

Authority Services

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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) regarding planned wind farm called Hirvivaara in Haparanda Municipality, Norrbotten county

The Finnish Environment Institute acknowledges that Finland has received the notification, dated 2 May 2025, and the consultation documents from Sweden in accordance with Article 3 of the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), regarding the planned wind farm Hirvivaara in Sweden.

The developer, TOWII Renewables Sweden AB is investigating the possibility of establishing a wind farm called Hirvivaara in Haparanda municipality in Sweden.

The consultation includes a maximum of 34 wind turbines for the Hirvivaara Wind Farm with a maximum total height up to 250 metres. The wind farm is expected to produce approximately 0.8 terawatt hours (TWh) per year. In addition, the project area includes areas for lines, internal electrical network, setup, and establishment areas as well as areas for service buildings and other associated infrastructure such as possible access roads. The closest parts of the project area are approximately 12 kilometres from the border of Sweden and Finland.

Consultation in Finland

In accordance with Section 30 (911/2022), Subsection 1 of the Finnish Act on Environmental Impact Assessment (252/2017), the Finnish Environment Institute is the competent authority and responsible for tasks under the Espoo Convention when a project in a party of the treaty or a Member State of the European Union may have significant transboundary impacts in Finland.

The Swedish Environmental Protection Agency requested an indication whether Finland intends to participate in the EIA procedure of the planned Hirvivaara Wind Farm project, provide comments concerning the scope for the assessment of the environmental impacts of the project affecting Finland and submit comments from the public and the authorities in Finland.

The public and the authorities were given the opportunity to comment on the consultation documents from 13 May to 25 July 2025, which were available on the website of Finland's environmental administration (ymparisto.fi) and a platform by Ministry of Justice in Finland for requesting and submitting statements electronically (lausuntopalvelu.fi).



Remarks received during the consultation

The Finnish Environment Institute received ten (10) statements. The Finnish Environment Institute has prepared a summary of the original statements in English below. However, the original statements in Finnish or Swedish, which are enclosed to this letter, include important and detailed remarks which need to be examined and taken into consideration in their entirety.

Centre for Economic Development, Transport and the Environment of Lapland

The Centre for Economic Development, Transport and the Environment of Lapland (Lapland ELY Centre) considers that Finland has a need to participate in the EIA procedure for the project because of the potential landscape impacts on Finland and to examine the synergies with other wind power projects planned in the municipality of Haparanda.

The project area is located approximately 12 km from Finland, at the villages of Kukkola, Karunki and Rautionpää in the city of Tornio and approximately 18 km from the centre of Tornio.

Based on the visibility analyses presented in the consultation material, it can be estimated that most of the planned wind turbines will be visible in the section between the villages of Kukkola, Karunki, and Rautionpää. The view extends eastwards into the Finnish territory and based on map examination, probably also northwards towards Kainuunkylä in the municipality of Ylitornio and toward the Finnish side of the Bothnian Bay.

According to the Landscape impact assessment in the construction of wind farms, the updated 2024 -guidelines (Publications of the Ministry of the Environment 2024:29), the area of impact extending into Finland is a so-called intermediate impact area, which starts at a distance of about 7 kilometres from the turbines and becomes a long-range impact area at a distance of about less than 17 kilometres from the turbines, when the total height of the turbines is 250 metres. In the intermediate impact area, the turbines can be clearly visible as part of a wider landscape. The impact of the turbines on the character and quality of the landscape decreases with increasing distance. It may be possible to detect the rotational movement of wind turbines in the intermediate impact area, but the size and distance of the turbines may be difficult to perceive. Terrain shape and cover, as well as the elevation of turbines and observation points, affect visibility and change in landscape structure.

The Lapland ELY Centre considers that a prerequisite for the assessment of the landscape effects on Finland is a comprehensive presentation of the view areas also towards Finland. It is not possible to assess visibility to the north towards Kainuunkylä in the municipality of Ylitornio and towards the Bothnian Bay on the Finnish side, as the visual impact analyses carried out do not cover these sectors. Also, the view area to the east is likely to extend further than the data allow. To assess the transboundary effects, it will be necessary to complete the visual impact analysis with the missing view sectors and to cover a sufficiently large area on the Finnish side (approx. 30 km, or 40 km if necessary). The Lapland ELY Centre sees the need to illustrate the combined visibility of the project towards Finland, especially towards Tornio, together with the Palojärvi and Vuono wind farm projects planned for the municipality of Haparanda.

According to the Lapland ELY Centre's assessment, the sight lines between the Struve Geodetic Arc World Heritage sites of Alatornio Church (Finland), Perävaara (Sweden) and Aavasaksa (Finland) will not be affected. In terms of comprehensibility of the measurement



chain, the Lapland ELY Centre states that, it may also be important to consider what lies behind the line of sight. In this case, this could refer to the line of sight from Aavasaksa to Perävaara.

