

CONSULTATION DOCUMENT – ENGLISH SHORT VERSION

Consultation under Chapter 6 of the Environmental Code for Humletorp Wind Farm

Årjäng municipality, Värmland County



2024-01-12

1 Introduction

Applicant	Fornybar by Eolus Hydro Rein AB, reg.no 559251-4003
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Further information	Further information on the project is available in Swedish on the website www.eolusvind.com/humletorp

This document is part of a consultation under Chapter 6 of the Swedish Environmental Code. It is a short version of a consultation document in Swedish,¹ and it has been prepared as it has come to the applicant's knowledge that some residents in the vicinity of the project area do not speak Swedish.

This document will be distributed to anyone who requests it. Oral information about the project in English, can be obtained from the contact persons stated above.

2 The Humletorp Wind Farm

Fornybar by Eolus Hydro Rein AB intends to apply for a permit under the Swedish Environmental Code for a wind farm in Årjäng municipality in Värmland County. The project is called Humletorp wind farm (Sw. vindkraftspark Humletorp) and it is intended to include up to 12 wind turbines. A wind farm of this size can produce green electricity of up to around 289 GWh per year, which is equivalent to the annual domestic electricity needs of almost 55,000 households. The project area is indicated in Figure 1 below. The indicated wind turbine positions are just examples.

¹ Available on: <https://www.eolusvind.com/wp-content/uploads/2023/11/Samradsunderlag-Humletorp-231115.pdf>.

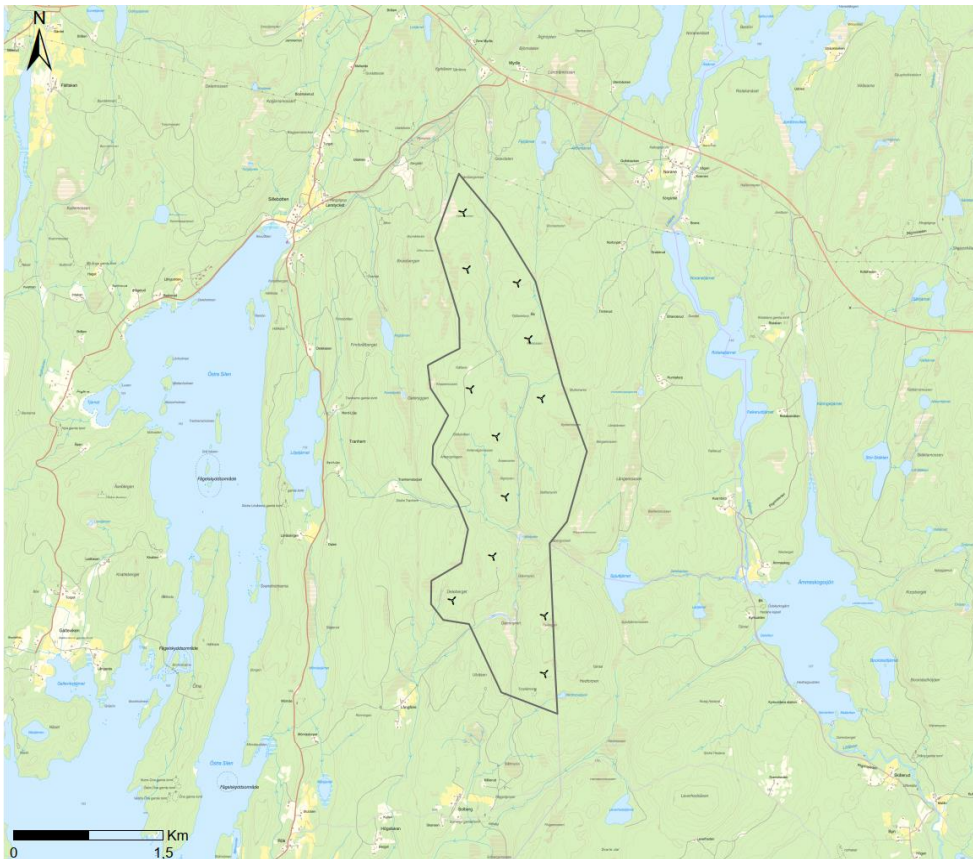


Figure 1. Project area and example layout.

