

Status for Kriegers Flak Projects

Nordvind

Wind power is a rapidly developing area in the four Nordic countries Denmark, Sweden, Norway and Finland, and the national energy plans comprise goals on strong growth within the area. The Nordvind project is carried out by a Nordic project group with Swedish chairmanship. The steering committee for Nordvind is the working group for renewable energies within the Nordic Council of Ministers.

The Nordvind project analyses the terms for wind power in the Nordic countries based on the authorities planning and procedures for treating wind power projects, but also other terms and conditions for the expansion of wind power in the Nordic Countries. Cooperation between Nordvind and Nordel, the collaboration organization of the TSOs of Denmark, Finland, Iceland, Norway and Sweden, has been agreed upon.

In June 2007 Nordvind held a workshop on Gotland (Sweden), with a broad band of participants including central, regional and local authorities, system operators, participants from the industry and other interested parties. The aim was to exchange information and inspiration on the planning of wind power within the Nordic countries. One of the resulting proposals was to initiate a project on the offshore wind farm project Kriegers Flak and try to establish it as a common project between Denmark, Sweden and Germany in order to be able to draw conclusions and come up with recommendations for best practice on international collaboration on wind power projects. A closer description on the background of Kriegers Flak is found further below.

Based on the proposals from the Nordvind workshop Nordvind initiated a meeting between the project developers for the wind power projects on Kriegers Flak, the involved TSO's and the permitting authorities from all three countries in December 2007, with the aim to demonstrate the interest in participating in a common best practice project about Kriegers Flak and further to discuss the content and design of this project. Nordvind's role in such a project should be to:

- Identify issues to be resolved concerning the different authorization-, planning-, environmental evaluation etc issues involved, when 3 separate countries are involved in a project
- On the basis of the experience with the Kriegers Flak project describe the lessons learned in order for these to be utilized in other potential projects in the Baltic region. Currently there are ideas of an Estonia-Sweden and a Lithuania-Sweden project, where off shore wind farms are combined with international transmission lines. This part of the project should be carried out in close cooperation with the TSO's involved.

It has been decided that the Kriegers Flak project should be the content of NordVind's presentation at the Vind2008 conference in Malmö in October 2008, which is going to be held by Energistyrelsen, Denmark.

The current paper sums up the recent activities and the status of the Kriegers Flak project as well as pointing out the important problems and challenges within an international collaboration on Kriegers Flak.

Background for Kriegers Flak

Kriegers Flak is located in the Baltic Sea and is divided between Germany, Denmark and Sweden. The location has been spotted out as an optimal, shallow area for wind power production, and offshore wind parks have been planned or discussed in the German, Swedish and Danish part of the marine area. The area and a possible common international connection are sketched on Figure 1.

The overall offshore wind power potential is estimated to more than 1.5 GW, but the planning status for the three different areas within Kriegers Flak differ a lot. So far the project development is split between Kriegers Flak 1, 2 and 3 for Germany, Sweden and Denmark respectively. However, there is a potential of exploiting the location of the area in an international collaboration project, concerning both rules and procedures for offshore wind farms as well as possible common usage of the electric connection for energy exchange.



Figure 1 Location and sketched connection of Kriegers Flak. The thinner dashed lines indicate the existing connections between Denmark and Germany (Kontek) and Sweden and Germany (Baltic Cable). Source: Energinet.dk

Challenges within the Kriegers Flak projects

The possible international collaboration on the Kriegers Flak projects holds a number of challenges and issues which need to be addressed by the authorities, the TSO's and the project developers. In the following a general description of the different challenges are categorized into

1. Planning issues
2. Grid connection
3. Permitting issues and environmental assessment
4. Timeline of the projects

Planning issues

The planning concerning the electrical power system holds four basic options:

- Separate grid and connection planning
- Establishing a common grid connection
- Establishing a common grid connection as part of a larger common grid extension plan

The separate grid connection with no interconnections in between the countries would be the immediate consequence if all collaboration work fails, while the exploitation of the unique placement of Kriegers Flak by using a common grid connection requires solving of the conflicting permitting and planning procedures. This common grid connection could either be concerned with the grid connection of the Kriegers Flak wind farm only, or it could be an integrated part of a larger common transmission plan for the international connections between the three countries and the possible advantages within system security.

