

Authority Services

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Swedish Environmental Protection Agency
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Finland's response to the notification in accordance with Article 3 of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) for the planned offshore wind farm "Herkules" in Sweden's exclusive economic zone

The Finnish Environment Institute acknowledges that Finland has received the notification dated 5 April 2023 and the consultation document from Sweden. The notification is based on Article 3 of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), and it concerns an environmental impact assessment (EIA) procedure of the planned offshore wind farm, "Herkules" (hereinafter "**the Project**"), in the Baltic Sea in Sweden's exclusive economic zone (EEZ) (hereinafter "**the Project Area**").

The developer, Simply Blue Group, plans to investigate the possibility to establish the Project in the Project Area, approximately 60 kilometres southeast of the island Gotska sandön, Sweden. The Project Area is 1 078 square kilometres and sea depth varies between 107–224 metres. The maximum total height of the wind turbines is estimated to be 360 metres. The turbines are planned to be anchored with floating foundations, which are moored to the seabed. The Project is estimated to consist of up to 121 wind turbines with a total installed capacity of 2,4 GW and an expected annual production of about 12,7 TWh.

The individual turbines are planned to be coupled via an internal cable network that transmits the produced energy to one or more offshore substations (OSS) where the electricity will be converted to a high voltage and transmitted to shore through one or more marine cables that are coupled to a land cable and in extension, the Swedish transmission grid. Another alternative is to connect the Project's OSSs to one of the offshore connection points proposed by Svenska kraftnät, located on the border between the territorial water's boundary and Sweden's EEZ.

Consultation in Finland

According to the amended Finnish Act on Environmental Impact Assessment (252/2017), the Finnish Environment Institute is the competent authority and responsible for information and



consultation tasks under the Espoo Convention. The Swedish Environmental Protection Agency requested an indication whether Finland intends to participate in the EIA procedure of the Project, comments concerning the scope for the assessment of the environmental impacts of the Project in Finland, and comments from the public in Finland.

The public and the authorities were given the opportunity to comment on the consultation document from 12 April to 12 May 2023, which was available on the website of Finland's environmental administration and on the website of lausuntopalvelu.fi. Statements were also asked from relevant stakeholders. The following authorities, agencies, and environmental organisations in Finland submitted their statements: the Regional Council of Southwest Finland, the Government of Åland, the Finnish Transport Infrastructure Agency (Väylävirasto), the Finnish Transport and Communications Agency (Traficom), the Finnish Meteorological Institute (FMI), and the Finnish Professional Fishermen's Association (SAKL), BirdLife Finland, the Finnish Nature Panel, and the Ministry of Transport and Communications.

Based on the received statements and reflecting its own views, the Finnish Environment Institute states that Finland will participate in the EIA procedure of the Project.

Remarks received during the consultation

The Finnish Environment Institute has made a summary of the received statements in Finland. The original statements are enclosed to this letter.

The Regional Council of Southwest Finland has no remarks, as the Project does not conflict with its regional land use planning or other planning.

The Government of Åland states that there is no need for Åland to participate in the EIA procedure. The Project's significant direct impacts are unlikely based on the far distance.

The Finnish Transport Infrastructure Agency (Väylävirasto) considers it reasonable for Finland to participate in the EIA procedure. Large-scale offshore wind farms, and especially offshore wind farms located close to each other, if constructed, could have a significant impact on operations of navigation in Finland in terms of its security and smoothness. Väylävirasto highlights that it is important to take into consideration the routes for navigation outside the established fairways and route allocation systems. Potential combined impacts of offshore wind projects on navigation should be comprehensively investigated in the planning. Väylävirasto considers it important that the responsible icebreaking authorities in Sweden and Finland are consulted on offshore wind projects outside territorial waters, so that icebreaking cooperation and routes for winter navigation, other than open water routes, are considered in the planning.

The Finnish Transport and Communications Agency (Traficom) considers it reasonable for Finland to participate in the EIA procedure. Considering the Project's location and other offshore wind projects planned in the vicinity, the projects may have impacts on navigation to and from Finland. Large-scale offshore wind farms, and especially offshore wind farms located close to each other, if constructed, could have a significant impact on navigation in terms of its security and smoothness. Traficom states that it is important to take into consideration the routes used for navigation outside the established fairways and route allocation systems. Potential combined impacts of offshore wind projects on navigation should be comprehensively examined in the planning. The Project is located from the Finnish perspective in a southerly sea area, where



icebreaking can occur in winter. Traficom considers it important that the icebreaking authorities in Sweden and Finland are consulted on similar projects outside territorial waters, so that icebreaking cooperation and routes, other than open water routes, for winter navigation are considered in the planning.