3 The consultation process

The construction and operation of a wind farm requires a permit under the Swedish Environmental Code. The permit application must be preceded by a consultation process.

The purpose of the consultation process is to obtain opinions and information from, amongst others, local residents, those that are likely to be particularly affected, organisations, associations, municipalities and authorities. These comments will be considered in the environmental impact assessment (“EIA”), which will be part of the permit application. Comments received during the consultation process will also be attached to the application documents.

If you have any comments, you can submit them via a form on the website www.eolusvind.com/humletorp, or by e-mail to humletorp@eolusvind.com (please state *Consultation Humletorp* in the email’s Subject field). You can also send a letter to:

Eolus Vind AB
Ref. Consultation Humletorp
Carlsgatan 12A
211 20 Malmö

We wish to receive your comments on **16 February 2024**, at the latest.

4 Short description of the planned activities

The Humletorp wind farm is intended to include up to 12 wind turbines, each with a maximum total height of 300 meters. During the work with the EIA, it will be decided, based on for example wind conditions and conflicting interests, in which parts of the project area the wind turbines will be erected. Precise positions and turbine models will be decided after the permitting process.

The wind farm includes certain ancillary activities, such as power lines, roads to and within the project area, service buildings, crane sites, substations, logistics areas and parking areas. This may involve, e.g., the construction of hard surfaces and may affect areas outside the project area.

Wind turbines today have a technical lifetime of about 35 years. When a wind farm is decommissioned, the turbines are taken down and land is restored in consultation with landowners and the authorities. This will be described in the EIA.

5 Location

The project area is located in a hilly landscape with several large lakes. The project area consists mainly of production forest with small water courses, bogs and marshes and small forestry roads. There are 11 residential buildings and holiday homes within 1 km of the project area. The closest villages are *Sillebotten* and *Norane*, both within a distance of about 1.4–1.5 km from the project area. The nearest wind farm is *Årjäng SV*, about 2.1 km northwest of the project area.

The choice of location depends on, among other things, wind conditions, the possibility to transmit electricity to the grid, and municipal planning.

- According to the wind mapping MIUU² (Swedish Energy Agency), the annual average wind speed in the project area is 7.0–8.0 m/s, at an altitude of 140 metres above land, which makes the area suitable for wind power production.
- Some existing roads are available within and outside the project area. This reduces the need to construct new roads.
- The project area partly overlaps with an area that has been identified as suitable for wind power in the municipal land use plan (*Sw. översiktsplan*).

The EIA will include a description of alternative locations and the reasons why Humletorp is the chosen location.

6 Environmental impact

6.1 Introduction

The environmental impact of the wind farm will be finally assessed and presented in the EIA. The following is an outline and preliminary description of the impact.

² Vindbrukskollen 2023, *STEM Vinddata MIUU*. Height 140 m, annual average wind.

6.2 Areas of national interests and protected areas

Some areas constitute national interests under Chapters 3 and 4 of the Environmental Code. The project area is not located in an area designated as a national interest, but there are several national interests in the proximity. Within 13 km, there are areas of national interests for outdoor recreation, nature conservation, infrastructure (traffic) and wind energy.

There are six national interests for outdoor recreation within 13 km of the project area. The closest national interests extend over Lake *Östra Silen* and *Harnäsforden*. These include birdwatching areas, nature and culture trails, bathing areas and camping. The main impact is deemed to be an altered landscape image.

Within 10 km of the project area there are several nature preservation areas, nature reserves and Natura 2000 sites, as well as a small water protection area.

