



Finnish Wind Power Association
Suomen Tuulivoimayhdistys ry

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SUMMARY OF THE WIND POWER DEVELOPMENT PROCESS

Introduction

The Finnish Wind Power Association (FWPA) aims to create good conditions for wind energy development in Finland by mediating knowledge, participating in discussions and collaborating with authorities, organizations and the industry. This memorandum is prepared for the FWPA for the purpose of supporting its efforts in assisting international market players interested in wind power development in Finland.

The aim of the memorandum is to provide a basic information package on the regulation, practice and procedures applicable on early stage wind power projects in Finland. The first chapter of the memorandum provides a general overview of the wind power sector in Finland. In the second chapter, the main critical issues and possible show stoppers of the development process are introduced. The third chapter presents the main administrative proceedings which are relevant when developing wind power projects in Finland. The fourth chapter gives an overview of the current feed-in tariff system in place in Finland. The fifth chapter introduces the current situation on off-shore development in Finland.

The information provided in this memorandum is not exhaustive, and is solely meant to serve as an introduction to the wind power sector in Finland and to the regulatory atmosphere in which Finnish project development operates.

1 Overview of wind power capacity operating and being developed in Finland

The amount of installed wind power capacity in Finland was 459 MW in May 2014, which is rather low compared to that of other European countries. The 211 turbines installed at the end of 2013 produced approximately 0.9 % of

the total electricity consumption in 2013. However, Finland has a national target of an annual wind power production of 6 TWh by the year 2020 and a strategic decision has been made to achieve 9 TWh by the year 2025. The estimated installed capacity by the end of 2015 is currently just below 1000 MW.

The introduction of the feed-in tariff in March 2011 has led to a considerable increase in the development of wind power projects in Finland. In August 2013, there were over 11 000 MW worth of wind power projects plans published in Finland, of which about 3 000 MW are offshore projects. A considerable amount of the projects is located along the coastline. However, the Finnish Wind Atlas published in 2009 indicates that the wind resource inland is also adequate for the development of wind power.

2 Initial stage critical issues

In addition to wind conditions, there are several general issues to be taken into account when planning a wind power project in Finland, with some minor variation in the different parts of the country. The critical issues can be divided into the following main categories:

- Land use of the area and its surroundings: distance to housing (incl. type of housing), distance to airports (compliance with flight security), valid land use plans (see chapter 3.1), access to site, possible reindeer herding, distance to roads and railways, military radars etc.
- Environmental issues: presence of endangered species in the area, nests of birds of prey, distance to protected areas etc.
- Grid connection possibilities
- Land lease agreements: transferability, registration with bankable priority, sector specific terms.

Some indication of the available wind potential can be gained with the help of the Finnish Wind Atlas, as well as production statistics kept by the Technical Research Centre of Finland (VTT). However, an on-site wind measurement campaign is necessary in the early phase of project development. A bankable project requires 1-2 years of on-site mast measurements. Measurements should be planned taking into account the icing conditions that occur during the winter time. Knowledge on local conditions is needed on the wind assessment phase to consider the effects of forest usually present on or close to the onshore sites.

In the later stages of a wind project (EIA and permitting), on-site environmental studies, as well as detailed noise and shadow flicker modelling are needed. Some projects may need modelling of their impact on military radars. The permitting phases will also require more detailed project specific information.

3 Administrative proceedings

3.1 Land use planning

Finland's land use planning system, as defined in the Land Use and Building Act (132/1999), is based on a three level planning hierarchy. The basic principle of the planning system is moving down the hierarchy towards more specific plans, so that the higher level plan guides the lower. This means that a lower level master plan may deviate from a higher plan only as an exception.

The regional land use plan (*maakuntakaava*) is a generic plan, which guides development on the regional level. It has to promote the national land use guidelines, which provide generic targets for good land use policies. The plan is prepared and approved by the regional councils and ratified by the Ministry of the Environment. The regional plan may include areas which are designated for wind power development. The regional plan provides a general indication of areas suitable for the purpose of wind power development. Any wind power project of regional importance should, as a ground rule, be based on regional land use planning. Detailed land use planning may not conflict with the regional plan.

The two municipal land use plans are local master plan (*yleiskaava*) and detailed plan (*asemakaava*). Both the local master plans and detailed plans are drafted and approved by the municipalities. In practise, the plans are generally prepared by consultants and the developer is responsible for the planning costs, but the municipality is always the approving party. However, the approval is a political decision, which means that the municipality is not obliged to approve the plan. The project can't be taken forward, unless the approval has been obtained.

There is specific regulation in force which allows the local master plan to be drafted specifically for wind power construction. The wind power local master plan only covers the project area and allows the building permits to be granted directly based on the master plan.

A detailed plan for a wind farm may be necessary in densely populated areas or other areas with specific needs for detailed consideration of the coordination of different land use purposes in the area.