The European commission has pointed out the importance of international collaborative planning and appointed Georg W. Adamowitsch as a coordinator for the connections to off-shore wind power in Northern Europe (europa.eu, 2007).

Energinet.dk, Svenska Kraftnät og Vattenfall Europe Transmission have initiated and are carrying out a joint international pre-study of the possibilities of combined grid-connection of the possible off shore wind farms at Kriegers flak with an interconnection between the three countries. The pre study focuses on benefits and disadvantages with such a combined international solution as opposed to traditional grid-connection solutions. A combined solution is expected to imply benefits in terms of market functioning and security of supply for a modest extra cost. A combined international solution would be the first of its kind in terms of technology and market utilization.

The project is carried out in cooperation between the TSOs Svenska Kraftnät, Vattenfall Europe Transmission and Energinet.dk. The pre-study, headed by Energinet.dk, is expected to be concluded by the end of 2008 and will include considerations on:

- The possibilities of replacing independent connections with a common grid that could serve not only as grid-connection for the wind parks but as an interconnection between the three countries.
- Technical design of a possible common grid connection in terms of e.g. AC or DC technologies.

The current developments in the German and Swedish project point at an AC-connection for each of the parks, which might hold some disadvantages for a common grid connection.

Grid connection

Common grid connection holds the need to solve the following two issues:

1. Technical requirements (grid code)
2. Financial design

Concerning the grid code requirements the TSO's of the three countries must agree on common guidelines if the grid connection is to be carried out on even conditions. Furthermore the actual technical connection is of major importance, since the different projects might need to be adapted in order to make a common connection technical feasible. This was mentioned above as one of the consideration in the TSO pre-study.

The financial design holds the cost of establishing the grid connection, the tariffs for transmitted energy and the tariffs applying for wind power in the different countries.

Permitting issues and environmental assessment

The permitting issues are especially concerned with authority activities and the procedure for permissions for offshore wind parks, including the environmental assessment of the projects, which holds three different options:

1. Separate environmental assessment
2. Common environmental assessment for all three projects
3. A combination, which takes care of possible conflicting areas, but leaves the general environmental assessment to the separate projects

A separate assessment of the environmental issues for the three projects will hold the risk of doing the same work more than once and the danger of underestimating the true effects of the three projects as a whole, by not taking cumulative effects into account. If important cumulative effects are found this would furthermore raise the question of which part of the wind park will be permitted and which will not.

So far environmental assessments have been carried out for the Swedish and the German project individually according to the rules and guidelines in the respective countries. A common environmental assessment holds the option to take into account the cumulative effects and save resources by not analysing the same issues for every park independently. However, this would require alignment of the different national rules or separate rules for this particular international project. Additionally other aspects, such as safety issues for maritime shipping and the visual aspects of the setup of the wind turbines could be assessed commonly. The environmental and visual aspects will be relevant regardless of the possible collaboration on electricity and permitting issues.

Timeline of the projects

Finally, a very important challenge in the possible collaborative planning of the wind farms is the different timeline in the three projects. If a decision on a common project is postponed too far in the future, the development of the individual projects, and especially the German project might have proceeded with the planning and construction to a point, where technical barriers would hinder a common grid connection.

Objectives of the Nordvind project group and challenges within the project

The Nordvind working group has three main focus areas in the Kriegers Flak project:

Proposing solutions to the challenges of different rules and procedures in the three Kriegers Flak projects according to:

- Planning issues
- Grid connecting
- Permitting issues
- Timeline of the projects

Not all of these issues will be addressed and analysed by the Nordvind group, as for example the TSO's will take care of grid connection issues and TSO-related planning, but the aim of the Nordvind group is to observe the process of this specific project in order to draw general conclusions on best practise and experiences from the work and procedures. This is meant to form a background for possible future international collaboration projects.

