Interreg Europe

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BIOWIND

BIOWIND A3.4

Study Visit Finland Input Paper

Regional Council of South Ostrobothnia

Suolakangas photo: OX2 Finland

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1. Introduction

This document is a deliverable of the Interreg Europe BIOWIND project and provides background information for the BIOWIND A3.4 Study Visit, which will take place October 1st and 2nd 2024 in Kauhajoki, Finland. The Regional Council of South Ostrobothnia will organise this 2-day study visit and will share with partners the regional planning approach to wind farm design and site selection.

Wind energy is expected to become the leading power generation source in the EU by 2027, playing a vital role in fulfilling the EU's renewable energy goals. Compared to other renewable sources, wind energy stands out due to its sustainability, scalability, job creation potential, and lower operational costs. To scale up the deployment of wind farms, it is essential to effectively communicate these benefits to local communities, businesses, and the economy, and to provide clear, accessible information and dispel misconceptions. Additionally, identifying and implementing best practices that foster social acceptance and consensus for wind farm projects are key for effectively addressing public concerns and reservations.

1.1. The BIOWIND project

The BIOWIND project's core objective is to develop an integrated wind planning approach, addressing local opposition and complex permitting processes linked to biodiversity and social cohesion concerns. It focuses on enhancing social acceptance, securing sustainable wind energy development, and promoting collaboration between the wind energy sector and biodiversity policies. Additionally, BIOWIND aims to promote the convergence of wind energy and biodiversity policies and the enhancement of public participation, by facilitating the establishment of dialogue mechanisms with civil society and the introduction of financial participation and benefit sharing schemes. The project aims to empower public administrations in implementing environmentally sustainable and socially inclusive wind energy policies, and to facilitate awareness and consensus among civil society, environmental agencies, and wind energy stakeholders in the targeted regions.

The BIOWIND project's consortium consists of 12 partners from 9 European countries, collaborating through joint policy learning and exchanges of experiences. The following Figure 1 presents the consortium members involved in the implementation of the project.

No.	Project partner	Acronym	Country
PP1 (LP)	Region of Western Greece	RWG	Greece
PP2	Regional Council of South Ostrobothnia	RCSO	Finland
PP3	Zemgale Planning Region	ZPR	Latvia
PP4	Northern and Western Regional Assembly	NWRA	Ireland
PP5	University of Patras	UPAT	Greece
PP6	Province of Flemish Brabant	PFB	Belgium
PP7	Central Danube Development Agency	CDDA	Hungary
PP8	Marshal Office of Świętokrzyskie Voivodeship	KIELCE	Poland
PP9	Autonomous Community of the Region of Murcia - General Directorate of the Natural Environment	CARM	Spain
PP10	Asturias Energy Foundation	FAEN	Spain
AP11	The Hellenic Society for the Promotion of Research and Development Methodologies	PROMEA	Greece
DP12	ACTIVE ALLIANCE FOR ALBANIA	TRIPLE A	Albania

Figure 1. BIOWIND project partners

1.2. Interregional Policy Learning Exchanges

The BIOWIND project has produced several different documents to gain more knowledge from different aspects of wind energy processes and successful means to develop more wind energy in the EU. In addition to the joint thematic analysis, the project also foresees interregional policy learning exchanges that take place in different partner regions.

- A3.1 Interregional workshop on developing measures to promote civic participation and engagement in wind energy planning was arranged in Sligo, Ireland, by NWRA in September 2023.
- A3.2 A site visit and workshop on effective biodiversity management and conservation systems in wind areas took place in Jelgava, Latvia in February 2024 by ZPR.

- A3.3 Interregional workshop on sustainable approaches to wind turbine decommissioning was in Leuven, Belgium in June 2024, arranged by PFB
- A3.4 Study visit to the "Vöyrinkangas" wind farm in South Ostrobothnia, Finland will be arranged in October 2024 by RCSO

1.3. Activity A3.4 Study visit to the "Vöyrinkangas" wind farm

The Suolakangas wind farm (also known as the Vöyrinkangas wind farm) is located in Western Finland, South Ostrobothnia region, in the municipality of Kauhajoki, about 9 km south-east of the centre of Kauhajoki. The area is used for forestry. The wind farm consists of nine wind turbines with a combined capacity of 37.8 MW. The wind farm's substation is located in the Aro industrial area and the wind farm is connected to the Caruna grid. The estimated annual production of the wind farm is around 155 gigawatt hours, which corresponds to the annual electricity consumption of 33 000 households (5 000 kWh/household). The wind farm was built between 2020 and 2021, and OX2 became responsible for the technical and commercial management of the wind farm from early 2021.[1]

During the permitting phase, the Suolakangas wind farm's initial sitting was altered following public consultation and biodiversity sensitivity surveys. During the visit, partners are expected to develop capacities on how to integrate environmental considerations into wind farms sitting plans, such as proximity to natural reserves and cultural sites, biodiversity sensitivity, and land erosion estimates, ensuring also alignment with spatial plans. Public consultation issues will be also discussed. After the meeting, RCSO will gather insights from partners on how to build upon the aforementioned approach and make a summative report.

2. Planning and implementation of a wind power project

The launching of a wind power project can be initiated by many different instances: companies specialised in wind power projects, energy companies, municipalities, landowners, local businesses,

[1] OX2 Finland https://www.ox2.com/fi/suomi/hankkeet/suolakangas/

etc. In Finland, wind power projects are implemented by different-sized Finnish and overseas companies specialised in the planning of wind power projects, Finnish energy companies, and so-called Mankala companies owned by them. 42 percent of wind power projects in Finland are in Finnish ownership (situation in 2023)[2]. The Mankala principle is a practice used in Finland whereby several companies form a non-profit limited liability company for a common purpose. This model is particularly used in the energy sector, where there are several Mankala companies established for the construction and operation of one or more power plants[3].

The total duration of a medium-sized wind power project (about 10 wind turbines) from preliminary studies to a completed wind farm is an average of 4-6 years. A small project of a few turbines may be ready to generate electricity in under two years from the preliminary studies. The progress of the project depends on many factors, for example, the scheduling of assessments to be made and to which extent the completion of the wind power project is a familiar process for the municipality and the regional authorities[4].

2.1. Wind power project phases

Project phases in wind power projects take several years to complete and these 12 different phases presented underneath may often overlap.

1. Feasibility study and seeking a suitable area
2. Negotiations with the municipality and the landowner of the area, drawing up lease agreements.
3. Requesting a statement from the Finnish Defense Forces
4. Preliminary negotiations with the system operator
5. Starting wind measurements
6. Contact authority's (ELY Centre) decision on whether the environmental impact assessment procedure (EIA) will be applied and, if necessary, starting the EIA procedure. Today, the land

[2] Renewables Finland – Project lifecycle https://tuulivoimayhdistys.fi/en/information-for-the-developers/project-development/project-lifecycle
[3] Wikipedia – Mankala-periaate https://fi.wikipedia.org/wiki/Mankala-periaate
[4] Renewables Finland – Project lifecycle https://tuulivoimayhdistys.fi/en/information-for-the-developers/project-development/project-lifecycle

use plan can be expanded to also meet the requirements of the EIA legislation, in which case no separate EIA is carried out.

7. Land use planning of the area for wind power use. Even if the EIA is carried out as a separate process, land use planning and EIA are usually completed concurrently. In such a case, for example, hearings can be arranged at the same time.
8. Final negotiations with the system operator
9. Applying for licenses
10. Network connection contract
11. Earth construction work
12. Acquisition of turbines and start of construction. [5]

2.2. Environmental impact assessment process

The purpose of the environmental impact assessment (EIA) procedure is to ensure that the environmental effects of a planned project are assessed with sufficient rigour where the project is likely to have significant adverse effects on the environment.

The EIA procedure provides information on what the implementation of a particular project would mean in practice and what its impact on the environment would be. An EIA should be carried out at an early stage when there are still alternatives to the project. The aim of the process of generating alternatives is to find an option that would have the least adverse environmental impact. This is why it is important to compare the impacts of the alternatives. The information generated by the process is intended to support planning and decision-making. The end result should be an understanding of the significant environmental impacts of the project and the means to prevent adverse impacts. However, it is up to the project promoter to decide which option to choose.

The environmental impact assessment procedure starts when the party responsible for the project (e.g. a private company) submits an environmental impact assessment programme to the contact authority, i.e. the regional ELY Centre. Once the impacts of the project and its alternatives as set out in the EIA programme have been assessed, the project promoter compiles the information into an assessment report.

[5] Renewables Finland – Project lifecycle https://tuulivoimayhdistys.fi/en/information-for-the-developers/project-development/project-lifecycle

The ELY Centre will inform the affected area about the pending assessment programme and the assessment report, giving people the opportunity to submit their opinions on the project to the ELY Centre. The ELY Centre collects the opinions of residents and organisations and the opinions of the authorities and, on the basis of these and its own expertise, draws up an opinion on the assessment programme and a reasoned conclusion on the appraisal report.

The project promoter is responsible for the costs of the assessment (environmental impact assessment, communication and consultation). The project promoter will also pay the contact authority the fee provided for in the assessment programme and the reasoned conclusion.

The environmental impact assessment (EIA) procedure is not a licensing procedure and there is no right of appeal against the EIA. [6]

2.2.1. Authorities involved in the EIA process

There are four national authorities who are involved in the EIA procedure.

Centre for Economic Development, Transport and the Environment (ELY Centre)

- Acts as contact authority
- Ensures that the environmental impact assessment of the project is carried out
- Organises prior consultation, if necessary, in cooperation with the project promoter and the relevant authorities
- If necessary, agrees with the planning authority on combining the EIA procedure and project planning
- Consultations
- Issue an opinion on the assessment programme and a reasoned conclusion on the basis of the assessment report and the opinions and comments received
- Takes a decision on the application of the assessment procedure in an individual case

[6] Ymparisto.fi, Website of Finland's environmental administration. YVA - Hankkeiden ympäristövaikutusten arviointimenettely https://www.ymparisto.fi/fi/osallistu-ja-vaikuta/ymparistovaikutusten-arviointi/hankkeiden-ymparistovaikutusten-arviointimenettely-yva#yva-menettelyn-viranomaiset

Ministry of Economic Affairs and Employment (TEM)

- Decides on the application of the assessment procedure in individual cases in nuclear energy matters and acts as contact authority for projects concerning nuclear installations within the meaning of the Nuclear Energy Act (990/1987)

Ministry of the Environment (YM)

- Guides, monitors and develops the environmental impact assessment procedure in general
- Decides on the contact authority in cases of doubt or where the ELY is responsible for the planning or implementation of the project
- Designates the competent ELY to make an individual decision if the project is located in the territory of several ELYs or if the ELY is responsible for the planning and implementation of the project

Finnish Environment Institute (Syke)

- Carries out the notification and negotiation tasks with other countries required by an international agreement binding Finland (Espoo Convention) [7]

2.2.2. Progress of the EIA process

1. **EIA Programme**

   This is the project developer's plan for how the environmental impact assessment will be carried out. It describes the project, its alternatives and the impacts to be studied. It also explains how information and participation will be organised. The content requirements for the EIA programme can be found in the EIA Regulation (Article 3).

2. **Opinions and comments**

   The contact authority publishes information about the pending EIA programme on its website and in newspapers. This information will include how to access the programme and

[7] Ymparisto.fi, Website of Finland's environmental administration. YVA - Hankkeiden ympäristövaikutusten arviointimenettely https://www.ymparisto.fi/fi/osallistu-ja-vaikuta/ymparistovaikutusten-arviointi/hankkeiden-ymparistovaikutusten-arviointimenettely-yva#yva-menettelyn-viranomaiset

how to comment on it. There is a minimum period of 30 days. The EIA programme is usually presented at a public meeting.

3. **The Contact Authority's opinion on the EIA programme**

   The contact authority will give its opinion on the EIA programme to the project promoter one month after the end of the consultation. The opinion will comment on the scope and accuracy of the programme. It will also include a summary of the comments made by others. The opinion will be published on the Contact Authority's website.

4. **EIA report**

   The project developer will carry out an environmental impact assessment and organise the related participation on the basis of the EIA programme and the opinion of the contact authority and will prepare an EIA report. The content requirements for the EIA report can be found in the EIA Regulation (Article 4).

5. **Opinions and comments on the EIA report**

   The contact authority will ensure that the pending EIA report is made public. The EIA report is usually presented at a public meeting. The comment period for the report is 30-60 days.

6. **Reasoned conclusion of the Authority**

   The contact authority checks the adequacy and quality of the EIA report and then draws a reasoned conclusion on the significant environmental effects of the project. It will be submitted to the project promoter within 2 months of the end of the consultation and will be made public. The project promoter attaches the EIA report and the reasoned conclusion to the project permit applications.

7. **Taking EIA into account in the authorisation procedure**

   The EIA report and the reasoned conclusion will be taken into account by the authorising authority in the permit. [8]

2.2.3. The EIA Regulation

The content requirements for the EIA report can be found in the EIA Regulation (Article 4), legislation on environmental impact assessments.

[8] Ymparisto.fi, Website of Finland's environmental administration. YVA - Hankkeiden ympäristövaikutusten arviointimenettely https://www.ymparisto.fi/fi/osallistu-ja-vaikuta/ymparistovaikutusten-arviointi/hankkeiden-ymparistovaikutusten-arviointimenettely-yva#yva-menettelyn-viranomaiset

Finnish legislation in the Act on Environmental Impact Assessment Procedure applies to all projects that may be expected to have considerable negative environmental impacts. EIA procedure may also be required for individual projects where harmful environmental impacts are likely, on the basis of decisions made by the regional Centre for Economic Development, Transport and the Environment.

The legislation aims:

- to ensure that environmental impacts are assessed and duly considered during the preparation and approval of authorities´ plans and programmes,
- to improve the availability of information, and provide more opportunities for public participation in planning and
- to promote sustainable development.

The new legislation (that entered into force in 2005) includes the same general obligations applied in the earlier legislation and in addition specifies the content requirements and assessment procedures that must be followed for certain types of plans and programmes.

The legislation has been drafted in accordance with both the EU SEA Directive (2001/42/EC), which requires that environmental assessments should be carried out for certain types of strategic plans and programmes, and a related protocol of the United Nations' Economic Commission for Europe (UNECE) on strategic environmental assessments. [9]

2.2.4. The EIA Report

The EIA Report and the reasoned conclusion of the contact authority to the report will be taken into account by the authorising authority and will decide if a permit will be granted. The EIA Report includes all the relevant information concerning the project as well as a large number of studies that have been done on the environmental impacts. The report includes

1. Description of the project and its options, e.g. project location and land use needs, implementation schedule
2. Permits and decisions required for the project, e.g. land use planning and building permits

[9] Ministry of the Environment - Legislation on environmental impact assessments https://ym.fi/en/legislation-on-environmental-impact-assessments

3. Environmental impact assessment procedure and participation, e.g. stages and timetable of the assessment
4. Environmental effects to be assessed and assessment methods
5. Impacts on urban structure, land use and physical assets
6. Impacts on landscape and cultural environment
7. Effects on the natural environment, e.g. soil, bedrock, land, birds
8. Effects on the protected areas, e.g. Natura sites
9. Effects on people, e.g. noise, lightning
10. Environmental impacts of electricity transmission
11. Synergy with other projects and plans
12. Comparison of alternatives, assessment of the significance of the effects and feasibility of the project
13. Need for further studies and monitoring [10]

We will go through each section in more detail with the case of Suolakangas wind park.

