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## **Statement regarding Espoo Convention pursuant to articles 4 and 5 regarding the planned offshore wind farm "Elwind" in Estonian EEZ**

The Swedish Meteorological and Hydrological Institute (SMHI) acknowledges the opportunity given by the Estonian Ministry of Climate to supply a view on the planned project and its environmental impact assessment.

In the Baltic Sea, both in Swedish, Estonian, Latvian and other countries' sea areas, a large number of wind farms are planned. Although the impact on the marine environment from each individual facility may be considered small, the combined consequences can be significant.

During the construction and decommissioning of wind turbines, the abiotic factors in the marine environment are affected in the form of turbidity of the water, increased amount of nutrients, spread of possible toxins from the bottom material, as well as more ship transports.

In addition to this, the effect of wind turbines on wind, waves and ocean currents must also be considered. These effects are not only local and for a short period of time, such as when drilling for foundations or laying cables, but affect larger areas during the entire operational phase of a wind farm.

### **SMHI – Sveriges meteorologiska och hydrologiska institut**

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For example, wind farms change the mixing in the surface layer of the sea<sup>1,2</sup>, which is important for the biological production near the sea surface.

The increasing planning of wind farms in the Baltic Sea can lead to cross-border environmental effects, the solution of which lies in international cooperation. Therefore, SMHI believes that a superior and multinational marine council with an overview of the entire Baltic Sea environment should be given the opportunity to map the cumulative environmental effects of all projects. Such an overall mapping would mean that cross-border impacts can be better considered in the Baltic Sea countries' decisions about individual facilities in the relevant areas.

Director of the Department of Community Planning Services Magnus Rödin has decided on this matter prepared by Maria Karlberg.

For SMHI

Magnus Rödin  
Director of the Department of Community Planning Services

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<sup>1</sup> Christiansen N, Daewel U, Djath B and Schrum C (2022) Emergence of Large-Scale Hydrodynamic Structures Due to Atmospheric Offshore Wind Farm Wakes. *Front. Mar. Sci.* 9:818501. doi: 10.3389/fmars.2022.818501

<sup>2</sup> Daewel U, Akhtar N, Christiansen N, and Schrum C (2022) Offshore wind farms are projected to impact primary production and bottom water deoxygenation in the North Sea. *Nature Comm. Earth & Environ.* doi: 10.1038/s43247-022-00625-0

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