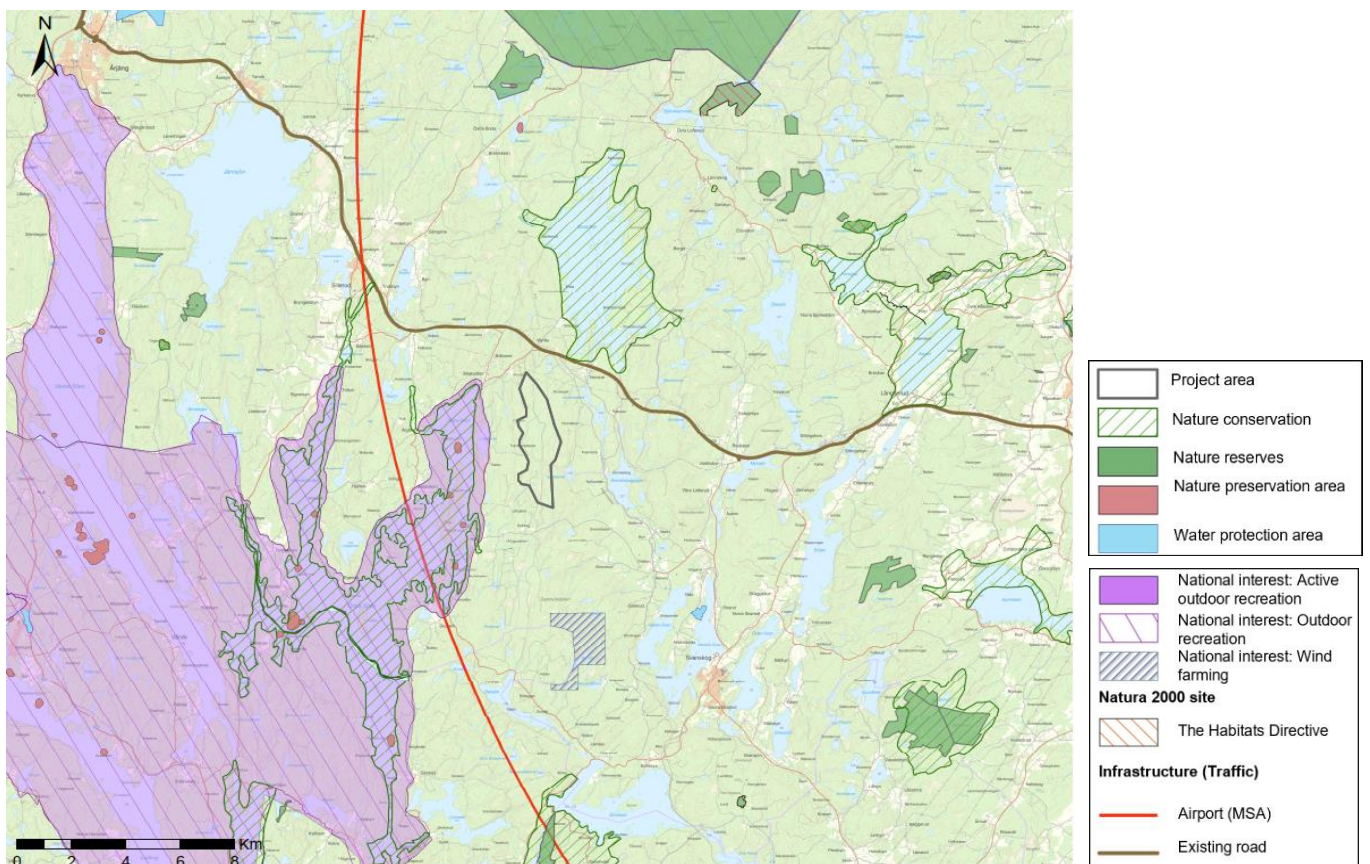


Figure 2. National interests and protected areas in the vicinity of Humletorp wind farm.

6.3 Human health and living environment

6.3.1 General

Wind turbines' impact on human health and the living environment is mainly noise, light and shadows, and the visual impact on the landscape. For Humletorp wind farm, the following can be noted regarding these matters.

6.3.2 Noise

Noise from wind farms occurs during construction, operation and decommissioning. The wind farm will comply with the Swedish Environmental Protection Agency's general guidelines.³ According to these, an equivalent sound level of 40 dB(A) should not be exceeded at nearby homes during the operational phase. During the construction and decommissioning phase, higher noise levels are allowed. Regardless of the wind farm's final layout in the project area, noise levels will not exceed the guideline values.