3. National Legislation and objectives

3.1. Land Use and Building Act

The Land Use and Building Act concerns the use of land areas and building activities conducted on them. The aim is to create a healthy, safe and comfortable living environment that is socially functional and where the needs of various demographic groups are taken into account.

The purpose of the Land Use and Building Act is:

- Organising the use of land areas and building activities conducted on them in such a way that creates the preconditions for a favourable living environment
- Promoting ecologically, socially and culturally sustainable development
- Ensuring that everyone has the right to participate in the preparation of related matters

[10] Ymparisto.fi, Website of Finland's environmental administration. YVA - Hankkeiden ympäristövaikutusten arviointimenettely https://www.ymparisto.fi/fi/osallistu-ja-vaikuta/ymparistovaikutusten-arviointi/hankkeiden-ymparistovaikutusten-arviointimenettely-yva#yva-menettelyn-viranomaiset

- Ensuring the high quality and interactivity of planning, the diversity of expertise, and the openness of communications
- The general goals are supplemented by the objectives of land use planning (section 5) and the objectives of building guidance (section 12).

The Land Use and Building Act and Decree include provisions on the following:

- Town planning
- Municipal building ordinances
- Planning and building with regard to shore areas
- Plot division
- Expropriation of land in relation to community structure
- General requirements on building
- Building permits and other supervision by authorities
- The functionality of the Land Use and Building Act is monitored and evaluated in order to ensure that it meets the needs of the changing operating environment. [11]

3.2. Wind Power Construction

In principle, the same rules apply to the construction of wind power plants as to other construction. As a rule, the implementation of large wind farms should be based on the Land Use and Building Act, which means that sites suitable for wind turbines are specified in the land use plan.

At the moment, the planning of wind power sites is booming in Finland. Numerous master plans that directly guide wind power construction have been submitted for approval. The present and upcoming regional plans will enable the construction of a lot more wind power.

Wind power projects always require a building permit. Depending on the location, the implementation of a wind power project may also require e.g. an obstacle approval under the Aviation Act, a water permit under the Water Act or an environmental permit under the Environmental Protection Act, as matters falling within the scope of special legislation cannot be decided through zoning.

[11] Ministry of the Environment. Land Use and Building Act https://ym.fi/en/land-use-and-building-act

3.2.1. Noise from Wind Turbines

The Government Decree on Guide Values for the Outdoor Noise Level of Wind Turbines applies to the planning, permit procedures and supervision of the placement and construction of wind turbines. The guide values aim to ensure that the distances between wind turbines and residential areas are long enough and that noise does not cause health hazards to people or compromise the amenities of the living environment.

The guide value, i.e. maximum, for the average daytime noise level from wind turbines for permanent and holiday residence, care institutions and camping areas is 45 decibels and the night time noise level is 40 decibels. For educational institutions and recreation areas, the guide value for daytime noise is 45 decibels but no guide value has been set for the night-time. For national parks, the guide value of 40 decibels applies during both day and night.

The provisions of the Health Protection Act on the indoor noise level of buildings must also be taken into account when deciding on the placement of wind turbines.

The Ministry of the Environment has issued three sets of guidelines that support the implementation of the Decree on Guide Values for the Outdoor Noise Level of Wind Turbines. The guidelines for the modelling of wind turbine noise establish a safety distance between wind turbines and the site exposed to the noise (e.g. residential area). The modelling makes it possible to assess the noise zones and noise levels caused by wind turbines at different observation points.

The guidelines for measuring the noise level of wind turbines can be used to determine whether the noise level exceeds the guide or limit value. The guidelines can also be used as such or together with other official guidelines on sound technology when the noise emitted by wind turbines causes harm in the environment or inside buildings.

The guidelines for measuring the noise emissions from wind turbines can be used to verify the guarantee value given by the manufacturer regarding the volume of the wind turbine noise. The measurement guidelines can also be applied to the measurement of initial values used in noise modelling.

3.2.2. Landscape impact assessment in wind power construction

The publication 'Landscape impact assessment in wind power construction' examines the impacts wind power construction may have on landscapes and the way in which they are taken into account in land use planning and environmental impact assessment procedures. The publication aims to improve the quality of studies and impact assessments related to wind power planning and promote the maintenance of landscape values.

3.2.3. Avian impact assessment in wind power construction

The publication 'Avian impact assessment in wind power building' focuses on the impacts wind power construction may have on birds and how these are examined and taken into account in land use planning and environmental impact assessment. The publication aims to improve the quality of studies and impact assessments related to impacts of wind power construction on birds and improve the ways these are taken into account in planning.

The materials that guide the ways how impacts of wind power construction on birds are taken into account include studies on the most important migration routes of birds in Finland. This material examines the migration routes of the most important species of large birds and factors that influence the location of the routes and variations in this. It is mainly intended for those working on zoning, planning and environmental impact assessment concerning wind power construction.

3.2.4. Legislative project on demolition and restoration obligations concerning wind turbines

The aim of the project is to formulate the legislative proposals on the demolition and restoration obligations concerning wind turbines, which are included in the Government Programme. The project will also prepare a proposal for a security or other financing model to ensure that the obligations are met. The government proposal is to be submitted to Parliament during the autumn term 2025.[12]

[12] Ministry of the Environment. Wind power construction. https://ym.fi/en/wind-power-construction

3.3. Legislation on Biodiversity and Nature Protection

The national strategy and action plan for the conservation and sustainable use of biodiversity outlines objectives and measures for halting the decline in biodiversity by 2020. Safeguarding biodiversity requires an effort from the whole of society.

Public authorities are responsible for conserving biodiversity. According to the Constitution, nature and its biodiversity, the environment and the national heritage are the responsibility of everyone. The public authorities shall endeavour to guarantee for everyone the right to a healthy environment and for everyone the possibility to influence the decisions that concern their own living environment.

The Ministry of the Environment guides and monitors nature conservation in Finland. It prepares legislation to maintain biodiversity and is responsible for the general monitoring of the implementation of this legislation. The Ministry also prepares nature conservation programmes and establishes nature reserves under these programmes. Furthermore, it approves the management and use plans of major nature reserves.

The Finnish Environment Institute researches and assesses biodiversity, serving various public bodies and agencies, businesses and communities. It assesses the endangered status of organisms and habitats, conducts research on the management and restoration of different habitats, and on the importance of ecosystem services and their interaction with biodiversity.

Centres for Economic Development, Transport and the Environment (ELY Centres) promote and supervise nature conservation and landscape protection in their respective regions. They safeguard biodiversity, for example, by

- establishing nature reserves on privately owned land
- acquiring areas for the state, for the purpose of nature conservation
- approving proposals for protected areas and management and use plans for these areas
- safeguarding natural values in land use planning

- planning the management and use of Natura 2000 areas [13]

3.4. National Land Use Objectives

The purpose of the National Land Use Objectives is to ensure that nationally significant aspects are taken into account in the planning of regions and municipalities and in the activities of national authorities. The Government approved the current national regional development objectives in 2018. They the following elements:

- Functioning communities and sustainable mobility
- Efficient transport system
- Healthy and safe living environment
- A healthy and healthy urban environment, healthy living conditions and sustainable transport
- Renewable energy supply[14]

4. Regional Land Use Plan of South Ostrobothnia

A regional land use plan is a general plan for the use of land in a region or part of a region. It sets out the principles of land use and urban structure and designates areas necessary for the development of the region. The purpose of a regional plan is to resolve national, regional and local land use issues. A regional plan can also be drawn up in stages, as a plan dealing with a specific set of issues.

The regional plan guides the planning of municipalities and other land use planning by public authorities. It is shown on a map by means of zoning designations and regulations. The regional plan

[13] Ministry of the Environment Biodiversity and nature protection. https://ym.fi/en/biodiversity-and-nature-protection
[14] Regional Council of South Ostrobothnia. Maakuntakaavan uudistaminen. https://epliitto.fi/aluesuunnittelu-ja-liikenne/maakuntakaavan-uudistaminen/

is accompanied by an explanatory memorandum, which sets out the objectives, effects and other information necessary for its interpretation and implementation, among other things.

The regional plan is drawn up by the Regional Council and approved by the Regional Assembly. An amendment to the Land Use and Building Act, which means that the Ministry of the Environment no longer approves regional plans, entered into force on 1 February 2016.[15]

4.1. Content requirements for the Regional Plan

According to Section 28 of the Land Use and Building Act, when drawing up a regional plan, the national regional development objectives must be taken into account and special needs arising from the conditions of the region must be taken into account. In addition, nature conservation programmes and decisions, as well as landscape areas under the Nature Conservation Act, must serve as a guideline when drawing up the plan.

Special attention must also be paid to:

- The appropriate spatial and urban structure of the region
- The ecological sustainability of land use
- Environmentally and economically sustainable transport and technical facilities
- Sustainable use of water and soil resources
- The conditions for the functioning of the region's economy
- The preservation of the landscape, natural values and cultural heritage; and
- The adequacy of areas suitable for recreation [16]

4.2. The Regional Plan in general

The Regional Council of South Ostrobothnia is the responsible authority for the establishment of the Regional Land Use Plan of South Ostrobothnia. The new Regional Plan 2050 has been prepared since

[15] Ymparisto.fi, Website of Finland's environmental administration. Maakuntakaavat. https://www.ymparisto.fi/fi/rakennettu-ymparisto/kaavoitus-ja-alueidenkaytto/kaavoitus/maakuntakaavat
[16] Ymparisto.fi, Website of Finland's environmental administration. Maakuntakaavat. https://www.ymparisto.fi/fi/rakennettu-ymparisto/kaavoitus-ja-alueidenkaytto/kaavoitus/maakuntakaavat

2021 and the work has been finalised during the past months. The Regional Assembly approved the new Regional Land Use Plan 2050 at its meeting on September 16th 2024.

The South Ostrobothnia Regional Plan 2050 is a comprehensive regional plan, including the following areas: spatial structure, transport and technical networks, green structure, natural resources and energy production, and cultural environment. The planning area covers the entire territory of the region. The new regional plan will repeal the previous regional plans when it enters into force. [17]

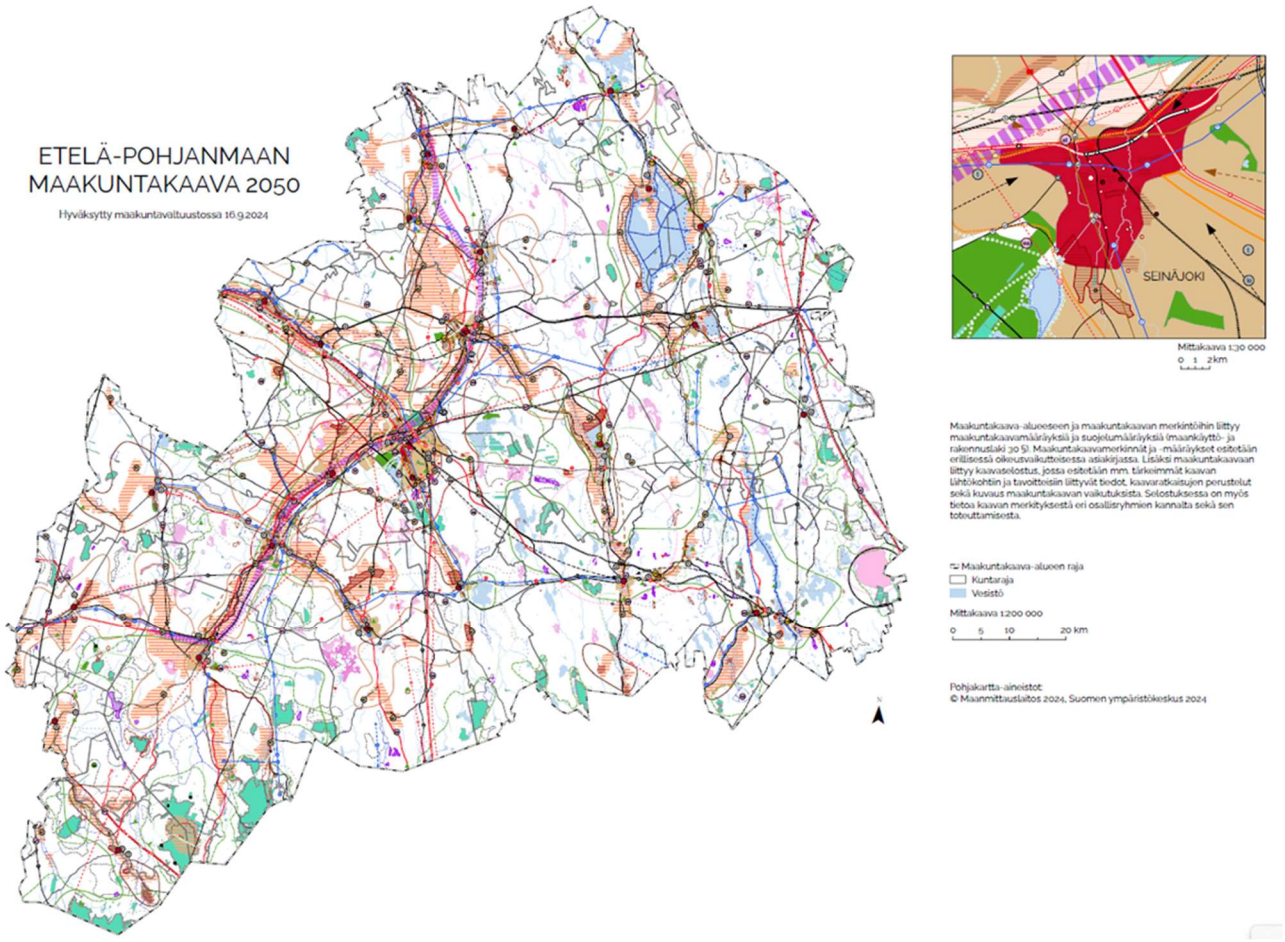

Figure 2. Map of the Regional Land Use Plan South Ostrobothnia 2050

The key document guiding the regional land use plan of South Ostrobothnia is the regional strategy. The Strategy contains the county's long-term development vision and strategic objectives up to

[17] Regional Council of South Ostrobothnia. Maakuntakaavan uudistaminen. https://epliitto.fi/aluesuunnittelu-ja-liikenne/maakuntakaavan-uudistaminen/

2050, as well as the shorter-term priorities of the county programme for 2022-2025. The main objectives of the regional strategy are:

- Demographic stabilisation and adaptation
- Increasing the level of skills, an internationally attractive RDI ecosystem
- Economic renewal and ecological transition

The objectives of the regional land use plan are also based on a number of international, national and regional strategies, which the regional plan aims to promote. South Ostrobothnia is affected by international agreements to which Finland has committed itself, for example in relation to climate objectives. A National Adaptation Plan has been prepared in relation to adaptation to climate change. The development of the transport system is determined by Finland's national transport system plan, Liikenne 12, the joint transport strategy for Western Finland of the six regional councils and the transport system plan for South Ostrobothnia. Technical service interconnection targets have been set in national and regional strategies, for example for water supply and electricity networks.

