Planning for wind turbines

Facts about Wind - Factsheet P2

The correct placement of a wind turbine is essential both for the turbine's ability to produce electricity and for the population's acceptance of wind turbines in landscape.

Who decides where to set turbines?

Planning for land-based wind turbines is carried out by municipalities, who are in charge of municipal and local plans. The national environmental centres can advise the municipalities and have furthermore the planning competence for land based wind turbines of over 150 metre total height and above. City and Countryside Agency under the Ministry of Environment deals with matter of disputes related to the legislation and sets the general guidelines.

All turbine locations shall fit into the spatial planning and wind turbines can only be raised in accordance with applicable laws and regulations - including planning, nature protection and building laws and noise and connection announcements.

In Denmark there is a distinction between planning for offshore wind turbines and planning for wind turbines on land. Planning and decisions about offshore wind turbines is conducted by the Danish Energy Agency and the Climate and Energy Minister. See Factsheet P4, "Wind turbines at sea."

Municipalities in the central role

After the municipal structural reform the municipalities is from 1 January 2007 taking over a number of the former counties' planning tasks, including wind power planning. Cf. law on planning, § 11a, 5, the municipalities must designate possible wind turbine sites in their respective municipal plans.

Besides the planning law's different provisions about establishing local plans, consultation procedures, any environmental impact assessments (EIA, or VVM in Danish) and other regulations, every four years the Environment Minister issues a number of statements to the municipalities on the state interests in connection with the new municipality plans. Traditionally, these government statements also affect wind energy and municipalities must take into account these statements in the preparation of municipal plans. The latest government statement is from December 2006.

Climate and energy policy statements both nationally and in the EU have increasingly pointed to a much greater use of renewable energy, not least wind turbines. In January 2007, the government a presented vision of the Denmark on long-term being completely free from fossil fuels and instead use renewable energy. In February 2008 a new energy policy agreement concluded requirements for municipal planning. A special law on renewable energy is expected to come into force on 1 January 2009 as implementation of this policy deal.

The desire for greater use of renewable energy, in conjunction with the municipal structural reform and technological development towards bigger wind turbines than in the past, was the background the work of the government's planning for wind turbines on land. In early 2007 this planning committee completed a report with recommendations and guidelines for the future turbine planning.

New planning circular on the road

Guidelines for the former turbine planning were set back in 1999 in the then Environment and Energy "Circular on planning of and rural permission to installation of wind turbines." The corresponding guide was produced in 2001.

Developments in energy politics, technology and municipal structure have necessitated a new circular and in the summer of 2008 City and Countryside Agency released a draft for such a new circular in a public consultation. The final version of the circular is not yet known.

In the following section will review the main points of the provisions of the planning circular which regulates the wind turbine planning and location of each turbine. On these areas the upcoming new circular is presumed not to depart significantly from the previous circular, however, the recommendations from the planning committee's report also summarized in the following review.

Planning Circular establishes among other things:

- Through the planning consideration must be taken to the neighbouring residential nature, landscape, cultural history values and agriculture-related interests - next to the best use of the wind energy.
- Wind turbines should preferably be established in groups, and groups must be presented in 'a relative to the landscape easy to understand geometric pattern'. (The same formulation used in both the current circular and in the draft of the new circular). However, erection of single turbines is not excluded.
- New wind turbines will fit into the landscape with a distance to other wind turbines. (In the previous circular this indicative range is given as 2.5 km. from an existing wind turbine or another turbine area, while the planning report recommends a distance of 4 km, alternatively 28 times the turbine's total height. The new draft circular operates with a distance of 4.5 km, resulting from the maximum distance in a proximity zone of 150 m high wind turbines)
- In the planning for one or more wind turbines closer than the above distance it must be accounted for that 'the landscape effect of the farms is collectively considered un-hesitant/un-disturbing'. (The same wording is used in both the old circular and in the new draft circular).
- Wind turbines shall not be placed closer to neighbouring residential than 4 times the turbine's total height. That means the height measured from the wind turbine base to the top of the upper wing tip, where it is at its highest. (The owner of the wind turbine may nevertheless have residence within that distance requirement).

Rules on Pollution and noise, etc.

The legislation does not require a minimum distance between turbines or groups of turbines. The above range is therefore more indicative and it is each municipality, which can make the decision about the distance between the turbines.

The provision about that wind turbines may not be erected closer to neighbouring residential than 4 times the total turbine height is a distance requirement, which supplements the noise notification's minimum distance to neighbours. The noise limits are binding and there is a distinction between noise limits in the open countryside and actual residential areas. View Factsheet P9: "Noise from Wind Turbines".

Possible shadow flickering can be calculated precise so that problems of that kind can be account for already in the planning of the new turbines. View Factsheet P 8: "Shadows and flicker from the wind turbines." It is recommended that the planning ensures that neighbouring houses are not imposed possible shadow flicker for more than 10 hours per year.

Environmental Impact Assessments (EIA)

EIA stands for of Environmental Impact Assessment. The rules can be found in a specific notice and in the planning law. The municipality must (in practice usually with the wind turbine developer) make an EIA for all projects with new turbines of a maximum height exceeding 80 meters and for wind turbine groups of more than three turbines. The purpose of the EIA regulations is that environmental conditions are thoroughly examined before giving permission for a larger development. Guidelines in relation to the municipality plan about

location and design of an EIA compulsory development must be provided before construction and erection of the development can be started.

Construction Law and Law on Nature Protection

Planning a new wind turbine placement must not only follow the rules in the planning circular. The construction law has among other things provisions about the distance to the boundaries, and the nature protection law also has importance for the planning of the placement of wind turbines. View Factsheet P3, "Wind turbines in the landscape"

Local plans and rural permits

A local plan is a concrete plan for a smaller area within a municipality. It is the municipality's task to decide whether to make a local plan for a new turbine or a group of turbines, and to develop such a local plan.