In the project plan, it is advisable to avoid a visual impression in which the measuring point at the end of the line of sight, which is part of the Struve chain, appears to be surrounded by wind turbines.

The Lapland ELY Centre considers that the effects on the sight lines between the Struve Geodetic Arc measuring points should be assessed if necessary. In this context, the measurement points on the Finnish and Swedish sides should be considered and, where possible, include points outside the World Heritage List. In this regard, the illustrative images may also include an illustration of the combined visibility with the above-mentioned projects from the Huitapero in the Struve chain of measurements. The opinion of the responsible regional museum, the Museum of Tornio Valley, on the need for a study and assessment is important.

The project area is located in the catchment area of the Keräsjoki River, which flows into the Bothnian Bay, and in the catchment area of the small waters between the Keräsjoki River and the Sangis River further away from the national border. The Keräsjoki flows into the Bothnian Bay approximately 10 km west of the Torne River's mouth. The project does not affect the catchment area of the Torne River. The potential impact on the marine area may extend to the Finnish maritime area. The Lapland ELY Centre considers it important to assess the potential impact of the project's construction and operational drainage activities on water bodies, and, if necessary, possibly on the marine area, if the soil quality in the project area requires it.

The Lapland ELY Centre does not consider it likely that there will be any significant traffic impacts on Finland.

The consultation documents show that a cultural environment report has been prepared for the project. However, it remains unclear whether the study covers transboundary landscape impacts. The Lapland ELY Centre asks the project promoter to consider the nationally important built heritage and landscape sites in the Tornio Valley in Finland in the description of the current state of the project's impact area and in the impact assessment:

- The built heritage site Torne River Settlement (The Finnish Heritage Agency, RKY 2009 inventory) is located in the Kainuunkylä river village and its surroundings. The site is characterised by 19th- and 20th-century peasant architecture and associated low-lying meadow islets in the wide stream pool of the Torne River;
- Nationally important landscape area The Southern Tornio Valley Landscapes (Nationally Valuable Landscape Areas, VAMA 2021 inventory) extends from the northern Reväsvaara to the north of Karunki in Finland. The landscape area is significant for Finland's cultural and industrial history, and its oldest villages have been established in their present locations since the early Middle Ages. The landscape area still retains the old settlement structure of the river valley, and many features of the river valley's industrial landscape have been preserved in their traditional form despite new construction and new roads.

The Lapland ELY Centre considers it positive that the consultation material recognises the importance of the Torne River, and particularly Kukkolankoski rapids, for recreation and



tourism and for tourism service providers also on the Finnish side. Recreation and tourism activities are mainly related to the river and fishing.

The planning of the project will include studies on birdlife. It is not clear from the documentation whether the planned studies will cover migratory birds and possible cross-border territories of large birds of prey. The Lapland ELY Centre considers it important for the assessment of the combined effects of wind power projects that the wind power projects in this area consider and, if necessary, study the territories of large birds of prey and bird migration on the northern coast of the Bothnian Bay and in the Tornio Valley.

The Lapland ELY Centre considers that the electricity transmission required by the project should be examined in the assessment procedure.

Regional Council of Lapland

The Regional Council of Lapland states that Finland should participate in the EIA procedure for the Hirvivaara wind farm.

Landscape impacts

The Hirvivaara wind farm sites are located on the Swedish side near the Western Lapland regional land use plan reinforced on 19 February 2014. Near the border, several national and provincial cultural environment or landscape sites have been designated in the West Lapland regional land use plan as important areas/sites for the preservation of the cultural environment, landscape and protected buildings.

In its session of 18 November 2021, the Finnish Government decided on landscape areas of national importance (Nationally valuable landscape areas, VAMA 2021). The new list of sites replaces the previous list from 1995. The national regional development objectives in the Land Use and Building Act require that valuable landscape areas are considered in land use. The inventory of the built cultural environment (The Finnish Heritage Agency, RKY 2009) has been adopted as an inventory for the purposes of the national regional development objectives under the Land Use and Building Act. The sites listed in the inventory must be taken into account as a starting point for land use planning.

According to the map in the consultation document, the Hirvivaara wind farm is located approximately 15 km from the nearest nationally valuable landscape area of the Southern Tornio Valley landscape. The Struve triangulation point in the tower of the Alatornio Church is one of the UNESCO World Heritage Sites. Alatornio Church is located less than 20 km from the planned Hirvivaara wind farm.