In terms of spatial structure, the key strategic background is Finland's Spatial Development Perspective 2050 and the regional strategies that have set targets for the living environment. Targets related to the use of natural resources and energy production have been addressed in several national strategies and at European Union level as part of the Green Deal programme. In the area of greening, targets are included in the National Forestry Strategy, the Regional Forest Programme for South and Central Ostrobothnia, the EU Biodiversity Strategy, the National Strategy for Nature Recreation 2030, etc. For cultural environments, relevant targets are included in the Cultural Strategy for South Ostrobothnia and the National Strategy for Cultural Environment. [18]

4.3. Characteristics of the region South Ostrobothnia

South Ostrobothnia is located in Western Finland, neighbouring Ostrobothnia, Central Ostrobothnia, Central Finland, Pirkanmaa and Satakunta. It covers an area of approximately 14 355 km2. The landscape of South Ostrobothnia is characterised by low altitudinal variations and rivers running

[18] Regional Council of South Ostrobothnia. Maakuntakaavan uudistaminen. https://epliitto.fi/aluesuunnittelu-ja-liikenne/maakuntakaavan-uudistaminen/

through arable land. The eastern parts of the province also have a more hilly lake landscape. The largest lake is Lappajärvi, which was formed tens of millions of years ago after a meteorite crashed into the earth.

Figure 3. The landscape of the region is dominated by the rivers running through the farmland.

At the end of 2022, South Ostrobothnia had a population of 190 774 people, making it the ninth largest region in Finland. Most of South Ostrobothnia is core rural and the proportion of rural population is relatively high. The urbanisation rate (74.3%) is well below the Finnish average (86.9%). The largest concentration of urban housing and mixed-use developments is in Seinäjoki, with a population of around 65 323 in 2022.

South Ostrobothnia is crossed by Finland's main transport routes and the regional centre Seinäjoki is an important rail hub along the main line. The accessibility of the internal transport network is good thanks to the radial road and rail connections from Seinäjoki to various parts of the province. South Ostrobothnia has the highest number of business establishments per capita (131/1000 inhabitants, in 2021) and the highest proportion of entrepreneurs among employed persons in Finland (13.5%, 2021). Significant concentrations of business activity and areas of internationally

specialised business activity are located throughout the region. However, challenges include a one-sided industrial structure and low productivity. [19]

4.3.1. Energy production and climate emissions

Per capita greenhouse gas emissions in South Ostrobothnia were the fifth highest among the regions in 2021. The largest sources of greenhouse gas emissions in the region are agriculture, road transport and district heat production. The total energy use in the province is over 8 TWh per year. The transformation of the energy sector will particularly affect South Ostrobothnia, where a significant share of energy is still produced from non-renewable fuels. The region is also characterised by extensive use of forest energy, for example on farms and in municipal heating plants. Wind power accounts for 74.4% of the province's electricity production and has increased strongly in recent years (1462 GWh in 2022 vs. 0 GWh in 2010). The need to find suitable locations for large wind farms will remain significant in the coming years. The energy transition in the region will free up thousands of hectares of former peatland for secondary use in the coming years.[20]

4.3.2. Natural and cultural environment

The trend in the decline of species in the region is worrying and there are very few old-growth forests. The state of the natural marshes is also important from the point of view of the natural environment. Although the number of protected areas has increased in recent years, especially through voluntary protection, the proportion of undrained protected areas, for example, is only about 3% of the total area of the province.

The ecological status of water bodies in South Ostrobothnia is sensitive to changes. The majority of the province's surface waters are in satisfactory or fair condition. Due to small altitude variations, low lake levels and intensive land use in low-lying areas, there are several flood-prone areas in the province. In addition to local recreational facilities in towns and cities, the people have access to a comprehensive network of outdoor recreational areas and trails, which is constantly being

[19] Regional Council of South Ostrobothnia. Maakuntakaavan uudistaminen. https://epliitto.fi/aluesuunnittelu-ja-liikenne/maakuntakaavan-uudistaminen/
[20] Regional Council of South Ostrobothnia. Maakuntakaavan uudistaminen. https://epliitto.fi/aluesuunnittelu-ja-liikenne/maakuntakaavan-uudistaminen/

developed. The region also has two national parks and two Unesco Global Geopark areas, Lauhanvuori - Hämeenkangas Geopark and Kraatterijärvi Geopark. The cultural environment of South Ostrobothnia is characterised by river valleys and farmland, peasant architecture and a large number of business and commercial premises and youth clubs, for example. [21]

Figure 4. South Ostrobothnia has an extensive network of outdoor recreation areas and trails.

4.4. Natural Resources and Energy Production

The Regional land use plan for South Ostrobothnia addresses all areas that have a significant impact on regional and land use and reserve the necessary areas for these purposes. The planning packages are: Area structure, Transport and technical services networks, Green infrastructure, Natural resources and energy production and Cultural heritage sites. We will go through the relevant part Natural resources and energy production in more detail.

The exploitation of natural resources and energy production have a major impact on the use of land in the province, as they often require large areas of land and may have different impacts on the environment. The areas reserved for natural resource exploitation and energy production are essential for the economic activity and energy self-sufficiency of the province.

[21] Regional Council of South Ostrobothnia. Maakuntakaavan uudistaminen. https://epliitto.fi/aluesuunnittelu-ja-liikenne/maakuntakaavan-uudistaminen/

In the regional plan, the natural resource and energy production mix includes, for example, designations such as zoning and development designations, which indicate activities related to the exploitation of natural resources in a given area, such as land reclamation or peat production. In the current regional plans for South Ostrobothnia, designations that guide the use of natural resources and energy production include areas for the extraction of soil and rock, groundwater areas, peat production areas and areas for wind farms.

The designations relating to the complex have been dealt with in the overall regional plan and in the regional phase plans. Climate change mitigation and carbon neutrality objectives have triggered a major energy transition in society, which means that many of the relevant land-use designations need to be updated. For example, the areas designated for wind farms in South Ostrobothnia have largely already been built or reserved for planning. In contrast, the current status and future of peat production areas is currently unclear, as the profitability of peat production has declined and there is new interest in the areas, for example from the perspective of solar and wind energy production and restoration. The land use requirements for non-combustion-based forms of energy production require a new approach.

With regard to the energy transition and the green transition, which will have a significant impact on South Ostrobothnia, the regional plan will create opportunities for a zero-emission energy production system and support renewable energy solutions such as wind power.

The clarifications that are done for the regional plan include

- Future images of energy production and the possibilities of switching to emission-free energy production
- New potential areas for wind energy
- Soil and aggregate extraction areas, as well as the use and need for natural aggregates and recycled materials that replace them

4.5. Planning process and timetable

This chapter describes the process for the Regional Land Use Plan 2050 and timeline in South Ostrobothnia. However, the process steps remain the the same as they would be in any other region in Finland when renewing their regional land use plans.

4.5.1. Initiation and preparation phase

Autumn 2021 - Spring 2022

- The Regional Board decides to launch the regional plan revision process
- Announcement of the launch of the plan
- Preparation, publication and feedback on the participation and assessment plan (OAS) for the regional plan
- The necessary background studies for the preparation of the regional plan will be carried out
- Consultations with stakeholders and authorities on the starting points and objectives of the regional plan

4.5.2. Drafting phase

Spring 2022 - Spring 2023

- Thematic background studies are being finalised
- Preparation of the draft zoning plan will start
- Consultations with stakeholders and authorities on the draft plan and its solutions
- The draft regional plan will be made available for consultation and comments
- The Regional Board considers the comments on the draft plan and approves the responses to them

4.5.3. Proposal phase

Spring 2023 - Spring 2024

- The feedback received in the draft phase is processed and evaluated.
- Additional clarifications are drawn up as necessary.
- The provincial master plan proposal is drawn up based on the feedback received in the draft phase and any additional clarifications.
- Negotiations regarding the plan proposal and plan solutions are organized with various stakeholders and authorities.

- Statements on the plan proposal are requested from authorities and communities that are central to the plan.
- The Regional Board processes the statements of the authorities and communities that are key to the plan from the proposal material and approves the responses given to them
- The Regional plan proposal is made publicly available and notes are requested

4.5.4. Approval phase

Spring - Autumn 2024

- The Regional plan proposal is finalised, if necessary, based on possible additional investigations and interaction with stakeholders.
- The Regional Board approves the plan and makes a closing proposal to the Regional Assembly on the approval of the final plan
- The Regional Assembly approves the plan
- When it enters into force, the new comprehensive plan will cancel the previous comprehensive and phased regional plans

4.5.5. Implementation and monitoring phase

2024-

- The region of South Ostrobothnia, municipalities and other authorities promote the implementation of the regional plan as part of their own activities
- The implementation of the plan is monitored and at the same time possible needs to change the plan are assessed

5. Suolakangas wind farm EIA process – EIA Programme

The EIA programme is the project developer's plan for how the environmental impact assessment will be carried out. It describes the project, its alternatives and the impacts to be studied. It also

explains how information and participation will be organised. The content requirements for the EIA programme can be found in the EIA Regulation (Article 3).

At Suolakangas, the environmental impact assessment process was started for a project proposal which included the plan of installing nine wind turbines in the city of Kauhajoki. The following texts are from the EIA programme from November 2017.

5.1. Introduction, purpose and description of the project

Project Area: The planned area is located about 6 km from the edge of Kauhajoki city centre, about 7 km east of the city centre, in the area between Keevelinkangas, Nummikankaantie, Heikinkangas and Sahankylä. The project area is about 5 km from the village of Koskenkylä to the west and about 3,5 km from the main road 44. The village of Sahankylä to the north of the site is about 2,7 km from the edge of the project area. The Hyypänjokilaakso Nationally Valued Landscape Area is located about 3 km southwest of the project area. The nearest Natura 2000 site is Iso-Koihnanneva (SPA and SCI, FI0800034), which is located to the south-east of the project area, approximately 2.5 km from the nearest planned wind turbines. Four ancient sites (tar pit) are located in the Suolakangas area.

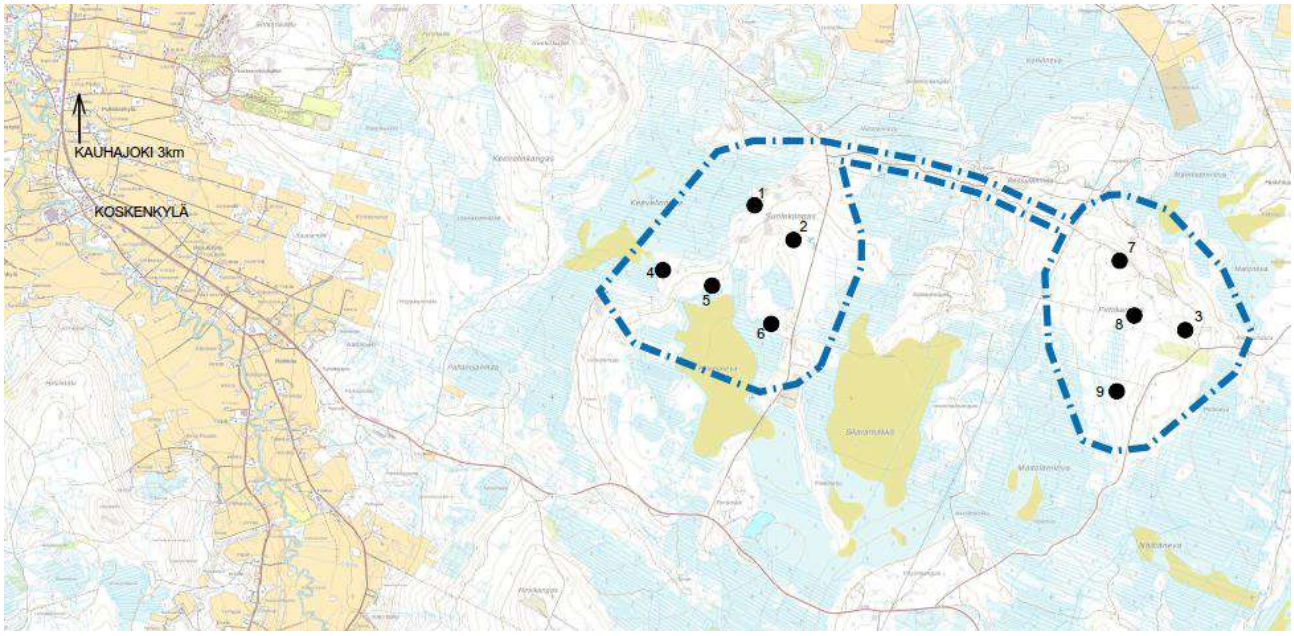

Figure 5. The project area (Suolakangas EIA Programme 2017)

The project area covers approximately 860 hectares, most of which is a forested ridge area. There are no residential or holiday buildings in the area. The nearest residential building is located at a distance of about 2.2 km from the nearest planned wind turbine. The eastern part of the project area is an extraction area, the rest of the area is used for agriculture and forestry. The areas planned for wind energy are not sites of biodiversity importance.

Options to be considered in the EIA: There are four different project options. The number of turbines and their positioning is in accordance with the existing Suolakangas wind power sub-area plan for all options. They differed in terms of size, power and sound power level.

- **Option 0**: The planned wind farm in the Suolakangas area of Kauhajoki will be implemented in accordance with the Suolakangas wind power sub-area plan that entered into force on 17 May 2017. A wind farm of up to 9 turbines will be built on the site. The total height of the wind turbines is 230 m, the height of the pole is 155 m and the rotor diameter is 150 m. The wind turbine will have a unit power of 3.3 MW and a sound power level of 106 dB.
- **Option 0+**: A wind farm of up to 9 wind turbines with a total height of 230 m, a pole height of 145 m and a rotor diameter of 170 m will be built in the Suolakangas area. The wind turbines will have a power output of approximately 3.6-4.5 MW and a sound power level of 104.9-108.2 dB.
- **Option 1**: A wind farm of up to 9 wind turbines with a total height of 241 m, a pole height of 156 m and a rotor diameter of 170 m will be built on the Suolakangas area. The wind turbines will have a power output of approximately 3.6-4.5 MW and a sound power level of 104.9-108.2 dB.
- **Option 1+**: A wind farm of up to 9 wind turbines with a total height of 251 m, a pole height of 166 m and a rotor diameter of 170 m will be built in the Suolakangas area. The wind turbines will have a power output of approximately 3.6-4.5 MW and a sound power level of 104.9-108.2 dB.

Electricity Transmission: The wind turbines are planned to be connected to the Aronkylä electricity substation, 8.5 km away. The electricity will be transmitted to the Teollisuus-Aro substation via underground cables. The underground cables will be dug into the ground to a minimum depth of approximately 0,7 m and will be placed mainly alongside existing roads and service roads to be built.