The development so far within the Nordvind project group

A chronological overview on the past activities and important developments is attached to this document.

Current status of the projects

An overview on the status of the individual projects and developments at Kriegers Flak is given in table 1. The German project is the furthest developed, while the Danish project lacks the official permission and subsequently an actual project developer.

	Kriegers Flak 1 (Germany)	Kriegers Flak 2 (Sweden)	Kriegers Flak 3 (Denmark)
Developer	EnBW.* Development in cooperation with WPD Offshore	Vattenfall. Development in cooperation with WPD Offshore*	?
Size of project	330* MW	640 MW	400-800* MW potential
Planned start of construction	2010/2011	2012/2013	-
Water depth	20-40 m.	17-40 m.	15-30 m.
Permission	Issued	Issued	-
Grid connection to shore	Bentwisch	Barsebäck/Arrie(Kruseberg) /Trelleborg	Bjæverskov? *
Paying for connection to shore	TSO	Uncertain (Fund?)	Uncertain TSO?*

Table 1: Comparison of Kriegers flak offshore projects (Ea Energianalyse, 2007). Changes to original marked with *.

Kriegers Flak 1

All necessary permissions for the German part of Kriegers Flak have been issued and the grid connection has been part of a study of the future wind farm grid connections in Germany (Studie im Auftrag der Deutschen Energie-Agentur GmbH (dena), 2005). According to this study the grid connection will be cheapest as an HVAC connection, which furthermore also connects the offshore wind farm Baltic 1, which can be considered as one of the furthest developed offshore wind farms in Germany (WPD, 2007). The project rights have recently been taken over by EnBW (EnBW, 2008), who bought 100 % of WPD's subsidiary company Offshore Ostsee Wind AG, which owns the rights for both Kriegers Flak 1 and Baltic 1. EnBW will carry out the project in collaboration with WPD (WPD, 2008). The TSO responsible for the grid connection of both Baltic 1 and Kriegers Flak 1 is Vattenfall Europe Transmission. However, Vattenfall is expected to sell its transmission system during 2009 as a result of the decision of the European Commission on the unbundling of Energy Companies, which is expected in autumn 2008.

According to WPD, the placement for the 80 wind turbines has been investigated and the necessary drilling and testing has been performed. At the moment the actual design of the fundamentals is analysed. So far the grid connection has been planned and permitted as an AC connection by Vattenfall Europe Transmission. A possible international connection would require Vattenfall Europe Transmission to change this. The offshore project at Baltic 1 is further developed and expected to start construction in 2009/2010. However, the grid connection of Baltic 1 will be independent of Kriegers Flak 1 and will thus not directly affect the connection of Kriegers Flak.

Kriegers Flak 2

Similar to Kriegers Flak 1, the Swedish part is ready with the necessary permissions. The grid connection question is not yet fully solved, but Svenska Kraftnät carried out power system analysis (Svenska Kraftnät, 2006, November) concerning this issue, taking into account the options of connections both to the 400kV grid in Arrie and to E.ON's 130 kV grid in Trelleborg. Further studies on the possible grid connection to the 130 kV grid explore the necessary reinforcement of the 130 kV grid depending on the capacity connected to this voltage level (Andersson, Petersson, Agneholm, & Karlsson, 2007). Earlier in the project a DC-link connecting Germany and Sweden and their respective wind farms was discussed between Svenska Kraftnät and Vattenfall Transmission Europe, but currently these plans are not developed further, and the Swedish project is focussing on an individual AC-connection.

