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# Comments regarding possible environmental impacts of the planned wind farm Windanker

Swedish Pelagic Federation Producer Organization (SPF) represents all Swedish pelagic fishing vessels, including the herring and sprat fishery in the Baltic Sea. Our members account for approximately 90 percent of the total yearly fished volume in Sweden. We thank you for the opportunity to submit our comments.

According to WindSeeG §48.4, the planning permission may only be granted if the marine environment is not exposed to danger. Iberdrola indicates that Windanker will not cause any danger to the marine environment. Iberdrola even claims that the environmental impact assessment shows that the project could be summarized as “environmentally friendly”.

We believe that the impact analysis that we have seen has considerable deficiencies and that there is insufficient basis for a conclusion that the wind farm will not cause any danger to the environment.

The planned wind farm Windanker can potentially have negative effects on fish stocks caught by Swedish fishermen through e.g., underwater noise and vibrations from the turbines that is transmitted into the water, affecting local and regional current patterns, increased turbidity and sedimentation and electromagnetic fields around electric cables. The present knowledge about all these factors and their effect on the underwater fauna is severely lacking. SPF therefore repeat our comment from the initial consultation pointed out that it is of utmost importance that these factors and their cumulative effects on fish and other underwater fauna are carefully investigated in the Environmental Impact Assessment (EIA).

## Potential negative effects on fish stocks

Regarding potential cross-border effects on fish stocks Iberdrola notes in their reply that the condition of the herring stocks in the Baltic Sea cannot be attributed to a single aspect (e.g. the expansion of offshore wind farms). Instead, the herring stocks are affected by various processes in the Baltic Sea.

We totally agree with this opinion. Even though there are other factors influencing the fish stocks does not change the fact that the planned wind farm Windanker can potentially have a negative impact on e.g. herring. This should therefore be taken into account in an impact assessment and considered carefully. It cannot be taken as an argument for ignoring potential negative impacts from wind farms.

Iberdrola in their reply refer to Janssen and Schwarz (2015). The authors to the study conclude that there are various pressures that have potential impacts on spawning conditions in Greifswalder bodden. The anthropogenic activities that may affect spawning are analysed to assess their importance for recruitment success in comparison to other pressures which are not subject to MSP by-laws, e.g.

eutrophication. The results of the study confirm that MSP could potentially improve the management of certain fish stocks and help to close existing gaps in European fisheries policy. SPF does not consider it to be the same as to say that there are no possible negative effects by wind farms on fish stocks or that such effects should be neglected!

### Underwater noise

In our previous letter regarding possible cross-border effects of the planned wind farm, we pointed out, among other things, that underwater noise from the park may affect fish caught by our members negatively and that there is a lack of knowledge about the effects of underwater noise and vibrations from wind turbines on different species of fish.

In their reply to our concern, Iberdrola referred to a study by Wahlberg and Westerberg from 2005. Iberdrola concluded that it cannot be assumed that the operation of the windmill turbines leads to physical damage to the fish or negatively affects hearing. It is more likely that a masking effect is induced when it applies communication and orientation and that the fish becomes discouraged and that an escape reaction is triggered.

This study, rather than supporting any claim from Iberola, confirms exactly our concerns on effects on sprat and herring. Sounds loud enough to cause direct damage to the fish only occur during the construction (and possibly deconstruction) phase of the lifetime of the windmill. The negative effects of these loud sounds can be minimised and mitigated through technical measures. We want to clarify that our greatest concern is to the much less well-known potential negative effects from underwater noise and low-frequency vibrations from the windmills that are transmitted into the water column during their full lifetime of operation. As Walhberg and Westerberg conclude, communication and orientation of fish may be negatively affected, and they may avoid the noisy area (escape reaction). If the area is placed in or near important locations such as reproductive areas or where the fish is foraging for food, such avoidance behaviour from the fish may have severe negative effects on the local and possibly regional fish population.

The authors of the study also clearly state that “These conclusions must be viewed with great caution, however, as the existing data are prone to large uncertainties. Further studies on more detailed measurements of the sound-field and of fish behaviour around windmills are needed”. SPF firmly support the need for more and better knowledge.

Furthermore, the technology for offshore wind power has changed and developed since this report was published. The wind farms now planned are much higher and have more powerful turbines.

Moreover, different species might react differently, and it is well known that herring and sprat are among the species most sensitive to noise. Hence, we are not at all convinced that the fish will not be negatively affected by underwater noise generated from the wind farm Windanker and other wind farms in the adjacent area.

### Sedimentation

Sedimentation can occur during construction of the wind farm. It will then be temporary. However, turbulence in the water during the operational phase can cause sediment spreading and thus affect the ecosystem including the fish species caught by our members. We lack an analysis of these consequences.

### Impact on fishery

Under section 5.10.1, the commercial fishing in the area has been described based on data on the volume caught in 2018-2021 and the income from 2021. As fish stocks and thus fishing varies over time, we generally believe that a significantly longer period must be considered (it is reasonable to consider a period that is as long as the expected lifetime of the wind park) when describing fished volumes and fishing patterns. During the selected period 2018-2021, the herring stock in the western Baltic Sea has been greatly reduced and the period cannot therefore be considered representative. Our hope is that the stock will eventually recover and then the project area could be an interesting fishing area. It can therefore not be concluded, as it is done in the report, that the realization of project Windanker is not associated with any significant consequences for fishing.

Under section 5.10.1 it is also stated that it can be predicted that the growth conditions for certain fish species will be favourable in the wind farm and that it can function as protected rearing areas for young fish of commercial species and thus have positive consequences for commercial fishing. We would like to point out that what appeals to one species does not necessarily appeal to another. How favourable the environment is perceived may depend on fish species.

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