Description of the wind farm structures: The wind turbine consists of a steel cylindrical tower mounted on the foundations, a rotor with blades and an engine room. Wind turbines have different construction techniques, which include all-steel, concrete, lattice and concrete and steel. With the current technology, wind turbines require areas of about 0.5 ha to be built. This area will have to be completely cleared of trees, levelled and strengthened. The construction technique will depend on the construction technique chosen. The height of the tower of the wind turbines considered in this project will be between 155 and 166 metres and the rotor diameter between 150 and 170 metres.

Linkage of the project with other projects in the vicinity: Description of other projects.

Planning status and timetable: The preliminary design of the project has been carried out by Megatuuli Oy since 2012. The technical design of the project is being carried out in parallel with the environmental impact assessment, and will continue and be refined after the assessment procedure. The plans and permits required for the project are described in chapter 6. The area is already covered by a legally binding wind energy master plan, under which building permits have already been granted for the construction of the turbines under project option VE 0.

The indicative timetable for implementation is as follows:

- EIA process 2017-2018
- Technical design v. 2017-2018
- Site construction and erection of the first wind turbines v. 2019
- Completion of the entire site v. 2020

The project manager has concluded land lease agreements with landowners in the project area.

Relationship with plans and programmes: References to relevant plans and programmes, such as

- Climate and climate change prevention: Energy 2020 - A strategy for a competitive, sustainable and secure energy supply in the EU; National Energy and Climate Strategy
- Nature conservation: Natura 2000 network; National Biodiversity Conservation and Sustainable Use Strategy 2012-2020
- Land use: National land use objectives; South Ostrobothnia Regional Programme and its implementation plan; South Ostrobothnia Wind Energy Study 2012; South Ostrobothnia Regional Plan

5.2. EIA procedure and participation

This part of the EIA programme includes information about the purpose, objectives as well the needs for the assessment. It includes also the presentation of the stages of the assessment procedure, which parties are involved and who the project promoters and contact authorities are.

Concerning **interaction and participation**, the document states that the EIA procedure is an open process in which all citizens whose conditions and interests, such as housing, work, movement, leisure time or other living conditions, may be affected by the implemented project, can participate.

Citizens can:

- present their opinion on the need to investigate the project's effects when the project's evaluation program is pending
- present their opinion on the content of the evaluation report, such as the adequacy of the investigations made in connection with the communication of the evaluation report.
- Opinions and statements can be submitted to the Southern Ostrobothnia ELY centre which acts as a contact authority.

There is a **public meeting** on impact assessment in December 2017. The project and assessment program will be presented at the event convened by the liaison authority. The public has the opportunity to present their views and questions at the event. The goal of the public meeting is to map out the concrete effects that local residents and users of the area want to be taken into account in the evaluation. The evaluation program and report, the announcements, as well as the liaison authority's statement and reasoned conclusion can be viewed on the liaison authority's website.

The **timetable for the EIA procedure** is planned to be

- EIA evaluation program at the end of 2017
- Public meeting in the EIA program phase
- Statement of the contact authority at the beginning of 2018
- EIA report April 2018
- Reasoned conclusion summer 2018

5.3. Description of the current state of the project area

Housing, recreation and leisure: There are no residential or holiday buildings in the project area. A construction permit has been granted for the project area for a to the wind measuring mast. The nearest building is a forest sauna, located approximately 90 meters from the project area and approximately 1 kilometer from the nearest planned wind power plant.

Seven holiday apartments are located within a two-kilometer radius of the power plant sites indicated in the partial general plan. The buildings are not special in terms of building history or art or require protection. The nearest building of cultural and historical value is the Hämes-Havunen peasant house, located approx. 3.5 km from the planning area.

Dog enthusiasts and hunters have their own shed in the area. The Kauhajoki hunting club's church village branch operates in the area. In the planning area, grouse and moose hunting is practiced in particular. A large number of landowners have leased the hunting rights of their land to Kauhajoki Metsästysseura ry.

A snowmobile route is indicated in the provincial plan to the north of the area. The nearest marked snowmobile route runs about 35 meters from the planned wind farm, but the route will be moved. Public recreation areas are not located in the project area. On the northern edge of Sikarämäkä, at a distance of about 520 meters from the project area and about 1.2 kilometers from the planned wind power plant, there is a shed used by Suomen Latu and Kauhajoki parish, which has had about 300-500 visitors per year.

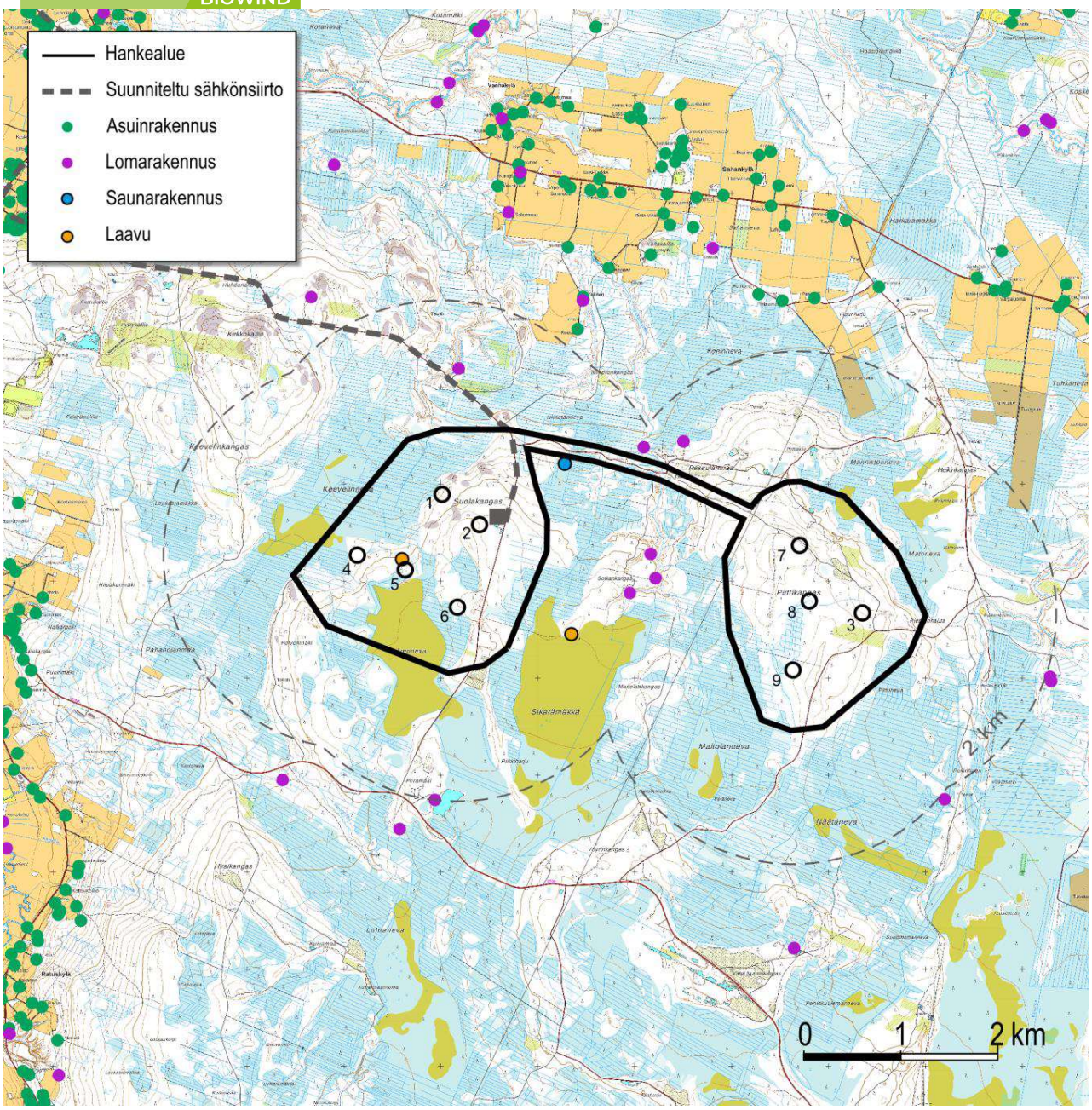

Figure 6. The current building stock in the vicinity of the project area. The figure also shows a 2 km distance zone from the planned wind turbines.

Transport: The private Keevelintie road runs through the project area in a north-south direction, which serves as a route for forestry equipment and recreational use in the surrounding area. There is little traffic, less than 100 cars per day. It is crossed by the east-west oriented Ressulanmaa forest road. The eastern edge of the project area is flanked by the Pirttikangas forest road. There are no roads classified as connecting, regional or main roads located in the area. The project area can be

reached from national road 44 via the connecting route Nummikankaantie (yt 6700) - Keevelin metsäautotie.

Suolakangas area already has a fairly comprehensive network of private roads that can be used to transport wind turbine components. Parts of wind power plants can be transported forward using the highway and trunk road network. The closest weight-limited bridge in the main road network is in the northern direction in Kurikka. The assumed direction of transport is from the west from the direction of national road 67 to highway 8. All of these are asphalt surfaced up to the private roads leading to the wind farm. Yhdystie 6700 is a good level road that does not really have any obstacles for special transports.

Vaasa airport is located approximately 80 km away and Tampere airport 130 km away from the project area. Seinäjoki airport, from which charter flights fly, is located approximately 40 kilometers away, and Kauhajoki small airport approximately 7 kilometers away from the project area. On July 10, 2017, the wind turbines planned for Suolakangas have received airworthiness directives. Statements have been sought for wind turbines 250 meters high. According to the statements, the planned wind turbines will have no impact on the height restriction surfaces of Finavia's airports.

Land ownership: The area is mainly owned by private landowners. In addition, there are areas in the area owned by Kauhajoki Parish Council and Kauhajoki Joint Forest. There are about 90 landowners in total. The project manager has entered into land lease agreements with the landowners of the project area.

The zoning situation: In the project area, the Regional Land Use Plan is valid. The western edge of the project area is located in the tourism attraction area. In addition, the area is located in the peat production zone (tt-2). The northeast corner of the project area is designated in the provincial plan as a water body requiring special protection. The groundwater area also extends to the project area on its eastern edge.

To the south-west of the project area, an area important for the preservation of the cultural environment or landscape (the nationally valuable Hyypänjokilaakso landscape area), a target area for rural development and a nationally significant culturally historically valuable site and recreation/tourism site (Hämes-Havunen) have been designated in the regional plan to the southwest of the project area. On the western side of the project area, the provincial plan includes the markings of the Sotka motor sports track and the recreation area. To the north of the project

area, there is an important area in terms of nurturing the cultural environment or landscape (provincially valuable cultural landscape of Sahankylä) indicated in the provincial plan.

South Ostrobothnia's Phase I regional plan has entered into force on November 22, 2016. In this, a wind power area (Vöyrinkangas) has been assigned to the Suolakangas area. After the phased county plan proposal was made visible, the part located on the east side of the 400kV power line was removed from the Vöyrinkangas wind power area, where the complex comprising four power plants is located in Suolakangas' plan proposal.

In the project area, the Suolakangas wind power sub-master plan is valid, which was approved by the Kauhajoki city council on March 2017. It enables the construction of a maximum of 9 wind turbines with a total height of 230 meters in the area. The total power of the wind farm is a maximum of 30 MW.

Landscape and cultural environment: The area belongs to the agricultural region of South Ostrobothnia which is characterised by flat bottoms, wide river valleys cleared for cultivation. The strongest in the building tradition are the strip villages located near the river running through the middle of the valley. The project area is an uninhabited ridge bordering the farmland. The landforms in the project area are gentle. The landscape of the planning area is formed by a swamp and a commercial forest, and the human cultural impact is mainly seen in ditches, forest roads and traces of the management of the commercial forest.

The elevation of the area is a relatively flat ridge rising from the low landscape of the Kauhajokivarsi valley. The highest points in the area are the rising ridges in the eastern part of the planning area, which, however, do not stand out significantly from the terrain as well-defined hills. There is a flat marsh at the edges of the area.

The planned wind power area is located on the northeast side of the nationally valuable Hyypänjokilaakso landscape area. At its shortest, the distance of the project area from the nationally valuable landscape area is about 2 km, and from the landscape management area established in the area in accordance with the Nature Conservation Act, about 3 kilometers. The distance from the nearest planned power plant to the border of the landscape management area is approximately 3.5 kilometers. In the regional plan of Southern Ostrobothnia, the areas of Kainasto and Kyrönjokivarre, the riverside landscape of Päntänee, Sahankylä and Nummijärvi with their shore areas have been designated as important areas for the preservation of the cultural environment or landscape. These

areas are located at a distance of 2-11 kilometers from the project area. A new demarcation has been proposed by RCSO for Hyypänjokilaakso's nationally valuable landscape area, which conforms to the boundaries of the landscape management area according to the Nature Conservation Act. The demarcation does not include the northern part of the area, which has a typical rural landscape. In addition, Sahankylä has been assessed as a locally significant cultural environment.

An inventory of ancient remains was carried out in the area of Suolakangas in 2014 and it was supplemented in 2015 to cover power station sites and new road lines according to the final plan of the wind power park. In the inventories, several ancient remains from the historical period (tar pits) were found in the area, four of which are located in the planned project area.

Natural environment, soil and bedrock: The bedrock of the area consists of hard, acidic, deep rock species common in Finland. The bedrock in the area is mainly porphyry granodiorite, granite on the northeastern and southwestern edges. Even in rocky areas, the bedrock is covered by a layer of soil. The soil in the area is mostly moraine, sand and rocky soil covered by a thin layer of soil. The project area has a soil extraction permit for an area of approx. 18 ha, the soil type of which is sand.

Natural environment, surface and groundwater: The project area belongs to the Kyrönjoki watershed. From the southwestern part of the area, the water flows into Kauhajoki, from the central part to Sotkanluoma, and from the northeastern part to Kyrönjoki through Ikkälänjoki. There are no natural lakes or rivers in the project area. A natural stream and the Sotkanluoma, a particularly valuable natural site designated by the Forest Act, run through the area for about 200 meters at the Ressulanmaa forest road. The site is also a valuable wind deposit. There is a small pond along the Keeveli forest road, which was created as a result of taking soil. The area's peat-based forests and bogs have been drained. The central parts of Polvenneva, located in the southwestern part of the area, are ditch-free swamps.

The Eastern part of the project area is located in an important groundwater area of 29 hectares. The groundwater area is 8.02 km2, of which the formation area is 3.24 km2. It is estimated that 3,500 m3/day of groundwater is formed in it. The groundwater area starts at a distance of about 200 meters from the planned wind power plant. No springs have been found in the project area, but there are water wells on the canvases.

Vegetation and habitats: The project area is located on the borders of the Southern Boreal and Middle Boreal zones, where the warming effect of the coast is no longer as clear as closer to the coast. The vegetation and habitat types of the project area have been investigated in connection with the nature inventories carried out in the area. Mineral soils are barren in the area. The most typical type of forest in the area is a dry forest, where the main tree species is pine, the understory is birch and spruce, and the main species in the canopy is blueberry, in addition, heather. There is fresh fabric on the lower levels of the terrain at the edges of the swamps, and in small depressions that collect moisture, the vegetation can be locally richer. There are no fields or culturally influenced vegetation in the area.