The planning circular states that a local plan for a wind turbine development must contain requirements about the wind turbines' exact location, number, minimum and maximum total height and appearance.

Rural permission may only be granted on basis of a specific designation in a municipal plan or on basis of a local plan. Only household turbines can gain rural permits without prior planning.

Complaints against turbine plans

Objections and comments on wind turbine plans can be made in the public stage which is part of the municipal planning process. Before a municipality authorizes the installation of wind turbines through a local plan, comments can be made in the public stage, which is at least 8 weeks from the draft local plan is published until it may be adopted.

However, when a plan is finally adopted by the board of the municipal, one can only appeal legal issues - for example on defects of the making of the plan – to the Nature Complaints Board. The plan alone cannot be appealed. Municipalities must in each case give guidance on appeal possibilities.

The new law on renewable energy

On 21 February 2008 the government concluded a broad agreement in parliament on an energy deal, which among other things define some general framework for the development of renewable energy until 2012. This concludes an agreement with KL (Municipals' Association) that municipalities in their planning must reserve areas for wind turbines corresponding to 75 MW for each of the years 2010 and 2011.

The energy agreement also contains a follow-up on the adopted replacement scheme from 2004. The scheme aims against a total establishment of 350 MW wind power capacity as the replacement for the dismantling of 175 MW of older smaller turbines.

The so-called certificates of scrapping can continue to be earned until the end of 2009, while the use of evidence of scrapping now extended to and including 2010.

It is envisaged that municipalities by the end of 2008 should have provided planning base for the 350 MW and the political parties behind the energy agreement will make current status of this planning base. The City and Countryside Agency's balance sheet per 30 October 2008 shows that it is unlikely that the target figure of 350 MW can be achieved before the end of 2008.

See also Factsheet P11, "Replacing wind turbines."

Other parts of the energy agreement reflects in the new law on renewable energy (VEloven = RElaw) which is expected to enter into force on 1 January 2009. This is a completely new and

special compensation scheme which allows neighbours to new wind turbines the option to raise a claim against wind turbine developer to cover any loss in value of properties near the new wind turbine.

An independent valuation authority will assess the possible value of property and the claim of loss is to be raised by the municipality consultation procedures on the EIA report etc.. Energinet.dk is expected to handle the administrative part of the scheme but the regulation basis for the scheme has not yet been finally adopted and described.

Municipality plans with long-term

A municipal plan must according to the planning law determine the individual municipality's overall goals and guidelines for the developing the next 12 years. With a technical lifetime of a turbine of approx. 20 years, it is natural that a thorough and long-life planning for wind turbines is made following the designation of potential wind turbine sites. A sensible long term planning in relation to the municipality plans thus ensures a good integration of new wind turbines in proportion to the municipality's own wishes for the landscape and the development.

The recent energy agreement in Denmark goes only to and with the year 2011, but climate politic and security of supply have clarified that the wind turbine planning has a much longer perspective. The governmental statements for the municipal plan 2009 states that, "After 2009 the establishment of turbines on land will still be necessary. It is expected that will be an increased power generation by wind energy."

Municipals long-term planning can help to ensure a continuous entry of new turbines and gradually replacement of worn-out turbines for many years in time. In return, technological trend towards larger and more efficient turbines means that in the long term - measured in numbers – there will be fewer turbines in Denmark, although the total capacity increases.

If you want to build a wind turbine

By contacting the municipality one can ascertain where it is possible to obtain permission to construct wind turbines. For guidance on placement and purchase of wind turbines one can among other things turn to Denmark's Wind Turbine Owners' Association's independent consultants.

Sketch of a planning process:

- The wind turbine developer submits the project to the municipality.
- The municipality will send a discussion paper for public consultation of at least 2 weeks deadline of consultation regarding ideas to content in the recent EIA report.
- The wind turbine developer and the municipality shall prepare an environmental impact assessment (EIA).
- Draft to municipal planning guidelines is circulated for public consultation (at least 8 weeks) together with the EIA report.
- Often, the municipality alongside the public consultation of the EIA, cf. 4, also submits a draft to the local plan to the public consultation and often municipal / wind turbine developer arranges public meeting.
- After the public phase municipality makes the decision about the project and in such case issues an EIA-permit and later a building permit.

More information:

- "Circular no. 100 of 10 June 1999 planning and rural permission for installation of wind turbines ", Environment and Energy Ministry.
- "Guide to planning permission and rural for erection of wind turbines", Ministry of Environment and Energy, 2001.
- "Notice no. 1335 of 6 December 2006, Environment, describes the EIA-rules.
- "Revised turbine circular, draft of 12 June 2008 ", City and Countryside Agency, Environment.

- ”Government statements to municipals 2009, December 2006, Environment.
- "Notice of the Law on Planning", LBK No 1027, 20.okt. 2008. Environmental Ministry.
- "Agreement between the Government, S, DF, SF, R and New Alliance about the Danish energy policy in the years 2008-2011." On 21 February 2008.
- "Agreement between the Government and KL regarding the development of wind turbines on land for the period 2008-2011 in both years inclusive." 25 April 2008.
- "Report of the Government's Planning Committee for wind turbines on land ", January 2007, Forest and Nature Agency, Ministry for the Environment.
- Specific topics on wind turbine planning are described in other fact sheets from the Denmark’s Wind Turbine Owners’ Association.

Facts about Wind published by Denmark’s Wind Turbine Owners’ Association.

Information sheets that provide facts information on a series selected topics can be obtained from the Secretariat or downloaded at www.dkvind.dk.

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