Kriegers Flak 3

Contrary to the other two projects, no official permission has been given to Kriegers Flak 3. In September 2008 the Danish government decided on the placement of the next offshore wind farm, which is going to be between Anholt og Djursland and is to be finished with a capacity of 400 MW in 2012. If the government sticks to its recent politics with waiting with constructing another wind farm until the first is fully build and in service, this means a delay of the Kriegers Flak project until at least 2012. However, a political decision was made on forming a working group under the Ministry of Climate and Energy to further evaluate the options at Kriegers Flak. This points at an upgrade of the priority of Kriegers Flak compared to the priority mentioned in an earlier prioritization list (Udvalget for fremtidens havmølleplaceringer, 2007, April). The results of the working group are expected in November 2009.

WPD, who also were involved in Kriegers Flak 1 and 2, sent an “open door” application for 455 MW at Kriegers Flak 3 through its subsidiary company Danish Offshore Wind A/S.

For the power system network planning the grid connection of Kriegers Flak is briefly mentioned in a study of the future grid reinforcements of the Danish power system, which concludes that the 400 kV grid on Zealand needs to be extended, possibly by establishing a ring connection in northern Zealand.

Future Activities

The current status of the three different projects described above should be verified and extended by the respective participants of NordVind and the participants of the Kriegers Flak meeting in December 2007. The aim of this update is a categorization of the status for the 3 projects into the following three topics:

- Authority activities and permissions
- Status of power system planning
- Status of the project developers

The system operators from Denmark, Sweden and Germany are assessing options to combine the grid connection of the three different Kriegers Flak projects with an international electrical connection between the three countries. The Danish transmission system operator Energinet.dk has initiated this analysis, which is expected to conclude by the end of 2008.

Furthermore collaboration exists between the TSOs and Hr. G.W. Adamowitsch, who is the EU-commissions coordinator for offshore wind power in Northern Europe. He has formed a “Working group for off-shore/onshore grid development” which is concerned with wind power and grid reinforcements with focus on the North Sea and the Baltic Sea. On the first meeting in June 2008 the three TSO’s held a presentation on the possible collaboration at Kriegers Flak, which gained great attention and it was emphasized that an international solution for the grid connection could act as a pilot project for other projects in e.g. the North Sea.

The different issues outlined in this paper emphasize the need to coordinate the international activities of TSO’s, authorities and project developers and especially the need to observe the project in order to be able to draw conclusions and experiences for future projects. However, the review of the status of the different projects revealed a very different time frame for the different projects, and coordination of this aspect is essential for the feasibility of an international collaboration project. Currently, the projects in Germany and Sweden are underway, but planned and permitted independently. International collaboration between authorities, TSO’s and project developers is therefore urgent if the three countries want to take advantage of the options given by the unique placement of Kriegers Flak.

Important references and background information

Kriegers Flak 1

- (Studie im Auftrag der Deutschen Energie-Agentur GmbH (dena), 2005)
This report is an extensive analysis of development of the German power system network with re-

spect to the grid integration of both off- and onshore wind power. The report analysis the necessary grid reinforcement as a result of the overall planned wind power capacity in Germany, which includes Kriegers Flak. Furthermore the basic technological options for the grid connection are analysed and an AC-connection is proposed for Kriegers Flak with the grid connection to Bentwisch. The part of the connection closest to shore is proposed to be common with the offshore wind farm Baltic 1. A possible collaboration with Denmark and Sweden is not mentioned.

- (Bundesnetzagentur, 2008, January)
This report summarises the ongoing grid reinforcements in Germany, partly due to future wind power developments. However, the substation Bentwisch is not mentioned and no specific offshore wind farms are described.