Vegetation and habitats, birds: The birdlife of the area has been mapped in nature surveys. In the project area or in its vicinity, 11 bird species of Annex I of the Birds Directive have been observed or are nesting (mute swan, bee hawk, crane, coot, tern, pygmy owl, barn owl, spinner, liro, barn owl). In addition to these, the stone pocket, which is classified as endangered in the national endangered classification, and the meadow hornet, which is something to watch out for, nest in the area. Among the species of birds of prey nesting in the area is the common goshawk. The woodcock bird population in the area is moderate. Species of mature or old forests and burrowing birds were scarcely observed in the inventory due to the small number of these environmental types. The breeding birds of young forests and nurseries are quite scarce in the area, specially managed pine nurseries have scarce birds.

Migratory birds in the project area have been investigated with surveys of birds' fall and spring migration and based on the monitoring of spring migration of birds prepared in connection with regional planning. There is no significant bird migration route across the planning area, and there are no migration control lines in the area. To the west of the project area there are several significant migratory resting areas for birds (including the fields of Kainastonjokilaakso). However, the birds that visit these areas probably come from the north in autumn and from the south and southwest in spring, so they do not pass through the project area. More detailed information on migratory birds will be compiled in the EIA report.

Vegetation and habitats, other fauna of note: In nature surveys, flying squirrels, bats and frogs have been mapped in the area. No signs of flying squirrels have been observed in the project area, and there are very few forest patterns suitable for breeding habitats for flying squirrels. There have also been no sightings of bats or water wings in the area. There is also no habitat for cape frogs in the area. Presumably, the usual forest mammal species, such as hares, foxes and moose, move and feed in the area. The marten is a rare beast in the area, whose territory is tens of square km wide. Badgers also roam the forest areas. Individual wolverines, lynxes and wolves have also been sighted.

Vegetation and habitats, nature conservation areas: In the project area, there are no Natura 2000 areas or other significant nature conservation areas in its immediate vicinity. The nearest Natura area is Iso-Koihnanneva, which is located in the southeast of the project area, approximately 2.5 km from the nearest planned wind power plants. A Natura assessment has been prepared for the project. The ELY center issued its statement on the assessment on September 2016, according to which the Suolakangas wind power areas will not cause significant effects on the habitat types and species of the Natura area that are mentioned in the habitat directive.

Vegetation and habitats, FINIBA sites: The FINIBA areas are Finland's important bird areas, defined in the mapping of the Finnish Environmental Center and BirdLife Finland. The FINIBA project is not a conservation program, but a large part of the FINIBA areas belong to the bird water conservation program or the Natura 2000 network. There are no FINIBA areas in or near the project area. The nearest FINIBA area is a resting place for migratory birds, Kainastonneva, is located about 12 kilometers from the planned wind turbines. In particular, wood geese use field meadows as their resting place during the migration season.

Vegetation and habitats, wind conditions: The area's wind speed estimates are based on measurements over a two-year period. According to the data collected, the area is windy enough for wind power production. According to the evaluations, it is possible to achieve an annual production of even more than 7500 MWh.

5.4. Impacts to be assessed and assessment methods

The Figure 7 summarises all of the environmental impacts which will be assessed in Suolakangas.

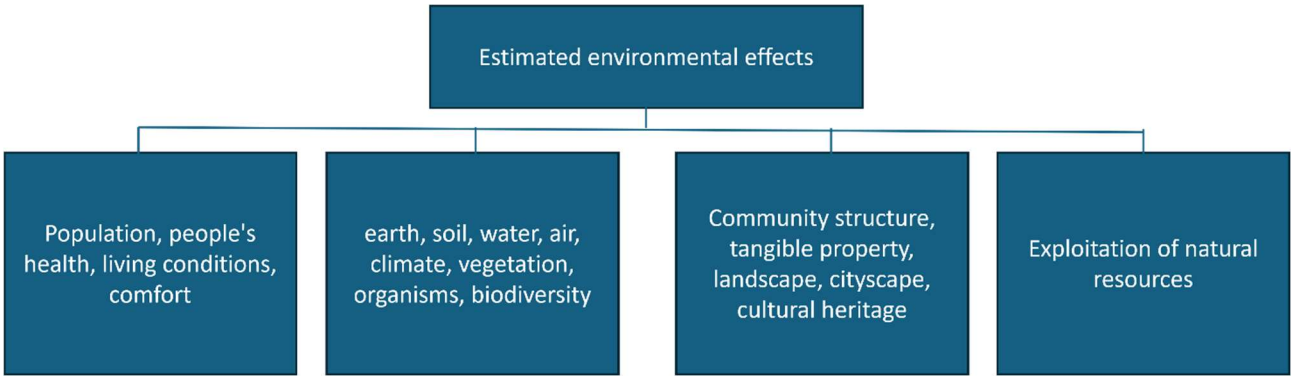

Figure 7. Estimated environmental effects in Suolakangas EIA.

5.5. Permits and decisions required for the project

There are several different permits and decisions required for the project, these include permits for

- Planning and zoning
- Building permits
- Construction permit under the Electricity Market Act
- Other construction permits
- Environmental permit
- Air traffic control permit
- Electricity grid connection agreement
- Agreements with landowners
- Natura assessment

5.6. Annexes of the EIA programme

The EIA programme includes all relevant information about the project, objectives of the environmental impact assessment procedure and participation, description of the current state of the project area, the effects to be assessed and the assessment methodology as well as the permits and decisions required for the project. The necessary list of annexes in Suolakangas' case included a schematic map, wind energy sub-area description, inventory of ancient sites, baseline assessment of natural values, autumn migration survey of birds, spring migration survey of birds, landscape

study and landscape impact assessment, visual field analysis and photographic evidence, noise report, shadow modelling and ice risk assessment. [22]

6. Suolakangas wind farm EIA process – EIA Report

In the environmental impact assessment, the magnitude of changes resulting from three different project alternatives (VE 0+, VE 1, and VE 1+) is compared to the alternative studied in the Suolakangas partial master plan (VE 0). The number and locations of the wind turbines are the same in all alternatives as presented in the Suolakangas wind power partial master plan, with only the dimensions, capacities, and sound power levels of the turbines differing from those studied in the wind power partial master plan. In addition, the environmental impacts of electricity transmission are also examined.

The EIA Report includes a vast study of all the possible impacts the wind farm would have in the area. At the end, all of the studies were put together for a comparison of alternatives, assessment of the significance of impacts and probability of project implementation. These findings are summarised here.

6.1. Comparison of alternatives

In the EIA, the effects of different project alternatives are evaluated in relation to the zero alternative, i.e. to what has been assessed in connection with it's sub-general planning. In this, the effects of the project's various alternatives are summarised.

Project option VE0 is an option studied in the partial master plan, for which there are legally valid construction permits for the power plants. As a result, the effects of project alternatives VE0+, VE1 and VE1+ do not significantly differ from the alternative studied and approved in the formula. All investigated options are feasible in terms of environmental effects.

[22] Ymparisto.fi. Arviointiohjelma https://www.ymparisto.fi/fi/osallistu-ja-vaikuta/ymparistovaikutusten-arviointi/suolakankaan-tuulivoimahanke-kauhajoki

6.2. Examples of assessments made for the EIA Report

The variety of different assessments made is very wide. Underneath you can find figures from the actual Suolakangas EIA Report.

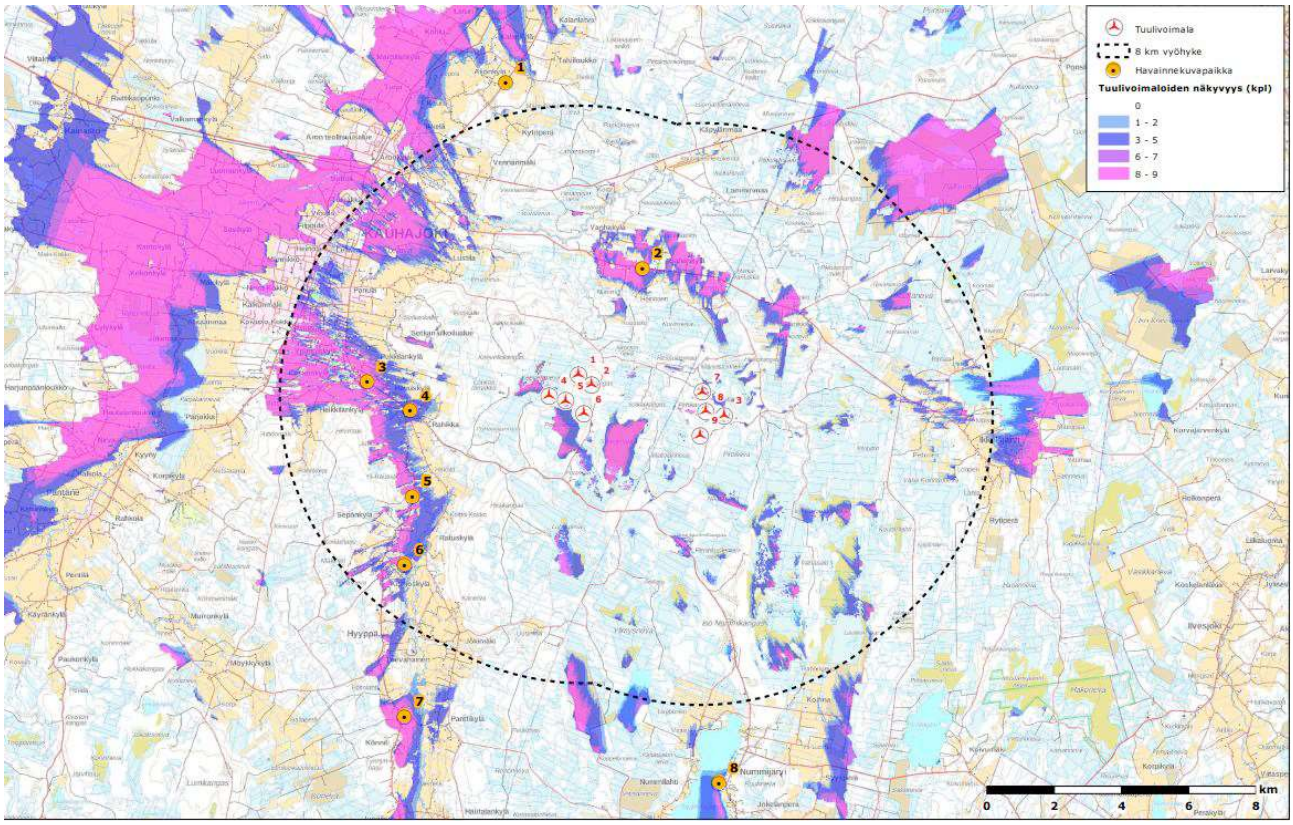

Figure 8. Excerpt from the visibility analysis of the partial master plan. Source: City of Kauhajoki 2017, Visibility Analysis of the Suolakangas Wind Power Partial Master Plan.

Figure 9. Main bird migration routes in Suupohja, with the Suolakangas project area marked with a black circle (Source: Suupohja Ornithological Association, 2013)

Laji	Yksilömäärä
Ampuhaukka	1
Anas sp	4
Anser sp	n.60
Buteo/Pernis	6
Haarapääsky	8
Hemppo	2
Hiirihaukka	9
Isolepinkäinen	1
Järripeippo	n.120
Kaakkuri	2
Kalalokki	9
Kahlaajalaji	n.30
Kalasääksi	2
Kangaskiuru	1
Kanahaukka	4
Kapustarinta	30
Keltavästäräkki	5
Keltasirkku	56
Kiuru	n.180
Kottarainen	86
Kulorastas	19
Kuovi	42
Kurki	234
Käki	1
Käpytikka	7
Käpylintulaji	n.60
Laulujoutsen	83
Laulurastas	27
Lyhytnokkahanhi	4
Liro	7
Maakotka	3
Mehiläishaukka	4
Merikotka	2
Metsähanhi	246
Metsäkirvinen	87
Metsäviklo	2
Mustarastas	6
Naakka	231
Naurulokki	68
Niittykirvinen	46
Närhi	5
Pajusirkku	6
Peippo	758
Peippolaji	n.340
Piekana	11
Pikkulintu	n.160
Punakylkirastas	27
Punatulkku	4
Rantasipi	1
Rastas sp	n.230
Ruskosuohaukka	2
Rautiainen	17
Räkättirastas	n.240
Sepelkyyhky	173
Sinisuohaukka	9
Taivaanvuohi	2
Tavi	17
Tervapääsky	8
Tilhi	n.35
Tuulihaukka	17
Töyhtöhyyppä	73
Urpiainen	n.55
Uuttukyyhky	4
Valkoviklo	6
Varis	47
Varpushaukka	28
Viherpeippo	5
Vihervarpunen	n.330
Västäräkki	19

Figure 10. Bird species observed during spring migration in 2015 (Source: Finnish Nature Information Ltd, 2015)

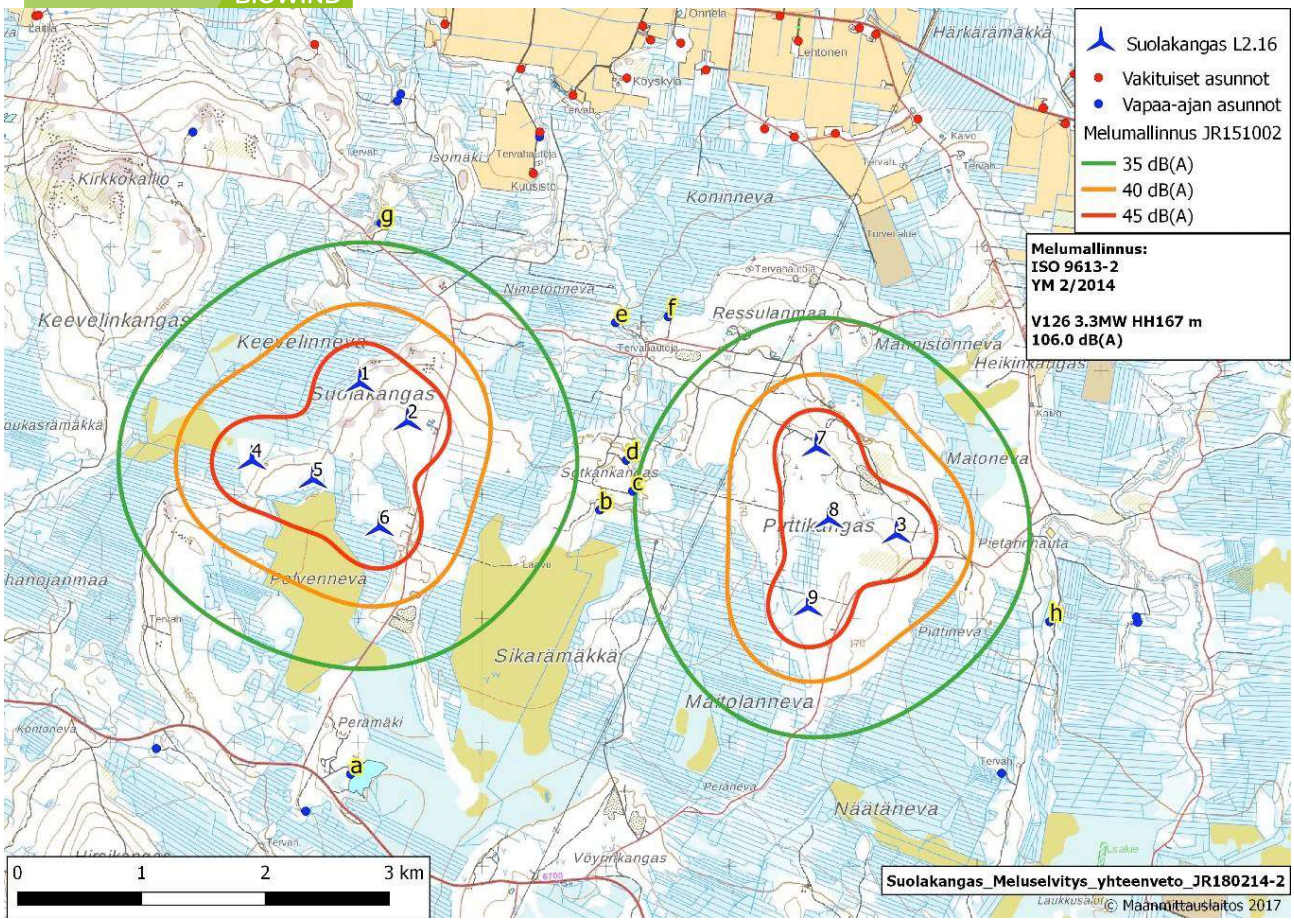

Figure 11. Noise Modeling, VE0. The hub height of the turbine is 167 meters, the rotor diameter is 126 meters, and the overall height is 230 meters. The turbine model is Vestas V126 3.3 MW, with a sound power level (LWA) of 106.0 dB