Low-frequency noise is sound in the frequency range 20-200 Hz. The Swedish Public Health Agency has published non-binding guidelines for low-frequency noise levels indoors.⁴

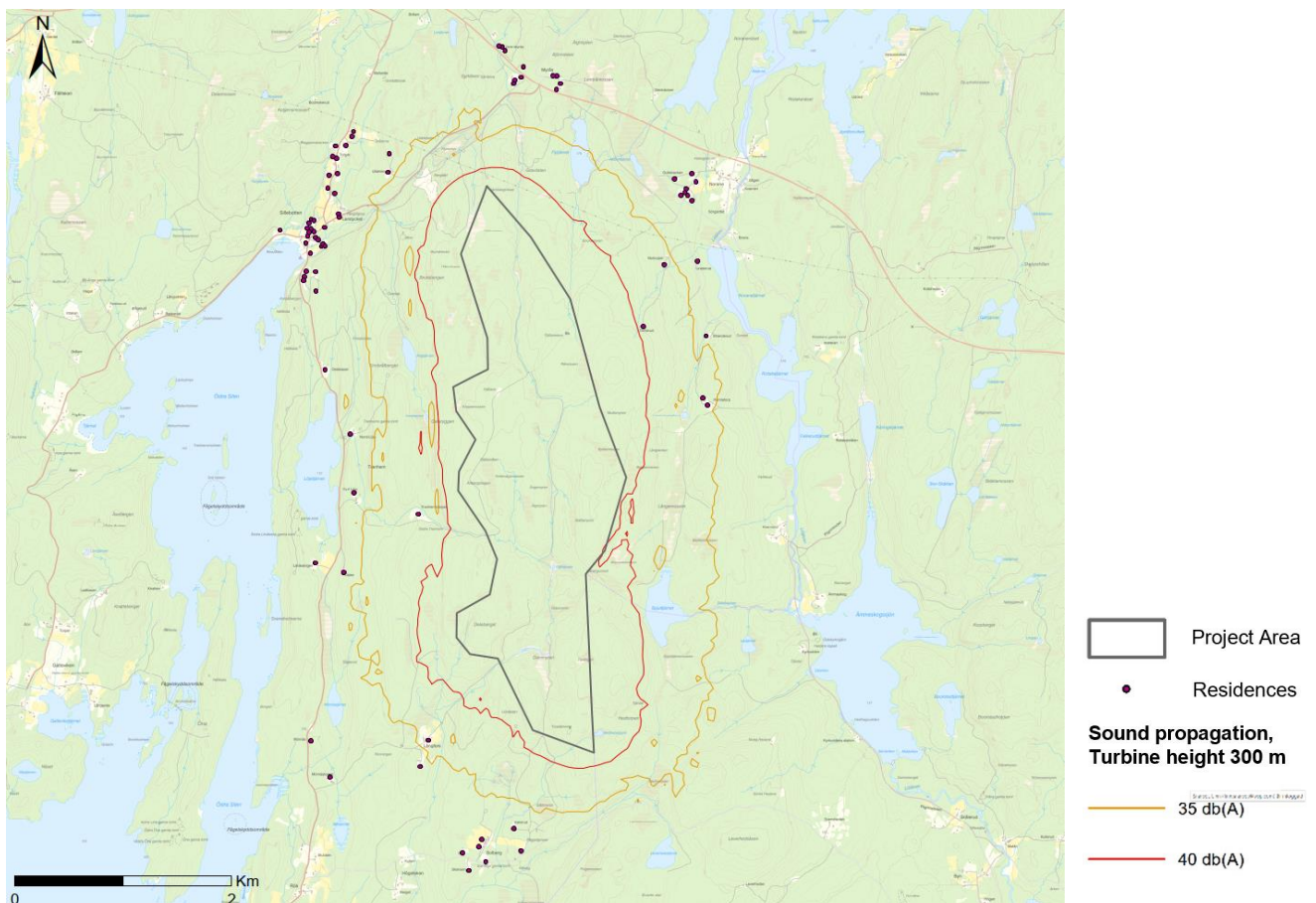


Figure 3. Sound propagation based on example layout with 300 metre high wind turbines. Orange line illustrates 35 dB(A) limit and red line illustrates 40 dB(A) limit.

6.3.3 Light, moving shadows and other visual impact

The wind turbines will be equipped with lights in accordance with applicable regulations on aviation safety.⁵

³ Swedish Environmental Protection Agency 2004, *Naturvårdsverkets allmänna råd om buller från bygglplatser*, NFS 2004:15, and Swedish Environmental Protection Agency 2020, *Vägledning om buller från vindkraftverk*.