Kriegers Flak 2

- (Sweco VBB VIAK, 2003, April)
This report describes (in three parts) the consequences of a possible Kriegers Flak 2 project for the environment.
- (Vattenfall, 2008)
This newsletter contains general update information on the Kriegers Flak project. Ongoing investigations on fundamentals and hydrology are mentioned. Furthermore the grid connection is mentioned and proposed to be an AC connection due to the high economic cost of a HVDC connection.
- (Svenska Kraftnät, 2005, September)
In this report Kraftnät analyses the AC grid connection of 640 MW wind power from Kriegers Flak to the 400 kV grid in Arrie and the 130 kV grid in Trelleborg. The division of the capacity is 340 MW to Arrie and 300 MW to Trelleborg. The report concludes with some preconditions necessary for the feasibility of the proposed grid connection.
- (Svenska Kraftnät, 2006, November)
This study is partly based on the previous study of the grid connection of Kriegers Flak. However the connection scenario here is a HVDC link to the 400 kV grid in Arrie and an AC link to the 130 kV grid in Trelleborg. The overall capacity of the two links is 640 MW, but the largest capacity is sought to be connected to Arrie. The connection of 640 MW is found possible, but the most advantageous solution concerning the necessary reinforcement of the 130 kV grid is not analysed.
- (Andersson, Petersson, Agneholm, & Karlsson, 2007)
This Article describes the possible connection of Kriegers Flak 2 to the 130 kv grid in Trelleborg and concludes that the connection is feasible, but requires some grid reinforcements.

Kriegers Flak 3

- (Udvalget for fremtidens havmølleplaceringer, 2007, April)
This report explored the possible locations of offshore wind farms in Denmark until the year 2025, where Kriegers Flak was ranked low due to high grid connection and grid reinforcement cost, but

the report mentions possible higher ranking if the project can be realized as part of an international project with Sweden and Germany. Furthermore the report holds a short description of the Kriegers Flak areas and mentions the possible cumulative effects on the environmental aspects. For the grid connection a HVDC connection with the option for a common collector grid for the three Kriegers Flak projects is assumed to be the most relevant.

- (Elinfrastrukturudvalget, 2008, April)
This report describes the possible principles for future reinforcement of the Danish 132, 150 and 400 kV-grid. The placement of an offshore wind farm at Kriegers Flak is not part of the basic scenarios, but in order to analyse the sensitivity of the grid reinforcement plans the Kriegers Flak wind farm is taken into account. This analysis concludes that building offshore wind power at Kriegers Flak instead of a placement in western Denmark does not influence the necessary grid reinforcement in western Denmark but will require extra reinforcements of the Eastern Danish grid. Meanwhile, possible advantages of the resulting more evenly spread distribution of wind power in the Danish power system are not analysed.
- (Energinet.dk, 2007, October)
This report describes the activities of the Danish TSO and the challenges connected to integrating renewable energies in the Danish energy system. Kriegers Flak is mentioned briefly and assumed to induce less stress on the western Danish transmission system.

Political and other bilateral agreements

- Meeting of the Ministers for energy of Germany, Sweden and Denmark (Governments of the Kingdom of Sweden, the Kingdom of Denmark and the Federal Republic of Germany, 2007)
The ministers of Sweden, Germany and Denmark have signed an agreement on offshore wind power cooperation regarding environment, grid connection and R&D. The main focus of the declaration are common research projects, which is an advantage for the Kriegers Flak project if it is declared as the common pilot project with the aim of developing and identifying common best practise as proposed by NordVind. According to a press release of *Mission of Norway to the EU* from July 2008 Norway will join this declaration.
- Danish working group for Kriegers Flak, August 2008
On the 25th of August the parties behind the *Agreement on Danish energy policy for the years 2008-2011* from February 2008 decided that the Danish Ministry for Energy and Climate should form a working group which is to analyse the possibilities for an offshore wind farm at Kriegers Flak and south of Læsø. The results are planned to be announced in November 2009. Furthermore the placement of a 400 MW wind farm, which will be the next point in the development of offshore wind farms in Denmark, was decided to be in the Kattegat between Djursland and Anholt.

References

Energinet.dk. (2007, October). *Systemplan 2007*.

Andersson, D., Petersson, A., Agneholm, E., & Karlsson, D. (2007, March). Kriegers Flak 640 MW Off-Shore Wind Power Grid. *IEEE Transactions on Energy Conversion* .

Bundesnetzagentur. (2008, January). *Bericht zur Auswertung der Netzzustands- und Netzausbauberichte der deutschen Elektrizitätsübertragungsnetzbetreiber*.