6.3. The need for further research and monitoring

In accordance with the Environmental Protection Act, the person in charge of the project must be aware of the environmental effects of their activities. The aim of environmental impact monitoring produces information about the effects of the project and initiates the necessary actions if there are significant disadvantages to the operation. Obligations regarding monitoring are determined in the permit conditions of the project's permit decision, and the environmental authority approves the official monitoring program. In the EIA report, a proposal for a monitoring program for the project must be presented. The monitoring covers the most important effects on the environment that have emerged during the preparation of the environmental impact assessment. The monitoring provides information on the impacts during the construction and operation of the wind turbines, which

produces information for the project's risk management, the person in charge of the project and various stakeholders. In addition, the monitoring produces additional information to be used in the planning and decision-making of similar wind power projects in the future.

In the Suolakangas wind farm project, the need for an environmental permit is determined by the local authorities, i.e. the city of Kauhajoki. An environmental permit in accordance with the Environmental Protection Act is required if the operation of the wind turbine may cause an unreasonable burden on the neighbouring population as referred to in the Neighbourhood Relations Act. Based on the prepared noise and flicker modelling, no project alternative will cause such effects in this project.

6.3.1. Noise

If the plans for the project and the locations of the wind turbines change significantly, the noise modelling must be updated accordingly to comply with the guidelines provided in Finland. After the wind farm is completed, operational noise from the wind farm can be monitored if necessary, through measurements at locations assessed to be most exposed to noise impacts. When selecting measurement points and conducting the measurements, the effect of weather conditions on wind turbine noise, as well as other background sounds in the area and guidelines for measuring wind turbine noise, must be taken into account.

6.3.2. Shadow flicker

If the project plans and wind turbine locations change significantly, the shadow flicker modelling must be updated, and the possibility of actual flicker occurrence for those most exposed should be assessed, for example, through a visibility analysis. After the wind farm is completed, operational shadow flicker effects can be monitored through measurements if necessary.

6.3.3. Living Conditions and Comfort

The impacts on people's living conditions and comfort can be monitored, if necessary, for example, through noise measurements. In addition to this, it is possible to conduct follow-up surveys or

interviews with residents in the vicinity of the project about the perceived effects of the wind farm and their significance. Any complaints related to the wind farm and their causes should also be tracked. The number of game animals and changes in their populations in the area can be monitored in cooperation with hunting clubs and wildlife management associations, for example, through annual follow-up meetings and by establishing wildlife triangles (a national wildlife research method) in the project area.

6.3.4. Birdlife monitoring

To verify the potential impacts of the project on birdlife, monitoring should be conducted in the area surrounding the wind farm during the construction phase and the first few years of operation. The duration of bird monitoring will ultimately be determined by the birdlife impacts observed in the early stages of the project, but in general, a monitoring period of at least three years can be estimated (Ministry of the Environment, 2016). Birds are relatively good indicators of biodiversity because they respond quickly to changes in their habitat. As habitats change, the effects can be seen in the abundance ratios between species, which can be demonstrated through monitoring.

In the Suolakangas project, the primary focus should be on monitoring the breeding populations of species identified as the most sensitive to the project, particularly the capercaillie and the goshawk, both present in the project area, and a threatened bird species found in the Natura area outside the project. Field studies would include capercaillie lek surveys in April-May, monitoring of goshawk breeding success in May-June, and flight monitoring of the threatened bird species (lekking season in late winter and feeding flights in early summer), as well as breeding success monitoring with authorized nest inspectors in June.

For the monitoring of other breeding birds, the methods chosen during this environmental impact assessment (EIA) process should follow the bird monitoring observation guidelines of the Finnish Museum of Natural History, ensuring comparability of the results with the EIA report and generalizability to future wind power projects.

In addition to breeding bird surveys, it would be useful to gather information on bird species that may have collided with wind turbines and their numbers. Searches for birds that have collided with the turbines should be conducted by carefully inspecting the nearby areas around the turbines (within a radius of about 50-200 meters) at regular intervals in spring, summer, and autumn.

The results of the birdlife monitoring will be presented in annual reports. Each report will include, among other things, detailed descriptions of the methods, the locations of survey areas, the results, uncertainties, and conclusions.

6.4. EIA Report Annexes

These are the reports that were included in the Suolakangas EIA Report.

Annex 1. Liaison authority's statement on the EIA program

- In statement, liaison authority notes that the project, its origins, objectives and location are clearly described. Liaison authority emphasises that the project must be able to be located on a map, which was successfully done in this scenario. In addition, wind turbines, electricity transmission and service roads - is well illustrated by the project description. Other issues discussed in the statement include permits and decisions required for the project and evaluation of impacts

Annex 2. Summary of wind energy sub-urban development plan of Suolakangas

- Summary of wind energy sub-urban development plan is made up of 6 headlines. The starting point of the project, planning phase, stages in the planning of the sub-regional development plan, the objectives of the sub-area plan, description of the sub-urban development plan and its implementation.

Annex 3. EIA-phase viewshed analyses, summary for the landscape impact assessment 2017

- The analysis describes visually areas, where landscape impact assessment affects. Areas are marked according to where the entire rotor of the wind turbine is visible.

Annex 4. EIA-phase viewshed analyses and photomontage 2017

- This section includes overlook area analyses and photomontage descriptions and justification. Analysis is based on photos that are taken with digital camera, on which future

wind turbines have subsequently been modelled. The most significant and obvious impacts will be on those areas, where, according to the viewshed analysis, the power plants are clearly visible. As the distance increases, the visibility of the power plants decreases and their dominant feature of the landscape decreases.

Annex 5. For public authorities only

- This section is visible only for public authorities.

Annex 6. Monitoring spring migration of birds in wind energy areas of the regional plan 2013.

- Spring migration monitoring focused in particular on the observation of large birds (swans, geese, cranes, birds of prey) that are sensitive to the construction of wind farms. The particular interest was the location of migration arteries around planned wind farms. This report examined the spring 2013 migration season in two wind turbine construction area: Mustaisneva and Suolakangas areas of Kauhajoki.

Annex 7. Noise assessment, summary 2018

- The noise assessment collected information on the characteristics of wind turbine noise, noise guidelines, local conditions and modelling methods. The modelling and reporting carried out in accordance with the guidelines published by the Ministry of the Environment in February 2014. A summary consisted of the baseline data and methodology of the study, the observation of the estimated noise impacts, and the prevention and monitoring of impacts.

Annex 8. Shadow modelling of Suolakangas 2017

- This section contained in 6 shadow modelling which went through calculations of assumptions for shadow. Shadows are taken into account when the sun is at least 3 degrees above the horizon. A situation where the wing covers at least 20% of the sun is considered a shadow. The calculation of the shadow model takes into account the elevation of the project

area, the location of the wind turbines, the pole heights and rotor diameters of the wind turbine and the time zone of the project area.

9. Announcement on the EIA report for the Suolakangas wind power project.

- An assessment report is a document that sets out information on the project and its alternatives and an integrated assessment of their environmental effects. All interested parties are invited to comment on assessment report. Also written contributions are possible within a certain period of time, which is always defined by given date.

10.Request for comments on the EIA report for the Suolakangas wind power project.

- Request for comments are always sent in written form for to the parties concerned. The deadline for comments is always predetermined after which comments will not be received.

11.Reasoned conclusion of the Liaison authority on the EIA report for the Suolakangas wind power project.

- Lastly, all the relevant details are collected for the conclusion of the Liaison authority on the EIA report. Report contains summary of comments and opinions received. Conclusion also deals all the impacts to the biodiversity that have been identified during the project. [23]

6.5. Alterations made to the original plans

Before the EIA process, **the originally planned location for the park was changed.** This was done already after the first Participation and evaluation plan (OAS) was published. The OAS is a plan for the participation and evaluation procedures in the different stages of the zoning and for evaluating its effects.

[23] Ymparisto.fi. Arviointiselostus liitteineen https://www.ymparisto.fi/fi/osallistu-ja-vaikuta/ymparistovaikutusten-arviointi/suolakankaan-tuulivoimahanke-kauhajoki

The most critical factor in this was the nationally valuable landscape are of the Hyypänjokilaakso valley adjacent to the site, as mentioned also in the EIA programme and report. The project would have had a major impact on the landscape. After the first OAS was published, changes were made to the project which substantially reduced the landscape impact.

At the same time with this, the impact of the project on the ground nesting eagle, which breeds relatively close to the nature reserve, was examined in greater detail. In addition, the project was adapted to take into account the needs of holidaymakers and natural and archaeological values (forest sites, breeding hen harrier, old tar pits).

The need to reconcile the impacts therefore arose from the need to protect the nationally valuable landscape area of the Hyypänjokilaakso valley and the Natura 2000 sites of Iso-Koihnanneva and Ylimysjärvi.

7. Study Visit Summary

The A3.4 Study visit in Finland took place on October 1st and 2nd 2024. The visit included different presentations, a visit to the Suolakangas wind farm and a Steering Committee Meeting. The Steering Committee Meeting was planned to take place in June 2024 in Belgium, alongside a workshop, but due to the sudden absence of the Lead Partner in Belgium, the project partners decided to re-arrange the Steering Committee Meeting in Finland.

On October 1st, the project consortium travelled from Seinäjoki to Kauhajoki, where the meeting took place at local basketball arena, IKH Arena, also available as a conference centre. The Mayor of Kauhajoki, **Niku Latva-Pukkila**, welcomed the visitors to the city and gave the participants general information about the city. After the welcoming speech, the hosting partner representatives, **Päivi Tuisku** and **Adam Lenkiewicz** from the Regional Council of South Ostrobothnia, gave an overview of the arrangements and the agenda of the meeting.

After the general introductions, Päivi Tuisku presented the Regional Plan and the planning process in South Ostrobothnia and in Finland in general. This approach has already been introduced in the previous parts of this paper.

The next speaker was **Marketta Nummijärvi**, Development Manager and Land Use Planner of the City of Kauhajoki. Her presentation concentrated on the wind power projects in Kauhajoki and the measures taken to increase the social acceptance. Her presentation started off with the current situation wind power projects in Kauhajoki and nearby areas, introducing as well the situation with solar power projects. The already built wind parks are 19 turbines with 64 MW at the moment, and they have 5+ renewable energy projects in the planning, 390 MW wind power, with an estimate of the production capacity of the wind power projects in the area being 8,6 GW. Kauhajoki has set its own guidelines for wind park planning. Marketta presented also the steps of the industrial renewable energy production in Kauhajoki and how the development begun.

In general, the city welcomes renewable energy projects but with some conditions, which are

- Preventing noise impacts: 2 km distance to housing & 35 dB to holiday homes
- Prevention of major harmful impacts in nominated landscapes & nature: national parks, nationally valuable landscape, major recreational lakes
- Pre-assesment of major environmental impacts in early stage -> strategic outlines for the projects
- It is crucial to have an open process with proper hearings and participation
- Different intrest groups' concerns, questions and wishes should be met with respectful manner avoiding underrating
- It is necessary to talk about projects and their impacts in an understandable and honest manner – no exaggerating, neither underrating
- All human actions have impacts so 0-tolerance is not an option for renewables either

Marketta also presented in detail the steps that were taken in the Suolakangas wind power project, and the assessments that were made, concerning e.g. landscape, visibility, noise, shadow, recreation, animals and ground water when implementing the project.

The next presenter was **Juha Herrala**, the Mayor of Isojoki. He gave a presentation on the wind power projects in the municipality of Isojoki and the general situation of wind power in Finnish municipalities. At the end of June 2024, there were a total of 1660 operating wind turbines in Finland. 60 new wind turbines were built (377 MW) during the first six months of 2024 throughout Finland. At the end of June 2024, Finland's wind power capacity was 7 322 MW. South Ostrobothnia has 12% of the whole Finnish capacity.

Isojoki municipality has 1800 inhabitants on 647 km². The municipality's annual expenditure budget is 6,5 MEUR with an annual investment budget of 1 MEUR. Over 10% of funding comes directly from wind power property taxes. Isojoki has 29 wind turbines up and running and has building permits ready for 45 turbines. Planning is on-going for 100 new turbines.

After this presentation, we got an overview of the Finnish situation from a researcher, **Jakob Donner-Amnell** from the University of Eastern Finland. He has been part of a study called Status and outlook for the acceptability of wind power in Finland 2024 [24]. The study was on which factors influence acceptability and what can be learnt from it. For the study, a total of 46 from 22 different organisations gave their input in a survey as well as in 19 individual and 7 group interviews.

The research found out that even though the general acceptability of wind energy is on a high level in Finland, it contains also challenges. Ability to control the wind energy growth and local benefits play a key role in the acceptability. If sufficient measures are not implemented and permitting is speeded up, local acceptability can shrink in the future and slow down wind power development. Other reasons can be for instance low electricity price overall and rising costs of wind energy deployment. These reasons could also decrease investments or shift the focus more on solar power, offshore wind or other countries with better incentives, which could have an impact on green industrial projects. It could also be seen that the meaning of 'wind power acceptance' is expanding beyond the meaning of wind turbines and wind farms more towards questions linked to acceptance of the whole green transition and related energy and industry infrastructures.

[24] Tuulivoiman hyväksyttävyyden nykytila ja näkymät Suomessa
https://erepo.uef.fi/items/30c9dab9-8164-4242-b046-8f3a52cc4fbf

The next presenter was **Taru Kaarlela**, Commercial manager of OX2 Finland, responsible for the Suolakangas wind farm. Her presentation started off with a presentation of the OX2 Group in general and especially in Finland going further into the Suolakangas wind farm. Her presentation included information especially concerning the active wind farm service agreements, wind farm stakeholders and wind farm management.

