweden (*Proposal for Marine Spatial plans for Sweden of 14 March 2019*) states that operation of the ferry route Świnoujście–Ystad needs to be ensured. The proposal also states that the conditions for navigation in the designated area must be maintained and traffic safety, with sufficient room for manoeuvre, must be taken into account.**

- The north-south route for ferry services between Świnoujście and Ystad, for example, will be kept wide enough to allow ship traffic to continue.

- **The Polish Ministry of Infrastructure points out that the Swedish draft marine plan indicates that the relevant water area is designated for 'general use'. According to the proposed plan, this function is primarily intended to ensure space for still unknown use of the marine area. The 'general use' function does not directly exclude the possibility of building a offshore wind farm in the area covered by the function, but it appears that the allocation of the entire area to build an offshore wind farm runs counter to the concept of 'general use'. This may lead to the permanent development of the area which was identified during the spatial planning process as an area intended for future unknown uses and which should also be accessible to different users on the basis of shared use.**
  - Electricity production is a major source of general use in Sweden and Europe. The wind turbines occupy a relatively small area of the affected area. The shortest distance between the wind turbines in the wind farm is 1,200 metres, which allows for other uses in the area concerned.

1.3.3 The Polish Ministry of Climate and Environment

- **The Polish Ministry of Climate and Environment states that environmental impacts, such as noise during the construction phase, work that may affect the seabed, disturbance of sediments and barrier effects during the operational phase, need to be investigated.**
  - The aspect has been considered. The impact of the different phases is described in more detail in Chapter 7 of the EIA.

- **The Polish Ministry of Climate and Environment considers that cumulative effects with other planned wind farms affecting migratory birds should be investigated. In this context, the Ministry of Climate and Environment also draws attention to the marine development plans for Germany's exclusive economic zone in the North Sea and the Baltic Sea (which are being updated) and for Denmark's exclusive economic zone. The German plan identifies an area of corridors for bird movements, Rügen-Schonen and Fehmarn-Lolland, that are important for the movement of birds across Rügen to Sweden. The area is located south of the Triton wind farm and the Ministry of the Environment points out that the area can only be used for wind power production if suitable solutions are found to reduce the risk of collisions between birds and wind turbines.**
  - OX2 has carried out several bird counts to survey the presence of birds, including migratory birds, in the planned area. The surveys have given a good picture of bird presence in the area. In the context of the environmental assessment process, the impact of the project in the various phases has been reviewed and described, among other things, in terms of barrier effects, displacement and collision risks, which also includes an assessment of cumulative and transboundary effects, see R.6. Conclusions regarding the effects and impacts on birds are presented in section 7.6 of the EIA. Cumulative effects from other planned wind farms that affect migratory birds are further discussed in Chapter 8 of the EIA. Mitigation measures to reduce collisions, such as adapting the operation of

the wind turbines, will also be taken. The mitigation measures are described in section 7.6 and Chapter 10 of the EIA.

- **The Polish Ministry of Climate and Environment considers that cumulative effects with planned German wind farms in relation to seabirds and other species protected under Polish, Swedish, Danish and German Natura 2000 sites should be investigated.**
  - The aspect has been considered. Cumulative effects of the construction, operation and decommissioning phase related to other permitted or planned wind farms and other activities in the area are described in Chapter 8 of the EIA Mitigatory measures to reduce collisions such as, for example, adapting the operation of the wind turbines, will be taken. The mitigations are described in section 7.6 and Chapter 10 of the EIA.

- **The Polish Ministry of Climate and Environment considers that the impact on porpoises in Natura 2000 sites needs to be investigated, in particular what the impact will be during the winter months.**
  - The aspect has been considered. OX2 has conducted porpoise counts and the surveys have provided a good overview of the presence of porpoises in the area. A report assessing the impact on porpoises has been prepared (Reference report R.4.A). As the Triton wind farm is located in an area of low importance for porpoises, the overall assessment of avoidance behaviour of porpoises caused by underwater noise from impact piling is small for the Danish Straits population throughout the year. For the Baltic Sea population, the impact is expected to be negligible during the summer and small during the rest of the year. Mitigatory measures, such as soft start-up, minimise the risks of TTS and PTS in marine mammals. With the proposed mitigatory measures, porpoise sensitivity is considered to be moderate for the Baltic Sea population and small for the Danish Straits population. The size and extent of the impact are considered to be slightly negative since the influence distance is short and the time period for the surveys is relatively limited. The low density of porpoises in the area makes the risk of impact low. The impact on the Baltic Sea and Danish Straits populations is thus deemed to be small, as shown in more detail in section 7.4 of the EIA. The Natura 2000 area that is deemed to be affected by the project is the Sydvästskånes utsjövatten. Other Swedish Natura 2000 sites, as well as German, Polish and Danish Natura 2000 sites are not considered to be affected due to their long distance away, as detailed in section 11.2 of the EIA.

- **The Polish Ministry of Climate and Environment notes that the Triton wind farm is planned in the same area as Örsted's Skåne offshore wind farm and wonders whether both farms will be built.**
  - Two wind farms will not be built in the same geographical area.