The Finnish Meteorological Institute (FMI) considers it reasonable for Finland to participate in the EIA procedure. FMI states that the Project impacts marine observations in the area and makes it especially difficult to carry out autonomous observations, and also observations from a vessel in the vicinity. FMI has freely drifting Argo buoys in the Gotland Deep. The use of the buoys and other autonomous marine measuring instruments in the vicinity become more difficult when the Project is constructed. FMI states that the Project has an impact on wind conditions and, consequently, on wave, current and sea conditions. The extent of these impacts and their possible consequences for the marine ecosystem should be examined. FMI has no comments on the weather radar network.

The Finnish Professional Fishermen's Association (SAKL) considers it necessary for Finland to participate in the EIA procedure and follow its progress. The Bothnian Sea, the Bothnian Bay and the main basin of the Baltic Sea are important for Finland's fishing industry. SAKL states that the Ministry of Agriculture and Forestry and the Natural Resources Institute Finland (Luke) can provide more information on catch monitoring and VMS. SAKL states that the Project's impacts on fisheries in the main basin of the Baltic Sea must be investigated and the information obtained must be critically examined. The long-term importance of the Project Area for commercial fisheries needs to be assessed. The impacts of the Project and cable lines need to be investigated, especially concerning migratory fish. It is important that cumulative impacts of the Project and other planned projects are examined. SAKL highlights that due to lack of resources or other reasons, there is a risk that environmental authorities will not keep up with the monitoring of projects. Offshore wind construction can be a risk factor for fish stocks, marine life and fisheries in the Baltic Sea. The Baltic Sea is already under severe pressure (e.g., eutrophication, contaminants, maritime traffic, other hydraulic engineering, conflicts and climate change).

BirdLife Finland does not consider it necessary for Finland to participate in the EIA procedure. BirdLife Finland highlights the need for comprehensive bird surveys and the consideration of Arctic bird migration in the EIA procedure. BirdLife Finland states that the Project Area is deep and located in the middle of the sea, far from known important nesting and feeding areas for birds and is in line with the main direction of bird migration. However, it is likely that a number of Arctic waterbirds and wetland birds migrate through the Project Area. BirdLife Finland states that it is important to carry out comprehensive bird surveys in line with the standard developed in Germany. In addition, BirdLife Finland considers it important to carry out a thorough assessment of the impact of the Project on birds and wildlife, individually and in combination with other projects.

The Finnish Nature Panel considers that Finland should participate in the EIA procedure. Finnish Nature Panel states that especially in marine areas, habitat impacts extend beyond national territorial waters. Offshore wind power is increasing, which increases the need to better understand, and take into consideration, impacts on nature, including cumulative impacts. The Finnish Nature Panel states that the consultation document reviews the natural values of the Natura 2000 sites in the area and assesses that the Project's potential impacts on birds, bats, fish, marine mammals and benthic fauna should be examined. In addition, the Finnish Nature



Panel considers that the consultation document reviews potential impacts on nature in a rather general way. It is important that the EIA aims a comprehensive assessment of the Project's direct and indirect impacts on nature and that adequate measures are proposed to increase knowledge also during the operation. The EIA should address at least the following impacts on nature, which may extend into Finnish territorial waters:

1. The Project's impacts on the ability of sea ducks to move in and out of feeding areas.
2. The Project's impacts on open sea birds (e.g., auks). These species are generally not well known and may move over large areas.
3. In the light of current knowledge, a risk of birds colliding with turbine blades is considered to be low in the open sea, and birds are known to avoid power plant sites. Any potential cumulative impacts with other planned projects should be investigated. A potential risk of marine mammals colliding with vessels in the area during construction and maintenance should be addressed.
4. Potential impacts on fish stocks, especially migratory fish (e.g., salmon and eel). Mitigation measures should be reviewed in more detail, especially concerning potential cumulative impacts.
5. The consultation document provides that wind turbines can have an impact on current conditions, and that this will be further investigated. Taking into consideration possible cumulative impacts is also important. For example, wind wake effects from large-scale offshore wind farms have been found in the North Sea to cause changes in seawater stratification, reduced currents and lower seabed oxygen levels in areas where oxygen levels were already low.¹ The influence of wake currents can cause changes in benthic biota and occurrence of coalescing algae. The impact can extend up to tens of kilometres from the Project and therefore combined impacts with other wind farms planned in the area should be assessed.