After Taru's presentation, the whole visitor group was able to leave the meeting premises and a bus transportation was arranged to the Suolakangas wind farm. From the site, the whole wind farm was visible and the group was able to visit one wind mill also inside it. The group was divided into smaller groups and Taru was inside the wind mill and was able to show how the wind mill is running from the inside. This informative site visit concluded the official program of the first meeting day. After this, we visited a natural site, Katikan kanjoni, and later had a joint dinner at the Ravintola Krouvi in Kauhajoki.

The second meeting day was kicked off by the Steering Committee Meeting, which took place among the project partners, without the stakeholders. After the Steering Committee meeting, the stakeholders joined, and we were able to continue with the study visit program.

At first, we had a presentation from **Bart Decreaemer**, Coordinator Renewable Energy from the partner organization Province of West-Flanders in Belgium. He presented a perception survey of wind farms conducted in their area. This was done in order to measure actual experience on living near wind farms instead of just measuring acceptance on a general level. In the survey, inhabitants near wind farms were questioned concerning their attitude towards sustainability and energy transition, experience in the run-up to the wind farm (communication, information, involvement), on their current perception of wind farm (nuisance, type, size, ratio to prior estimation) and their attitude towards future replacement/expansion of wind farm. The survey got 1857 responses in total.

The results show that 76% of local residents do not experience any nuisance from the wind turbines. For others, shadow flicker, noise nuisance and visual nuisance are the most important nuisance factors. Complaints are hardly ever reported and the attitude of residents towards the wind farm usually becomes more positive after completion. Two-thirds of the respondents are in favour of a permit to extend or replace the existing wind turbines and about half are in favour of a permit for

the expansion of the number of wind turbines at the same location. The closer one lives to the wind farm, the more nuisance one experiences and the more negative the attitude.

In general, it can be said that people want clear, honest, timely, and personal information. The individuals who contextualize information in a broader vision of energy policy are more positive towards the wind farms. It could also be seen that those who live in the neighborhood are more positive than the "average" Fleming.

The study visit presentations were finalized by a remote presentation from the Renewables Finland, where **Kimmo Kyrölä** presented the general situation of the energy mix and wind power in Finland and the planned growth in the upcoming years.

After the presentations, the study visit group left for a visit to the Lauhanvuori National Park where the group could see the wind power development in South Ostrobothnia with their own eyes from the observation tower where several big wind farms can be seen.

The study visit gathered altogether 41 people from 9 countries. These represented project partners, stakeholders and presenters from Finland. All the presentations that were held, were shared to the attendees of the study visit after the meeting so that they were able to use this information in their work also after the days. The study visit also gained press visibility. The main regional newspaper Ilkka-Pohjalainen and a local newspaper Kauhajoki-lehti published articles on the visit.

8. Insights and Feedback from Partners

After the study visit in Finland, the participants from partner organisations were asked to send feedback concerning the visit and answer the following questions

- Which were **the most insightful points for you** concerning the integration of environmental considerations into wind farms sitting plans (proximity to natural reserves and cultural sites, biodiversity sensitivity, and land erosion estimates, ensuring also alignment with spatial plans)?
- Were you able to find **similarities** between the approach in Finland / Kauhajoki and your own region? Please indicate, which.

- Which were the **key learnings for you** from the presentations, discussions and the site visit?
- Do you have **similar success stories** of well-developed wind energy projects in your region?
- Any other comments or learnings you would like to provide?

The answers below are divided by each partner and followed by a short summary of the answers. Requested feedback was received from all partners, except the the Polish partner Marshal Office of Świętokrzyskie Voivodeship.

8.1. Region of Western Greece (Greece)

The integration of environmental considerations into wind farm siting plans in the Region of Western Greece follows a multi-dimensional approach that balances ecological, cultural, and technical priorities. One of the key aspects is the establishment of buffer zones around natural reserves and cultural heritage sites to minimize disruptions and preserve their integrity. Biodiversity sensitivity is another crucial factor, addressed through detailed habitat mapping to identify migratory corridors and nesting sites, as well as scheduling construction activities to avoid sensitive breeding or migration periods. To mitigate these risks, preventive infrastructure design, careful planning of access roads, and revegetation initiatives using native species are implemented. Additionally, ensuring alignment with spatial plans facilitates the identification of suitable zones for wind energy development, reducing conflicts and streamlining the permitting process. Broad stakeholder consultations with local authorities, environmental agencies, and civil society further enhance the planning process, fostering trust and public acceptance.

The Region of Western Greece shares several similarities with South Ostrobothnia in its approach to wind energy development. Both regions prioritize biodiversity protection through habitat mapping and strategic scheduling of construction activities to avoid disturbing wildlife. Community engagement is also a shared focus, with efforts to involve local stakeholders early in the decision-making process and introduce benefit-sharing schemes to enhance public acceptance. Furthermore, both regions emphasize alignment with spatial planning, pre-identifying suitable areas for wind energy projects to ensure environmental sustainability and minimize conflicts.

Key learnings from the presentations and site visits in South Ostrobothnia include the role of the Centre for Economic Development, Transport and the Environment as a coordinating authority in wind energy projects. The Centre oversees environmental impact assessments (EIA), facilitates

consultations, and ensures stakeholder involvement, thereby enhancing transparency and project coordination. The use of innovative tools such as visibility analysis, shadow modeling, and noise measurement further strengthens the objectivity and reliability of environmental assessments. Additionally, the South Ostrobothnia Regional Land Use Plan serves as a strategic blueprint for long-term wind energy development, integrating priorities such as nature conservation, ecological sustainability, and cultural heritage preservation.

A notable success story in Western Greece is the Lithos Wind Farm in Kalavryta, Achaia. Operated by Enel Green Power, the 18.9 MW wind farm, equipped with 21 turbines, generates approximately 25 GWh of electricity annually, supplying power to around 2,646 households. The project significantly contributes to Greece's renewable energy targets and reduces CO_2 emissions by approximately 14,555 metric tons per year. Beyond its environmental impact, the wind farm supports local economic development through job creation, infrastructure investments, and financial contributions to municipalities and residents.

Finally, the Region of Western Greece is particularly interested in learning more about the social acceptance of wind energy in South Ostrobothnia, particularly regarding public reactions during the approval and operational phases of wind farms. Understanding the strategies used to address community concerns and enhance acceptance would provide valuable insights for improving local wind energy initiatives.

8.2. Zemgale Planning Region (Latvia)

Zemgale Planning Region emphasized the importance of integrating environmental considerations into wind farm siting plans, particularly regarding biodiversity conservation, cultural site protection, and land erosion assessments. They highlighted the necessity of aligning projects with regional and municipal spatial planning frameworks governed by the Land Use and Building Act. Public consultation was also noted as a crucial element in fostering social acceptance, while adaptive planning, supported by the Green Deal, was recognized as a driving force for sustainable energy transitions.

In comparing Finland's approach to their own, Zemgale Planning Region identified several similarities. Both countries incorporate Environmental Impact Assessments (EIA) to evaluate

potential environmental impacts and ensure alignment with spatial planning regulations. There is also a shared emphasis on protecting biodiversity and Natura 2000 sites, ensuring wind farms do not negatively impact protected species or habitats. Public participation and transparency play a key role in both planning processes, with Finland and Latvia mandating public involvement in environmental assessments. Additionally, both countries integrate wind energy development into their national renewable energy strategies, aiming for carbon neutrality by 2050 while balancing environmental protection and socio-economic growth. Noise and visual impact assessments, as well as strong legislative frameworks for energy planning, were also recognized as commonalities.

Key learnings from the presentations, discussions, and site visit included the significance of integrating wind energy projects into spatial planning, ensuring effective stakeholder engagement, and leveraging EIAs to assess biodiversity and cultural site impacts. The discussions highlighted how Finland successfully balances renewable energy goals with environmental protection while streamlining permitting processes to maintain high environmental standards. Managing noise and visual impacts was also emphasized as a critical factor in minimizing disturbances to nearby communities. The importance of adaptive management and continuous environmental monitoring was noted, as well as the value of cross-border learning and knowledge sharing through projects like BIOWIND.

The site visit provided insight into the practical challenges of wind farm implementation, such as logistical considerations in remote areas. It also showed innovative mitigation measures, including specialized turbine designs to reduce noise and shadow flickers, and the use of advanced technology for wildlife monitoring. Additionally, the role of regional authorities in overseeing projects was highlighted as crucial for ensuring alignment with national and local development goals.

Latvia has several successful wind energy projects, including the Latvian Wind Parks Initiative, a joint venture aiming to develop large-scale wind farms with a total capacity of 800 MW. The ELWIND Offshore Wind Project, a collaboration between Estonia and Latvia, is expected to generate approximately 3 TWh of renewable energy, demonstrating the potential for cross-border cooperation. The Kurzeme Offshore Wind Project, with a planned capacity of 1,000 MW, reflects Latvia's commitment to expanding its offshore wind energy capabilities. Additionally, Van Oord's investment in Liepaja is set to establish a world-class offshore wind support base, further contributing to Latvia's green energy transition.

Overall, Latvia's experiences align closely with Finland's wind energy development strategies, and the exchange of knowledge and best practices is seen as highly beneficial in advancing sustainable energy solutions.

8.3. Northern and Western Regional Assembly (Ireland)

Northern and Western Regional Assembly representatives were particularly surprised to learn about Finland's 2 km exclusion zone around wind farms. Another notable aspect was that Finland's regional spatial plans categorize "holiday homes" separately, applying different spatial planning criteria when assessing wind farm locations.

In comparing Finland's and Ireland's approaches, it was observed that the governance structures at local, regional, and national levels, as well as the ways these bodies interact, included similarities between the two countries.

Key takeaways from the presentations, discussions, and site visit included Finland's place-based approach to regional spatial planning and the observation that public acceptance of wind farms appears higher in Finland. This could be attributed to the country's larger land area and lower population density, allowing for a more dispersed placement of wind farms. Additionally, the wind farm site development process in Finland seems to progress more quickly than in Ireland.

Irish partners were also particularly interested in learning about district heating solutions applied in Finnish towns and the integration of hydrogen projects with wind farms, seeing these as potential areas for further exploration in their own region.

8.4. University of Patras (Greece)

Both regions prioritize the protection of sensitive ecosystems and species when planning wind farm projects. However, there are notable differences in their primary conservation efforts. While Finland focuses on safeguarding forested areas, the region of Western Greece places emphasis on preserving Natura 2000 sites and other ecologically sensitive zones. In both regions, biodiversity assessments and detailed mapping play an integral role in site selection.

Furthermore, both Finland and Western Greece employ GIS technology, environmental modeling, and other technological tools to guide their siting decisions. Additionally, EIAs are a mandatory requirement in both locations, ensuring that environmental considerations are systematically integrated into the decision-making process.

One of the most significant takeaways from the discussions and site visits is the importance of community and stakeholder engagement in wind farm projects. Early involvement of local residents and key stakeholders in the planning process enhances transparency and fosters broader acceptance of wind energy initiatives.

Another crucial factor is the avoidance of sensitive areas through the establishment of buffer zones. Maintaining adequate distances from protected areas, residential zones, and wildlife corridors has been instrumental in gaining social acceptance for wind energy projects.

Moreover, ensuring that projects comply with national regulations and EU directives, such as the Birds and Habitats Directives, is essential. Post-construction monitoring and adaptive management based on real-time data and new environmental insights further support sustainable wind farm development. These measures not only help mitigate environmental impacts but also contribute to increasing public trust and social acceptance.

Case of a successful wind energy project in Greece is the Agios Georgios Wind Farm, located on an uninhabited island in the Aegean Sea. This innovative project generates enough electricity to power approximately 40,000 households and is connected to the mainland via a 36.2 km undersea cable. The project showcases how large-scale wind farms can overcome logistical and environmental challenges while significantly contributing to Greece's renewable energy capacity.

Furthermore, ongoing initiatives aim to accelerate Greece's transition to renewable energy, with plans to generate enough power to meet the needs of nearly 200,000 households annually by 2026. Beyond energy production, these projects also focus on supporting local communities through investments in biodiversity conservation and infrastructure development. By promoting both environmental and economic sustainability, such initiatives demonstrate the potential for wind energy to drive long-term progress in the region.

8.5. Province of Flemish Brabant (Belgium)

Province of Flemish Brabant representatives were surprised by the distance between wind farms and nearby houses in Finland, which is set at a 2 km perimeter, whereas in Belgium, the standard distance is between 300 and 500 meters. They also noted that political acceptance in Finland is supported by a standard municipal tax, which generates annual revenues of approximately 20,000 to 30,000 euros per wind turbine, depending on its size.

In terms of permitting and impact assessments, Belgium follows a similar approach to Finland, making this an area of commonality between the two regions.

Key insights gained from the presentations, discussions, and site visit included the realization that social acceptance of wind energy projects is significantly higher than often assumed, with approval rates ranging from 75% to 95% among people living near turbines. However, it was suggested that political acceptance may present a greater challenge than social acceptance. Finland, and particularly Kauhajoki, was seen as an example of strong political support for wind energy development. This support is further reinforced by the municipal tax system, contributions to environmental funds, and a transparent approach to communication, permitting, and environmental concerns.

Belgium could potentially learn from Finland's cooperative approach, where several stakeholders actively engage in wind project development with extensive financial participation from citizens. This model could serve as an inspiration for future wind energy projects in Belgium.

8.6. Central Danube Development Agency Nonprofit Ltd. (Hungary)

CDDA highlighted several key aspects of integrating environmental considerations into wind farm siting. They emphasized the importance of establishing buffer zones around sensitive natural areas and cultural sites, which help minimize disruptions and build stakeholder trust. The inclusion of stakeholders during the Environmental Impact Assessment (EIA) phase was seen as essential to ensure that cultural and ecological values are properly considered.

In terms of biodiversity protection, advanced habitat mapping techniques, particularly for migratory routes and nesting areas, stood out. Scheduling construction to avoid critical breeding and migration periods was recognized as a key strategy for ecosystem protection. For preventing land erosion,

infrastructure planning that minimizes land disturbances, along with post-construction revegetation using native species, was identified as crucial for long-term soil stability. The Hungarian partner suggested that more detailed information on revegetation techniques should be shared in the future to facilitate their application in different climate conditions.

Regarding planning and spatial development, the Hungarian partner appreciated Finland's dynamic spatial planning approach, which incorporates new environmental data and evolving technologies to enable proactive and flexible development. Broad stakeholder collaboration, including local authorities, environmental organizations, and civil society was considered important to ensure a comprehensive perspective.

When comparing Finland and Hungary's approaches, Hungary has also started integrating biodiversity considerations into wind energy planning, particularly in protecting migratory bird corridors and natural habitats. Public participation is still evolving, but public consultations and municipal involvement are becoming more common. There is also increasing collaboration between energy developers, environmental organizations, and administrative bodies in Hungary, though clearer frameworks are needed to balance economic, environmental, and social priorities.

The key takeaways from the presentations, discussions, and site visit included the importance of ecosystem protection, the use of advanced tools for site selection, and the significance of transparent communication and stakeholder engagement in improving social acceptance. Finland's efficient permitting processes, which integrate environmental assessments with public feedback, served as an example of how bureaucracy can be streamlined while maintaining high environmental standards.

