

Naturvårdsverket
Att. Richard Kristoffersson
richard.kristoffersson@naturvardsverket.se
registrator@naturvardsverket.se

Ärendenummer
NV-01416-22

Datum
2022-03-16

Response to notification in accordance with Article 3 of the Convention on Environmental Impact Assessment in a Transboundary Context, regarding installation and operation of Saare-Liivi 5 offshore wind farm in the Gulf of Riga, Estonia

BirdLife Sweden has been offered to comment on the necessity of further Swedish involvement in the Espoo Convention process regarding the proposed wind farm establishment in the Gulf of Riga, Estonia. The Gulf of Riga is a famous wintering area for e.g. many sea ducks, which means exceptional caution needs to be taken when planning a wind farm there. Because millions of birds cross over the Baltic Sea, regardless of national borders, the potential effects on birds are indeed transboundary. Hence, Sweden should ask to participate in the environmental impact assessment procedures as a potentially affected country.

Potential effects on birds

There are robust evidence for the fact that e.g. red-thorated diver, long-tailed duck, and black scoter avoid the proximity of offshore wind turbines¹. The red-thorated diver is regarded as particularly vulnerable in this respect, shown by a synthesis of studies based on different analytic methods². Avoidance is most evident up to 5 kilometers from offshore wind turbines, but a significant effect may exist up to 10–15 kilometers distance.

Site avoidance results in a functional loss of habitat. For long-lived species with "slow" reproduction systems, even a minor mortality increase among adult individuals – e.g. as a consequence of forced avoidance of favourable feeding areas – may lead to a significant effect on populational level. Telemetric studies on red-throated divers show that this species covers large distances during winter³. Therefore, barrier effects may also be an issue to consider.

Large numbers of nocturnally migrating birds may in certain weather conditions (particularly foggy nights) be attracted to illuminated constructions⁴, such as lighthouses, skyscrapers, towers, wind turbines, oil rigs etc. [Extreme cases report e.g. 10 000 longspurs (*Calcarius lapponicus*) in Kansas 1998⁵, and >12 000 birds in Wisconsin 1963⁶.] Even if studies of migrating birds have concluded that they are able to avoid collisions to a large extent, "mass collisions" still occur on a regular basis (known also from the bridge between Sweden and Denmark). The wind turbines height, as well as the length and mortal speed of the rotor blades, increase the danger compared to other illuminated constructions. Significant mortality risk is evident even without illumination. It should be stated that establishment of wind farms in the immediate passage of millions of birds is clearly a breach of the precautionary principle.

¹ Fox A & Petersen IK. 2019. *Offshore wind farms and their effects on birds*. Dansk Ornitologisk Forenings Tidsskrift 113: 86–101; <https://pub.dof.dk/artikler/454/download/doft-113-2019-86-101-havvindmoeller-og-deres-paavirkning-af-fugle>.

² Heinänen S et al. 2020. *Satellite telemetry and digital aerial surveys show strong displacement of red-throated divers (*Gavia stellata*) from offshore windfarms*. Marine Environmental Research 160: 104989; <https://doi.org/10.1016/j.marenvres.2020.104989>.

³ Dorsch M et al. 2019. *DIVER – German tracking study of seabirds in areas of planned Offshore Wind Farms at the example of divers*. Final report on the joint project DIVER, FKZ 0325747A/B, funded by the Federal Ministry of Economics and Energy (BMWi) on the basis of a decision by the German Bundestag; https://www.bioconsult-sh.de/site/assets/files/1820/bmwi-fkz0325747a_b_final_150dpi.pdf.

⁴ Longcore T et al. 2012. *An Estimate of Avian Mortality at Communication Towers in the United States and Canada*. PLoS One 7(4): e34025.

⁵ Manville AM. 2000. *Avian mortality at communication towers: background and overview*. I Evans & Manville, editors. Proceedings of the workshop on avian mortality at communication towers; 1–5.

⁶ Kemper C. 1996. *A study of bird mortality at a west central Wisconsin TV tower from 1957-1995*. The Passenger Pigeon 58(3): 219–235.

Environmental Impact Assessment

The planned Environmental Impact Assessment (EIA) should include the following:

- The EIA must be based on the birds that use (and can be predicted to use) the area, and assessment of the occurrences/effects should be lead by up-to-date knowledge on risks for birds in relation to offshore wind farms. The proposed surveys from vessel and plane may give enough information, if performed thoroughly. However, when screening for important feeding areas for breeding birds, telemetric studies with gps transmitters usually provide data of higher value. In-depth and prolonged radar studies must be performed to cover the magnitude, diversity, and variation of the massive bird (and possibly bat) migration. Analyses of radar data for birds/bats must be combined with weather data to understand the migration patterns.
- The EIA should evaluate an aggregated avoidance effect, which leads to a functional habitat loss, of the proposed wind farm together with other established or potential wind farms in the region. The importance of barrier effects, likely to be most substantial in connection to local movements during winter, should also be included. Finally, the effects of increased vessel traffic connected to the wind farm should be assessed.
- After the two assessment steps above, it is of great importance to evaluate the cumulative effects from the wind farm(s) together with other activities, such as shipping and fishing, affecting bird populations being present in the wind farm area.

Protective measures

- In order to minimize mass collision events, the illumination lights of the wind farm must be adapted in the best possible way to avoid attraction of birds.
- For birds passing in daylight, the possibility of triggering a stronger avoidance effect (e.g. by painting one or more of the rotor blades^{7,8}) should be investigated and implemented.
- Implementation of instantaneous shut-down of wind turbines under specific conditions has been shown to be an effective measure to avoid collisions⁹. By analyses of weather data and migration patterns with radar, high-risk events can be identified when large concentrations of birds occur, which should trigger immediate shut-down. This technique has already been tested in The Netherlands¹⁰, and must be developed further within the offshore wind industry.



Daniel Bengtsson, Head of Conservation
Mobile: +46 70 515 45 33
E-mail: daniel.bengtsson@birdlife.se

⁷ Stokke BG *et al.* 2020. *Effect of tower base painting on willow ptarmigan collision rates with wind turbines*. Ecology and Evolution 10(12): 5670–5679; <https://doi.org/10.1002/ece3.6307>

⁸ May R *et al.* 2020. *Paint it black: Efficacy of increased wind turbine rotor blade visibility to reduce avian fatalities*. Ecology and Evolution 10(16): 8927–8935; <https://doi.org/10.1002/ece3.6592>

⁹ de Lucas M *et al.* 2012. *Griffon vulture mortality at wind farms in southern Spain: distribution of fatalities and active mitigation measures*. Biological Conservation 147: 184–189.

¹⁰ <https://www.youtube.com/watch?v=mKSczf8NC4>