National landscape areas, nationally significant built cultural environments and the UNESCO World Heritage Site of Alatornio Church should be considered in the assessment of the project's landscape impacts by indicating the visibility of the wind turbines to the above-mentioned sites. The landscape impact assessment requires illustrative material and an analysis of the effects of the change and the significance of the effects.

The landscape impact assessment should also consider the effects of the aviation warning lights on the landscape during hours of darkness. The warning lights are visible from far away in the dark and affect the visibility of the northern lights, for example. Negative landscape effects have an impact on the operating environment for tourism and the development of the tourism industry in the Torne River and Tornio Valley area.



In the regional plan, the border river Torne is designated as a nature reserve (SL nature reserve 4051) and the river is part of the Natura 2000 network. The Torne River is the most important salmon river in Europe, with significant ecological, economic and cultural importance. Kukkolankoski rapid is located about 10 km east of the wind farm site. Kukkolankoski and the Torne River are also of considerable tourist importance. The Kukkolankoski fishing field is designated as a protected building site (SR 3112) in the Western Lapland regional plan. The site is also a nationally significant built cultural environment (RKY 2009). The landscape impact of the Hirvivaara wind farm must also be assessed for the Torne River.

Combined effects

On page 40 of the consultation document, in section 5.4 Nearby projects and cumulative impacts, it is stated that 'There are currently no known planned or established wind or solar power projects in Finland in the vicinity of this project area. The company is also not aware of other ongoing or planned projects in the area.'

There are 13 operational wind turbines in the Röyttä wind farm in Tornio and 13 operational wind turbines off the port of Ajos in Kemi. In addition, several wind power projects are planned for the Tornio and Ylitornio areas, at various stages of planning.

The environmental impact assessment procedure for the Hirvivaara wind farm must assess the combined effects of wind power projects in operation or planned in neighbouring areas of Finland.

Reindeer Herders' Association

The wind farm is located in the Sameby area of Liehittäjä, Sweden. The whole area is used as grazing area during late autumn and winter, and the area south of the Haparanda railway is used during late winter. The project is in the area used for reindeer migration. In Finland, the project area is closest to the Lohijärvi reindeer herding cooperative.

In this type of project, measures to prevent and mitigate impacts and adverse effects, as well as the damage compensation issues and responsibilities, must be examined and resolved with particular care.

Impacts of the project on reindeer herding and assessment of impacts

Changes on the surrounding environment always affect the conditions for reindeer herding. The EIA process will play a key role in determining the impact of the project on reindeer herding. The impact assessment must determine the current status of the areas and the impact on the activities of the affected reindeer herding cooperatives. The effects of the project on the reindeer pastures of the cooperatives, the use of reindeer grazing, the reindeer husbandry activities and structures, and the social, cultural and economic effects on the reindeer husbandry of the cooperatives should also be examined. These studies will require consultation and dialogue with the reindeer herding cooperatives. They should also include measures to prevent and mitigate the adverse effects of the project. The evaluation should assess the cross-over effects with other similar projects, as well as the negative and positive effects of other land use.

The impact on the Swedish reindeer husbandry is briefly described in the documents. No impact on reindeer husbandry in Finland has been assessed or is not mentioned. Reindeer are likely to avoid the wind power production area beyond the project area.



Several peer-reviewed scientific studies have been published on this in Sweden as well as experiences from several Finnish reindeer herding cooperatives. Migration of reindeer from the project area to Finland may be possible and is even likely due to the short distance. The proposed Hirvivaara wind farm is located about 12 km from the Swedish-Finnish border. There is no fence on the border between the two countries that would prevent the reindeer from moving to Finland. There is no reindeer husbandry area immediately on the Finnish side, as Tornio and Kemi are not part of the reindeer husbandry area in Finland. However, the reindeer that have strayed there have to be taken care of by the Lohijärvi cooperative, as the cooperative closest to the reindeer husbandry area is responsible for the reindeer that have moved out of the reindeer husbandry area, as well as any damage they cause. An outsider cannot tell whether a reindeer is Finnish or Swedish and informs the Lohijärvi cooperative. This results in extra work and costs. In addition, there may be potential conflicts with farmers and permanent residents, in whose areas reindeer must not cause damage to crop or gardens.

The project may also have a significant impact on reindeer husbandry in Finland, which should be assessed. The impacts on Finland should be assessed and documented in a relevant manner. The assessment of the impacts should be based on scientific data and on empirical information from the local reindeer herding cooperative and reindeer herders. The measures to prevent and mitigate the impacts should also be investigated. If the project proceeds, the priority should be to prevent and mitigate the impacts and fully compensate the affected communities for any damage that cannot be prevented or mitigated.

The Reindeer Herders' Association considers that Finland should participate in the EIA procedure of the planned Hirvivaara Wind Farm project.