In terms of regional planning, proactive and flexible zoning, where suitable areas for wind energy are identified in advance, was seen as an effective way to reduce conflicts. The site visit reinforced the practical relevance of theoretical principles, particularly regarding planning near sensitive areas and minimizing ecological impacts.

Economic analysis, including case studies on the impact of wind energy projects on employment and local revenues, was considered a valuable addition to future discussions. Additionally, they suggested that long-term ecological and social monitoring should be a crucial part of ensuring sustainable project outcomes.

The visit to Finland provided a comprehensive overview of the country's advanced wind energy practices. The program highlighted the importance of integrated planning and stakeholder collaboration. CDDA expressed interest in applying the lessons learned to regional projects, promoting sustainable and community-driven wind energy development in Hungary.

8.7. Autonomous Community of the Region of Murcia, General Directorate of the Natural Environment (Spain)

CARM emphasized the importance of spatial planning and early public participation in discussions on wind farm siting. This structured approach was seen as a crucial aspect of integrating environmental considerations into wind energy projects.

When comparing Finland's and Kauhajoki's approach to their own region, CARM noted that they do not have a formal spatial planning process for wind farm development. Finland's structured planning model sparked interest and was considered a potential practice that could be adapted in Murcia.

Key takeaways from the presentations, discussions, and site visit included the importance of local acceptance and agreements with landowners, which facilitate smooth collaboration and project development. Additionally, the adaptability of projects to local needs and conditions was highlighted as a key factor for success. The value of working with local stakeholders was also emphasized, as it contributes to the social sustainability of wind energy projects and fosters long-term acceptance and support within the community.

Murcia area is currently focusing on modernizing existing wind farms, and no new projects are under development in the region. However, in Catalonia, there are ongoing initiatives where local residents have the opportunity to invest in wind energy projects within their own territories, increasing local engagement and acceptance.

One key challenge identified was the anticipated social opposition, but the survey results presented during the seminar encouraged Murcia's representatives to consider this new approach more seriously.

8.8. Asturias Energy Foundation (Spain)

Asturias noted that a particularly valuable insight was the integration of biodiversity sensitivity, proximity to protected natural areas, and land erosion assessments into wind farm site selection. Finland's approach prioritizes aligning project locations with spatial plans while fostering transparency through public consultations. This strategy ensures both environmental preservation and community support. Asturias could adopt similar practices to enhance future wind energy developments or optimize existing installations, especially given their rich natural reserves and the potential for stronger community engagement in renewable energy projects.

Both Finland and Spain emphasize biodiversity conservation and the protection of natural areas in wind farm planning. Asturias follows a similar practice to Finland by conducting Environmental Impact Assessments (EIAs) early in the planning process. These assessments consider ecological and cultural factors, along with other necessary permitting requirements. However, key differences exist between the two regions, particularly in their geography; Kauhajoki's flat terrain contrasts with Asturias' mountainous landscape. Additionally, Kauhajoki has a significantly lower population density than Asturias, influencing planning and development strategies.

A major takeaway from discussions was the value of engaging local communities through open and transparent consultations. Encouraging dialogue with residents builds trust and leads to more inclusive decision-making. The Finnish model, which integrates environmental considerations into spatial planning, was recognized as an effective framework for sustainable development, balancing ecological priorities with infrastructure expansion. Other key insights included techniques for assessing and mitigating biodiversity impacts and strategies for managing noise levels in surrounding communities—both essential for minimizing environmental disruptions while advancing responsible wind energy initiatives.

Asturias has already implemented successful wind energy projects that balance electricity generation with environmental safeguards, particularly in mountainous regions. These projects undergo thorough EIA procedures to limit their impact on protected ecosystems and biodiversity while meeting permitting requirements. Currently, the region operates 24 wind farms with a combined production capacity of 700 MW, all of which have followed assessment and approval processes during their development phases.

Finland's approach to integrating wind energy projects with regional development objectives and ensuring benefits for local communities could serve as a model for Asturias. Additionally, Finland's commitment to long-term monitoring and adaptive management of wind farms offers valuable lessons for enhancing the sustainability and efficiency of wind energy projects in Asturias.

8.9. The Hellenic Society for the Promotion of Research and Development Methodologies, PROMEA (Greece)

Greek partner PROMEA highlighted several key aspects of environmental considerations in wind farm siting. Since 2015, Greece has had regulations limiting turbine noise to a maximum of 35dB at holiday homes, ensuring the protection of the surrounding environment from excessive sound frequencies. Additionally, the birdlife in areas designated for wind energy development has been mapped through nature surveys, helping to protect birds and other fauna during nesting and migration periods.

In comparing Finland's approach with their own, PROMEA noted similarities in the analysis of wind farm areas using digital photography to model future wind turbines, allowing for a realistic assessment of their visibility impact. Partner also recognized that, in both countries, adjustments to the original placement of wind farms are made to mitigate their impact on the landscape and habitat in accordance with regulations. Another shared practice is the assignment of a zoning consultant by the wind energy company to each municipality during the planning process, facilitating smoother project development and local engagement.

8.10. ACTIVE ALLIANCE FOR ALBANIA (Albania)

Active Alliance for Albania noted that the importance of integrating environmental considerations into wind farm siting was a key point in the discussions in the study visit. The need for buffer zones around natural reserves and cultural sites was emphasized as a critical measure to minimize disruptions and foster trust among stakeholders. Engaging stakeholders early in the planning process, particularly during the Environmental Impact Assessment (EIA) phase, was highlighted as essential for ensuring that both cultural and ecological values are properly addressed.

Biodiversity protection strategies were a key focus, with particular attention paid to advanced habitat mapping techniques. These tools help identify critical wildlife habitats, migratory routes, and nesting areas, guiding construction schedules to avoid sensitive periods like breeding and migration seasons. This strategy was seen as essential for supporting ecosystem conservation while maintaining the feasibility of wind farm projects. To combat land erosion, planning for minimal land disturbance and the post-construction revegetation of native plant species were identified as effective measures to stabilize soil in the long term.

The discussions also touched upon spatial planning practices, with Finland's dynamic and data-driven approach receiving praise. This proactive model, which adapts to evolving environmental data and technologies, enables flexible and sustainable development. It was noted that broad stakeholder collaboration, involving local authorities, environmental organizations, and civil society, plays an important role in creating a well-rounded and comprehensive planning process.

When comparing approaches, both Finland and Albania share a commitment to biodiversity protection and community involvement, though Albania's wind energy sector is still in its developmental phase. Albania has much to gain from Finland's advanced sector, especially in terms of social acceptance and public participation. While Albania is beginning to adopt financial participation models, such as benefit-sharing schemes, to reduce opposition, challenges remain. Public engagement processes are still evolving, with municipalities and local stakeholders increasingly participating in consultations. Albania's permitting processes are maturing, thanks in part to international collaborations.

The key takeaways from the discussions and site visit centered on the importance of transparent communication, stakeholder engagement, and the effective use of tools to ensure environmental protection in site selection. Finland's streamlined permitting process, which combines environmental assessments with public input, served as an example of how to efficiently navigate bureaucracy while maintaining strong environmental standards.

Proactive regional planning, such as identifying suitable areas for wind energy in advance, was seen as an effective approach to reduce land-use conflicts. The Study Visit in Finland underscored the importance of applying these principles in practice, particularly in sensitive areas where ecological impacts need to be minimized.

Economic considerations, including the potential for local job creation and increased revenues, were highlighted as significant factors in securing public support for wind energy projects. Discussions also emphasized the need for long-term ecological and social monitoring to ensure that projects deliver sustainable outcomes.

Albania's wind energy sector is rapidly expanding, with projects like the construction of two wind farms in Lezhe and the approval of a 222.48 MW wind farm auction in 2023. The Albanian government aims to produce 4% of its total electricity from wind by 2025. Promising projects are being developed, particularly along the Adriatic coast and ridges, with local and international stakeholders supporting these initiatives. Key success indicators for these projects include international collaboration, proactive policies, and an early focus on environmental and social integration, all crucial for sustainable wind energy development in Albania.

In conclusion, Albania's wind energy sector, though still developing, stands to benefit greatly from applying good practices observed in Finland, especially regarding environmental integration, community engagement, and spatial planning. With continued international collaboration and the refinement of permitting processes, Albania can set a course for sustainable and community-supported wind energy development.

8.11. Summary of the feedback

All regions emphasize the protection of sensitive ecosystems and species in wind farm planning. Finland focuses on safeguarding forested areas, while Western Greece prioritizes the preservation of Natura 2000 sites and other ecologically sensitive zones. Latvia and Hungary have adopted advanced mapping techniques to protect bird migration routes and nesting areas. In Western Greece, additional measures such as buffer zones around cultural heritage sites and targeted revegetation efforts further contribute to minimizing environmental impacts.

All regions utilize Geographic Information Systems (GIS), environmental modeling, and other technological tools to support site selection. Environmental Impact Assessments (EIA) are mandatory in Finland, Greece, Latvia, and other regions to ensure that environmental considerations are systematically integrated into decision-making.

Early involvement of communities and stakeholders is crucial for increasing transparency and strengthening the acceptance of wind energy projects. Finland's municipal tax model, which generates approximately €20,000–€30,000 per turbine per year, has positively influenced political and social acceptance. In Spain, local residents can invest in wind energy projects, improving public approval.

Finland has established a standard of two kilometers between wind turbines and residential areas, whereas in Belgium, the standard distance is only 300–500 meters. This sparked interest in other regions, such as Ireland and Belgium, where planning principles are being reconsidered. In Greece, regulations limit noise levels to a maximum of 35 dB near holiday homes. Additionally, innovative tools such as shadow modeling, visibility analysis, and noise assessments, as observed in South Ostrobothnia, provide valuable methodologies that could be integrated into the wind energy planning framework in Greece.

Successful wind energy projects demonstrate the potential for combining renewable energy production with environmental sustainability and regional cooperation. The Agios Georgios Wind Farm in Greece supplies electricity to approximately 40,000 households and utilizes a 36.2 km undersea cable to enhance energy transmission. Also, Amazon's investment in Greek wind farms, including the Mesokorfi and Koukouras projects in the Peloponnese, supports Greece's transition to renewable energy. These initiatives, set to begin operations by 2026, will generate power for nearly 200,000 homes while contributing to biodiversity preservation and infrastructure development, further promoting environmental and economic sustainability. In the Baltic region, the Latvian ELWIND Offshore Wind Project represents a cross-border collaboration with Estonia, aiming to generate around 3 TWh of renewable energy. Meanwhile, in Spain, the Asturias wind farm network consists of 24 wind farms with a total capacity of 700 MW, successfully integrating electricity production with environmental protection measures. These projects highlight innovative approaches to sustainable energy development across different regions.

Challenges and development opportunities in wind energy projects vary across regions, with social opposition being a significant barrier, particularly in Spain and Hungary. However, experiences from Finland and Belgium demonstrate that public acceptance can be higher than anticipated, reaching levels of 75–95%. Ensuring flexibility in project design and addressing local needs is essential for smooth implementation and community support. Additionally, long-term environmental and social

monitoring plays a significant role in fostering the sustainable development of wind energy projects, helping to balance energy production with ecological and societal considerations. In Western Greece, further insights into social acceptance strategies, such as those applied in South Ostrobothnia, could be beneficial in strengthening local support for wind energy initiatives.

Finland's regional planning model and integration of environmental requirements can serve as an example for other countries. Collaboration, technological advancements, and stakeholder engagement are key factors in the sustainable development of wind energy but also advancing social acceptance.

Annex I: BIOWIND Study Visit Agenda

BIOWIND Study Visit in Kauhajoki, Finland 1.-2.10.2024

AGENDA

Tuesday, October 1st

8.30 Departure from Seinäjoki (bus will pick you up at your hotel)

9.30 Arrival at IKH Areena, Kauhajoki. Coffee and sandwiches

9.40-9.50 **Welcome to Kauhajoki**

Niku Latva-Pukkila, The Mayor of Kauhajoki

9.50-10.00 **Presentation of the arrangements and agenda**

Adam Lenkiewicz, Päivi Tuisku, Regional Council of South Ostrobothnia

10.00-10.15 **The Regional Council of South Ostrobothnia, the Regional Plan and the planning process**

Päivi Tuisku, Regional Council of South Ostrobothnia

10.15-10.45 **Wind power projects in the city of Kauhajoki and measures taken to increase social acceptance**

Marketta Nummijärvi, Development Manager, City of Kauhajoki

10.45-11.00 ---Break---

11.00-11.30 **Wind power projects in the municipality of Isojoki and the general situation of wind power in Finnish municipalities**

Juha Herrala, The Mayor of Isojoki

11.30-12.00 **Status and outlook for the acceptability of wind power in Finland 2024**

Jakob Donner-Amnell, Project Researcher, University of Eastern Finland

12.00-13.00 ---Lunch---

13.00-13.30 **Suolakangas wind farm and OX2**

Taru Kaarlela, Commercial Manager, OX2 Finland

13.30 Departure from IKH Areena

ca. 13.45-14.30 Visit to Suolakangas wind farm

ca. 15.00 Visit to Katikankanjoni at Unesco Global Geopark

ca. 16.30-17.00 Check-in to Hotel Krouvi and Salaisen Puutarhan Majatalo Guesthouse

19.30-22.00 Dinner at Hotel Krouvi Restaurant

Wednesday, October 2nd

07.45 Departure from Salaisen Puutarhan Majatalo Guesthouse to Hotel Krouvi, **BIOWIND partners**

8.00 Breakfast at Hotel Krouvi

8.30 Departure from Hotel Krouvi, **BIOWIND partners**

8.45 Arrival at IKH Areena

9.00-11.00 **BIOWIND Steering Committee Meeting**, **BIOWIND partners**

Dionysios Karvelis, Region of Western Greece

Separate agenda will be provided by the Lead Partner

11.00-11.15 ---Break---

10.30 Departure from Salaisen Puutarhan Majatalo Guesthouse to Hotel Krouvi, **stakeholders**

10.45 Departure from Hotel Krouvi to IKH Areena, **stakeholders**

11.15-11.45 **Study on public support for wind energy in West-Flanders, Belgium**

Bart Decraemer, Coordinator Renewable Energy, Province of West-Flanders

11.45-12.15 **Wind power in Finland today and the Renewables Finland (presentation online)**

Kimmo Kyrölä, Advocacy Manager, The Renewables Finland (formerly The Finnish Wind Power Association)

12.15-12.30 **Meeting wrap-up and Steering Committee Meeting in Hungary in 2025**

Adam Lenkiewicz, Päivi Tuisku, Regional Council of South Ostrobothnia

Inez Fekete, Central Danube Development Agency Nonprofit Ltd.

12.30-13.15 ---Lunch---

13.15 Departure from IKH Areena

13.45-14.15 Exploring the scenery and wind farms from Lauhanvuori Observation Tower at Unesco Global Geopark

14.30-15.00 Visit to Kivijata Stone Field

ca. 15.00 Departure to Seinäjoki

ca. 16.30 Arrival at Seinäjoki Train Station