⁴ The Public Health Agency of Sweden 2014, *Folkhälsomyndighetens allmänna råd om buller inomhus*, FoHMFS 2014:13

⁵ Swedish Transport Agency 2020, *Transportstyrelsens föreskrifter och allmänna råd om markering av föremål som kan utgöra fara för luftfarten*, TSFS 2020:88.

To the extent that moving shadows at residential and holiday homes exceed the applicable guideline values of 8 hours/year or 30 minutes/day, shadow control equipment will be installed on the turbines causing this.⁶

The wind farm is deemed to have high visibility from surrounding lakes and terrain. The project area is located 215–240 m above sea level. The area is surrounded by lakes and the land in the area consists mainly of forest. Approximately 2 km east of the project area is Lake Ämmeskogssjön, which is subject to landscape protection under the Nature Protection Act (1964:822) (Sw. *Naturvårdslagen*). The Act has been repealed but the protection is still effective.⁷ Visual impact on the landscape will be assessed in the EIA.

6.4 Natural values

There are natural values within and around the project area. A natural value inventory will be carried out in the project area and reported in the EIA.

There are several bogs and mosses in the project area. In the project area there are seven small watercourses and two small lakes. Measures will be taken to prevent impact on water flow and to prevent the risk of contamination of water.

6.5 Birds and bats

Birds and bats are the animal groups most sensitive to wind farms. Birds can be affected through collision, habitat loss or barrier effects. All types of birds suffer a risk to collide with wind turbines. The risk is generally bigger for inhabitant birds than for those that only pass by in active flight.⁸

Also bats can collide with the rotor blades. Species that fly above tree-top height are called high-risk species. The most important measure to protect bats is to adjust the operation of the wind turbines, e.g. keeping them stationary, during the times and weather conditions when bats are most active.⁹

The EIA will include an assessment of impact on birds and bats.

6.6 Cultural heritage values

There are no areas of national interest for cultural heritage conservation within 10 km of the project area. However, road 523 extends along the western side of the project area and part of the road is designated as a cultural-historical road.¹⁰ There are also some ancient and cultural-historical remains in the project area. A cultural environment inventory will be carried out in the project area and the results will be presented in the EIA.

⁶The National Board of Housing, Building and Planning 2012, *Vindkraftshandboken: Planering och prövning av vindkraftverk på land och i kustnära vattenområden*.

⁷The National Board of Housing 2023, *Landskapsbildsskydd*.

⁸Vindval 2017, *The effects of wind power on birds and bats – an updated synthesis report 2017*.

⁹Vindval 2017, *The effects of wind power on birds and bats – an updated synthesis report 2017*.

¹⁰County Administrative Board of Värmland, *Kulturhistoriska vägar, Road 523, section Intakan – Rök*.

6.7 Risk and safety

During certain weather conditions, there is a risk of ice build-up on the wind turbine blades, which can cause so called ice throws. The risk of this happening is limited but warning signs will be erected at suitable distances from the turbines.

Fires in wind turbines are uncommon, but to further reduce the risks, the turbines will be regularly serviced and equipped with lightning conductors and fire extinguishers.

The turbines will be equipped with automatic systems that switch off the turbines in case of too high wind speeds or imbalance.

7 Local benefits

A wind farm brings local benefits through work opportunities, especially during the construction phase, and enhanced local services through increased consumption of local products.

“Wind money” (Sw. *vindpeng*) is a form of financial support from the wind farm operator to the community where the wind turbines are located. It is distributed annually during the wind farm’s lifetime. The amount depends on the number of wind turbines and their electricity production.

For Humletorp wind farm, the support amounts to 0.5% of the gross revenue. It can be distributed in different ways. Usually the annual sum is set aside in a fund from which local associations and organisations can apply for support for various activities. These activities are often related to the promotion of nature, outdoor activities or sports clubs. We welcome suggestions and requests on how to organise the financial support.

8 The process ahead

Investigations for the EIA will be completed in 2024. We plan the following investigations.

- Natural values inventory
- Bird inventory (over several seasons)
- Bat inventory
- Cultural heritage inventory
- Hydrological study
- Sound and shadow calculations
- Visibility analysis

When the EIA is completed, we will file a permit application. We intend to do this during 2024.

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