Finnish Heritage Agency

The nearest nationally significant built heritage sites on the Finnish side are concentrated in the urban environment of Tornio and along the Torne River. In the Tornio city centre, these include the Alatornio church and its surroundings, the church of Tornio and town hall and its surroundings, the wooden house quarters of the streets Rantakatu and Keskikatu and the Tornio railway station. Further north along the Torne River is the Kukkolankoski rapid's fishing ground and the cultural environment of the Torne River settlement. Farther south, in the Bothnian Bay National Park, is the island of Selkä-Sarvi, one of the Bothnian Bay's fishing ports and bases, and the old border between Kemi and Tornio on the island of Iso-Huituri. Of the nationally significant built cultural environments on the Finnish side, the closest to the Hirvivaara wind farm is the Kukkolankoski rapids fishing ground, just over ten kilometres away.

The nationally valuable landscape area of the southern Torne Valley is located north of Karunki and to the north of the landscape area is the Aavasaksa landscape. The Hirvivaara wind farm would be located about 10 km from Karunki.

Cultural environments of regional importance include the Empire district of Tornio, the village of Vojakkala and the cultural landscape of the Torne River, which are included in the West Lapland regional plan.

The Alatornio church and the Struve Geodetic Arc points in Aavasaksa, which are UNESCO World Heritage Sites, are also located within the potential impact area. Approximately 16 km northeast of the project area on the Swedish side is the Struve Arc's measuring point Perävaara, which is also a World Heritage Site. The proposed wind farm will not change the lines of sight between the three sites.



The closest to the planned wind farm is the southern Tornio valley landscape in Karunki. When considering the effects of the Hirvivaara wind power project on the Finnish valuable landscapes, built cultural environments and archaeological heritage, the Finnish Heritage Agency estimates that when viewed from a distance of ten kilometres and more, these wind turbines would not dominate the landscape, but would become a minor landscape feature on the horizon.

The landscape impact of the Hirvivaara wind farm on the valuable landscape areas and cultural environments in Finland can be assessed as moderate. The project would therefore not have significant transboundary environmental impacts on valuable landscape areas and cultural environments in Finland. The Finnish Heritage Agency does not see the need for Finland to participate in the environmental impact assessment procedure for these sites of value.

Finnish – Swedish Transboundary River Commission

The project may cause significant adverse transboundary environmental impacts. Potential impacts may affect land use, landscape, reindeer husbandry, and the acoustic environment. In addition, the project may have cumulative environmental impacts in combination with other wind farms or infrastructure projects in the surrounding area.

The Finnish-Swedish Transboundary River Commission is much obliged for the request for comments and states that Finland should take part in the environmental impact assessment procedure for potential significant transboundary environmental impacts.

Natural Resources Institute Finland Luke

The Natural Resources Institute Finland does not see any need to participate in the EIA procedure.

Finnish Meteorological Institute, Finnish Natural Resources Institute, Finnish Safety and Chemicals Agency (Tukes) and Finnish Transport and Communication Agency (Traficom) have no comments on the matter.

Participation in the transboundary EIA procedure

Based on the statements received and its own deliberations, the Finnish Environment Institute states in accordance with Article 3(3) of the Espoo Convention that Finland intends to participate in the EIA procedure of the Hirvivaara wind farm.

Conclusions

Finland considers that it is important to examine and assess all the impacts mentioned in the comments. Considering the location of the project area, the project may have an impact, for example, on landscape, water bodies and the large birds of prey, the migrating birds and Finnish reindeer husbandry.

The landscape impact assessment requires illustrative material and an analysis of the effects of the change and the significance of the effects on the Finnish side. The landscape impact assessment should also consider the effects of the aviation warning lights on the landscape during hours of darkness.



The combined effects of the planned Hirvivaara wind farm and the existing wind farms on the Finnish side must be considered in the Environmental Impact Assessment of the Hirvivaara wind farm project. The environmental impacts of the electricity transmission required by the project should also be included in and examined within the ongoing assessment procedure.

Head of Services

Jenni Juslén

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Point of Contact to the Espoo Convention

Hanne Rajanen

This document has been electronically signed. The electronic signatures can be verified from the register office of the Finnish Environment Institute.

Appendices

For information

Statements received in Finland

Ministry for the Foreign Affairs
Ministry of the Environment
Centre for Economic Development, Transport and the Environment of Lapland
Finnish Heritage Agency
Finnish Meteorological Institute
Finnish Safety and Chemicals Agency
Finnish-Swedish Transboundary River Commission
Finnish Transport and Communication Agency (Traficom)
Natural Resources Institute Luke
Regional Council of Lapland
Reindeer Herders' Association