Dow Jones Newswires. (2008, July). *News - Vattenfall Europe verkauft Stromnetz bis Mitte 2009 (Linked from www.vattenfall.de)*. Retrieved from www.djnewswires.de:
<http://www.djnewswires.de/news.php?id=41036>

Ea Energianalyse. (2007, December). Structured summary of Nordvind Kriegers Flak meeting on December 12th 2007.

Elinfrastrukturudvalget. (2008, April). *Teknisk redegørelse om fremtidig udbygning og kabellægning i eltransmissionsnettet*.

EnBW. (2008, May). *Press Release - EnBW erwirbt vier Offshore-Windkraftprojekte* . Retrieved from www.enbw.de:
http://www.enbw.com/content/de/presse/pressemitteilungen/2008/05/20080513_mc/index.jsp

europa.eu. (2007, November). *Press Release - Commissioner Piebalgs endorses the work programmes of TEN-E coordinators Adamowitsch and Mielczarski*. Retrieved from <http://europa.eu>:
<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/07/1826&format=HTML&aged=0&language=EN&guiLanguage=en>

Governments of the Kingdom of Sweden, the Kingdom of Denmark and the Federal Republic of Germany. (2007, December). Joint Declaration on Cooperation in the Field of Research on Offshore Wind Energy deployment.

Mission of Norway to the EU. (2008, July). *News - Norway joins European cooperation on offshore wind power*. Retrieved from www.eu-norway.org: <http://www.eu-norway.org/news/offshorewind.htm>

Studie im Auftrag der Deutschen Energie-Agentur GmbH (dena). (2005). *Energiewirtschaftliche Planung für die Netzintegration von Windenergie in Deutschland an Land und Offshore bis zum Jahr 2020*.

Svenska Kraftnät. (2006, November). *Nätanalys för anslutning af Kriegers Flak – färfrågan från Vattenfall*.

Svenska Kraftnät. (2005, September). *Nätanalys för anslutning af Kriegers Flak*.

Sweco VBB VIAK. (2003, April). *Kriegers Flak vindkraftpark – miljökonsekvensbeskrivning*, . Eurowind AB.

Udvalget for fremtidens havmølleplaceringer. (2007, April). *Fremtidens havmølleplaceringer - 2025*. Energistyrelsen.

Vattenfall. (2008, June). *Kriegers Flak Vindkraftpark – Nyhetsbrev*. Retrieved from www.vattenfall.se:
http://www.vattenfall.se/www/vf_se/vf_se/Gemeinsame_Inhalte/DOCUMENT/196015vatt/815691omxv/819774vxrx/879800aktu/884844krie/P02132299.pdf

WPD. (2008, May). *Press Release - wpd secures realisation of German offshore projects and will boost its further pipeline*. Retrieved from www.wpd.de: http://www.wpd.de/uploads/media/Presse-Mitteilung_wpd-EnBW_deutsch.pdf

WPD. (2007, Dezember). *Press Release - WPD und Nordex vereinbaren Bau des ersten kommerziellen Offshore Windparks in Deutschland*. Retrieved from www.wpd.de:
<http://www.wpd.de/de/service/presse/pressemitteilungen/single/article/295/43.html>

Chronological overview on activities of Nordvind concerning Kriegers Flak

June 2007: Nordvind organises a workshop on Gotland (Sweden), where participants (Jette Kjær, Vattenfall windpower (DK) and Göran Loman Vattenfall (S)) propose to set up a demonstration project on international collaboration on rules and procedures for the three offshore wind farm projects at Kriegers Flak.

August 2007: Nordvind meeting, where Steffen Rønsholt Nielsen tells about the status of the three different projects. While the Swedish and German projects are approved, the Danish project has not received the necessary permissions. The group agrees on using Kriegers Flak as an example on managing offshore wind projects across borders, which should lead to a better management of such projects in future. The group decided to set up a meeting with initial discussions with the involved authorities, project developers and TSO's.