The Finnish Nature Panel states that the EIA programme is described at the headline level. A separate section could be added for measures to avoid, minimise and possibly compensate for the harm caused. Potential transboundary impacts could be presented under a separate heading: what direct, indirect or cumulative impacts, if any, the project may have, extending into Finnish territorial waters, taking into consideration other planned wind projects and human activities. The Finnish Nature Panel states that a study for wind wake effects could be mentioned under section "Alueen merivirtoja ja suolapitoisuutta koskevien mallitietojen kehittäminen". Water turbidity should be considered in a more comprehensive way. The risk to marine life from the possible resuspension of sediment-bound contaminants, toxins and nutrients during the different phases of the Project should be assessed. In addition, the extent to which noise from the Project will be transmitted through chains and metal structures should be investigated. The Finnish Nature Panel proposes to add to the collision risks that traffic may pose a collision risk to marine mammals during construction and maintenance.

The Ministry of Transport and Communications states that Finland should participate in the EIA procedure. The green transition in the energy sector makes offshore wind an interesting

¹ Daewel, U., Akhtar, N., Christiansen, N. & Schrum, C. 2022. Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea. *Communications Earth & Environment*, 3:292. <https://doi.org/10.1038/s43247-022-00625-0>, and Floeter, J., Pohlmann, T., Harmer, A. & Möllmann, C. 2022. Chasing the offshore wind farm wind-wake-induced upwelling/downwelling dipole. *Frontiers in Marine Science*. <https://www.frontiersin.org/articles/10.3389/fmars.2022.884943/full>

and currently a cost-competitive way to produce renewable clean energy. The increase in wind power construction both in territorial waters and in EEZs may have a significant impact on navigation. It is important for Finland's foreign trade that navigation is secure and smooth all year round. Offshore wind farms may have the impact of lengthening vessel routes, which may lead to increased fuel consumption and emissions. Offshore wind farms can have an impact on the operation of radar systems. The impacts of an individual offshore wind farm are often limited, but the impacts on navigation are increased, if farms are constructed close to each other or close to established fairways and routes for navigation. Potential combined impacts of offshore wind projects on navigation in the region should be comprehensively assessed. The Ministry of Transport and Communications states that there are no other wind power projects in the immediate vicinity of the Project, but another large-scale offshore wind farm is planned in Sweden's EEZ, about 14 kilometres northwest from the Project. Although the Project is located in a southerly sea area, there may be a need for icebreaking in winter. Therefore, the planning must take into consideration the conditions for winter navigation and possible routes that differ from open water routes.

Conclusion

Finland notes that the planning of offshore wind farms in the Gulf of Bothnia, the Bothnian Bay, the Bothnian Sea and the Baltic Sea has increased both in the sea areas of Sweden and Finland. Therefore, the Finnish Environment Institute considers it reasonable for Finland to participate in the EIA procedure of the Project. The EIA documentation must properly address the Project's transboundary impacts on Finland. The consultation materials do not include transboundary impacts at sufficient level from Finland's perspective. In this respect, The Finnish Environment Institute wishes that the EIA documentation includes a separate chapter for transboundary impact assessments from Finland's perspective with a specific regard given to the provided remarks. Finland considers it as a high priority to examine and assess cumulative impacts to the extend as possible in the EIA. Although impact can be minor or ecologically non-significant for an individual wind farm, cumulative impacts of several wind farms in the region can be ecologically significant.

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and its Protocol on SEA

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This document has been electronically signed.



Appendices	Received statements in Finland
Distribution	Swedish Environmental Protection Agency
For information	Swedish Environmental Protection Agency, Richard Kristoffersson Ministry of the Foreign Affairs Ministry of the Environment Regional Council of Southwest Finland Government of Åland Finnish Transport Infrastructure Agency (Väylävirasto) Finnish Transport and Communications Agency (Traficom) Finnish Meteorological Institute (FMI) Finnish Professional Fishermen's Association (SAKL) BirdLife Finland Finnish Nature Panel Ministry of Transport and Communications