Building permits for the construction of wind power turbines may, in some cases, be granted without land use planning. Land use planning may be deemed unnecessary when only a few turbines are planned in a specific area. Building permits without land use planning can be granted based on a so called deviation permit, which allows the municipality to deviate from any land use purpose defined in a general or detailed plan or by a planning decision (“suunnittelutarveratkaisu”), which requires more preconditions for building to be considered than in consideration of a regular building permit. These may especially be granted in areas constructed and designated for industrial use or harbours. As a counterweight to the benefit of shorter time for permitting phase, deviation permits and planning decisions generally face a higher risk of successful appeals.

3.2 Environmental impact assessment (EIA)

The obligation to conduct an environmental impact assessment is prescribed for in the Act on Environmental Impact Assessment Procedure (468/1994). All wind power projects that involve a minimum of ten wind power turbines or a total power generation capacity of 30 MW or more have to undergo the EIA procedure. Also projects falling below this threshold may require an EIA whenever the regional state authority considers that negative environmental impacts may be significant or for example if there are other wind farms in the vicinity. It is common practice to seek a statement of the need of an EIA from the regional state authority also for the projects falling below the EIA limit.

The EIA procedure consists of two phases. In the first phase, usually called EIA program, a report containing a description of the project and a plan of the impact assessment is drafted. It is to be noted that also the grid connection should be considered in the EIA. In the second phase, usually called EIA report, the relevant impact assessments are made and their results reported. It is the project developer’s responsibility to produce the assessments and reports, but in practise these are generally drafted by third party consultants. Both the need for an EIA and the EIA procedure itself are overseen by the regional state authority (Centre for Economic Development, Transport and the Environment, also known as the ELY-centre).

The EIA is not a permit, but it is prerequisite for approving plans and permits. It is also to be noted that, whether or not an EIA is required, the land use planning will require extensive studies on e.g. noise and flicker, nature values, endangered species such as flying squirrels, nesting and migrating birds, bats, impact of relics, reindeer herding (where applicable) as well as the impact on the landscape.

3.3 Natura 2000 network and derogations under the Nature Conservation Act

When a project is located within or near a Natura 2000 area, a specific “Natura assessment” has to be made, should there be a risk that the project may have significant adverse effect on the ecological value due to which the area has been included in the Natura 2000 network. This assessment can be made in parallel with the EIA procedure, although it judicially is a separate procedure. If the assessment concludes that the project has significant negative impacts on the protected values, a permit to derogate from the prohibition to alter the natural habitat has to be applied for. However, the terms for derogation are in practice so strict that this is more likely only a theoretical option.

Wind power projects may impact also other protected nature values. The Nature Conservation Act (1096/1996) contains provisions on the protection of natural habitats and species, as well as the prerequisites for derogation from this protection. Terms for derogation differ depending on species/areas and are generally strict, but may be granted, if the favourable conservation status can be maintained. Especially the protection of different species of birds, such as the sea eagle, is relevant for wind power construction on Finland.

3.4 Building permits

Construction of an industrial wind turbine requires a building permit as stipulated in the Land Use and Building Act. The permit is granted by the relevant municipality. The general prerequisite for granting the building permit is that the intended land use corresponds with the land use planning of the area. The electrical substation usually constructed as a part of the wind farm project also needs its own building permit.

The permit decision may include regulations regarding the building of the wind power plant. These may concern, among other things, how construction work is to be carried out or what measures need to be taken in order to limit any harm caused during construction.

3.5 Environmental and water permits

According to the Environment Protection Act (527/2014) wind power construction does not automatically require an environmental permit but, however, a discretionary need for a permit may become applicable. An environmental permit is required, should there be a risk that the planned or constructed wind turbine or wind farm cause an unreasonable burden to the residents in the area such as noise and/or flicker effects.

The guiding principle for wind power development is that wind farms should be planned far enough from residential areas, whereupon the environmental permit is unnecessary. However, the some municipalities require the environmental permit on regular basis.

The environmental permit is, in practice, the only administrative tool available for the authority to restrict the operations of a wind farm and to obligate the operator to monitor and report environmental impacts of the operations. The permit may be granted for a wind farm or for a single turbine, depending on the circumstances. The main rule is that any operations with simultaneous impacts should be assessed as a whole.

A wind power project will require a so called water permit in accordance with the Water Act (587/2011), should the project have an impact on the water system. A water permit is always required for offshore wind power projects.

3.6 Aviation obstacle permit

In order to ensure the undisturbed aviation, permission is required for erecting turbines higher than 60 meters. This obligation is stipulated in the Aviation Act (1194/2009). The project developer must first obtain a statement of the air traffic service provider (Finavia), which will be attached to the application for the obstacle permit. The relevant authority for the obstacle permit is the Finnish Transport Safety Agency (Trafi).

3.7 Defence force statement

The construction of a wind power project requires a approving statement from the Finnish Defence force. The statement is based on how the project will affect surveillance sensors and radar systems. The Defence force determines how the project will affect their operations. Should the planned wind farm have adverse effects on the defence force's surveillance systems, weapon platforms, training and operation of troops and equipment on the garrison, depot, training and firing range areas, the Defence force may give a negative statement of the project. The statement cannot, in practice, be challenged in the courts. In Finland there is currently one case, in the Bay of Bothnia area, where the Defence Force's surveillance systems have been rearranged in order to enable the construction of a number of wind farms.