October 2007: Nordvind includes Kriegers Flak in the working plan for autumn 2007:

Kriegers Flak as a practical example

Among authorities and project developers there is a desire of a planning concerning offshore areas, power system, etc., especially in the economic zone, which is able to support a sustainable expansion of wind power and create a better basis for a common practice for cases for offshore wind farms which are placed across national borders between two or more countries. An example of this is Kriegers Flak. The project group will examine the options to make Kriegers Flak a practical example on managing issues on planning, laws and grid connections. It is intended that the experiences from Kriegers Flak are to be used on similar cases. The project group contacts the responsible project developers and the involved TSO's and arranges an initial meeting. Subsequently the project group will work out a description of the content and the aim of the project.

December 2007: On December the 12th Nordvind has a kick-off meeting with the representatives for the three Kriegers Flak projects. The participants are: Energimyndigheten (S), Vattenfall (S), Svenska Kraftnät (S), Vattenfall Europe Transmission (D), WPD Offshore (D), Energistyrelsen (DK), Vattenfall (DK) and Energinet.dk (DK). At the meeting the status for the three projects is explained and discussed. While the Swedish and German projects are planned and have permissions ready, the Danish project is not yet approved. There is an agreement within the group that a common project will only be relevant if Denmark can be part of it soon. On the following Nordvind meeting the group agrees on the importance of including not only grid connection issues, but also other relevant planning issues in the project.

Jan. 2008: Steffen Rønsholt Nielsen, Energistyrelsen, tells about the Danish-Swedish-German offshore declaration, which was formulated in Berlin in December 2007. The collaboration consists of Denmark, Sweden and Germany with Great Britain, the Netherlands and Norway as observers. A constituent meeting will be held in Brussels on the 11th of February.

The group agrees on trying to organize the Kriegers Flak project in two groups: A power system planning group (consisting of the TSO's) and an authority handling group (which addresses issues regarding both permitting procedures and environmental assessments).

The Nordvind group agrees on trying to organize a meeting of the different TSO's and will offer to act as an observer on the meeting and the progress of the work.

There is a consensus in the group that Nordvind's role is to initiate and coordinate the activities between the involved parts. At the same time Nordvind should act as an observer of the initiated collaboration and draw general conclusion and experiences which can be used for work on similar cases. Based on this Nordvind should come up with proposals on best practice to the decision-makers in order to ensure that political point of views will be part of the gained experience.

In the longer run, G.W. Adamowitsch who is the EU-commission's coordinator for connections to offshore wind power in Northern Europe should be informed about Nordvind's project.

Notice to a meeting with the relevant partners in the group concerning authority handling is postponed until the results from the meeting in Brussels on the 11th of February are known.

April 2008: Nordvind meeting. Steffen Rønsholt Nielsen, Energistyrelsen, reports that there has not been much progress since the last meeting. The TSO's are in contact with each other and try to find a date for a meeting. The Danish TSO Energinet.dk asked whether Ea Energianalyse, could make an analysis of the planning rules in the three involved countries, supported by Nordvind's funds. To this point no clear decision was made on this point, but Camilla Hay, Ea Energianalyse pointed out that it was important for the Nordvind project to get something in return for the work.

August 2008: Nordvind meeting. A number of initiatives are underway, but no overall work on collecting experiences and general issues. Both the issues concerning grid connection in an area where three countries have the option to establish offshore wind power and the impact on the environment should be seen in a common context. Therefore there is still a need for Nordvind's work on drawing conclusions, experiences and possible future solutions. Carl-Ivar Stahl, Energimyndigheten, will investigate the ongoing activities within the Swedish wind power industry with respect to Nordvind's Kriegers Flak activities. The secretary will work out a paper identifying the status of the project and defining the problems which are to be addressed. As part of this the relevant stakeholders, including the TSO's, the authorities and the project developers will be contacted. The paper should be finished in mid September and will work as input to the Nordvind presentation at the Vind2008 conference in Malmö in October.