3.8 Grid connection

In Finland, the business of electricity system operation is a so called licensed monopoly and is regulated by the Energy Authority. Grid connection issues are part of the early stage project development, as the connection issue may take several years, and the grid is generally a factor to be considered both in

the EIA process, as well as in land use planning. Early stage grid connection planning is crucial, as a lack of capacity may in some cases be a reason for the grid operator to refuse connection until the grid has been strengthened to meet the requirements set by amount of electricity delivered. This may also be a significant cost factor when considering the feasibility of the project.

Any producer of electricity has, against reasonable compensation paid to the system operator, the right to connect to the grid. Building a grid connection requires a project permit (*hankelupa*), if the nominal voltage of the connecting grid is 110 kilovolts or higher (Electricity Market Act, 588/2013). The permit shall be granted for a grid that connects one or more power plants to the closest grid of 110 kV (or higher). The relevant permit authority is the Finnish Energy Authority.

3.9 General administrative principles of land use planning and the appeal system

During the land use planning process, the environmental and other impacts of the wind power project are fairly thoroughly examined. There are various legal requirements regarding the public's rights to participate in the land use planning, as well as requirements on hearing parties of interest. Land use planning must also, for example, be based on sufficient studies and impact assessments.

Despite the legal requirements of land use planning, the dominant feature concerning local land use planning is that the municipalities have a monopoly on the land use planning within the municipality's borders. The project developer has no legal right to have a land use plan approved. The final approval or dismissal of any land use plan is left to the discretion of the local council, which is a politically elected body.

Every resident of the relevant municipality has the right to challenge a land use planning decision made by the local council. The appeal is handled by the administrative court which has territorial jurisdiction regarding the municipality in question. Further, the ruling of the relevant administrative court may, in most cases, be appealed to the Supreme Administrative Court. The administrative court may only rule on the legality of the decision; not the expediency of the decision.

As opposed to the land use planning decision, the assessment of the other decisions required for a wind power project, such as an environmental permit or a building permit, is legal consideration by nature. This means that the project developer has a legal right to be granted these permits, should the legal requirements for the permits be fulfilled. The right to challenge these decisions is also considerably more restricted compared to land use planning decisions.

As most decisions on plans and permits may be appealed, it is of key importance for the timely completion of any wind power project that these matters are handled simultaneously. For example, land use planning and EIA processes are generally carried out in parallel, which may shorten the total length of the procedures. Building permits may be granted based on a wind power master plan or a detailed plan, even if the land use planning decision is subject to an appeal. Even though construction works may start only once the land use plan is legally valid (i.e. the municipality's or the administrative court's decision is final), the time consumed by multiple appeal processes may be considerably shortened. Thus, the principal rule is the free handling order of various permits needed for the completion of the project.

The average duration of a judicial challenge is roughly one year per each instance. Hence, the anticipated duration for the entire judicial review process ranges from one to two and a half years.

4 Feed-in tariff scheme

The Finnish wind power support system consists of a capped feed-in tariff scheme over the produced electricity by a wind turbine. Through the feed-in tariff scheme, the producer is paid a premium amounting to the difference between the target price and the 3-month average spot market price over a period of 12 years. The target price for wind power is set to 105.3 €/MWh until the end of 2015 and 83.5 €/MWh for the rest of the years.

Only newly built projects (without used components) that have not received state aid previously may receive the feed-in tariff incentive scheme. To receive the subsidy, the minimum nominal installed capacity of the wind turbine needs to be at least 0.5 MVA, the plant has to be technically and financially feasible and to be located in Finland.

The main limitations in place regarding the feed-in tariff scheme are:

- Wind power plants will only be accepted into the scheme until the combined capacity of the generators included in the scheme amounts to 2 500 MVA
- No subsidy will be paid to the extent the electricity production (as applied for by the developer) exceeds the amount confirmed in the decision regarding acceptance into the scheme
- Maximum payable subsidy is capped at feed-in tariff minus 30 €/MWh, which means that when the market price of electricity (average) is below 30 €/MWh, the subsidy to be paid amounts to the target price minus 30 €/MWh

- Subsidy is not paid per hour, when the price of electricity is negative

An operator can apply for a preapproval, based on which it will gain priority in being admitted to the system (ie. to have a share of the total nominal output allotted to its project). Prerequisites for preapproval are e.g. valid building permits for the turbines, executed grid connection agreement. The preapproval decision granted by the Energy Authority is valid for two years, giving the developer comfort that the project will have priority in being admitted to the system.

5 Offshore wind power production

Offshore wind power feed-in tariff in Finland is currently at the same level as onshore wind, which in general does not support the development of offshore wind power due to significantly higher investment costs associated with offshore projects. Thus, most of the wind power development in Finland is currently concentrated onshore.

The Finnish Government has announced its support to the offshore wind power development through a demonstration project. 20 million euros has been allocated within the state's budget framework for the demonstration project for offshore wind power in 2015.

The application process started in September 2013, and the decision on the subsidy will be made in December 2014. The construction of the demonstration project is expected to begin in 2015 or 2016.

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