



FOURTH MEETING

Esbjerg, Denmark

15-16 April 2004

Agenda Item: 6
Subject: Offshore wind parks
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Attached is an overview of existing and planned offshore wind farms in Denmark, Germany and the Netherlands

PROPOSAL: The meeting is invited to take note of the information

Offshore wind farm projects in Denmark, Germany and the Netherlands

Within the 12 sm zone adjacent to the Wadden Sea Area, one wind farm is in operation in **Denmark** (“Horns Rev”) (table 3). Two areas in **Lower Saxony** were appointed as pilot areas (“Riffgat” and “Nordergründe”) for which applications have been made (table 2). It is planned that routing of all electricity cables from offshore wind farms goes via Norderney to the mainland.

Outside the 12 zm zone on sites in the **German North Sea EEZ**, several planned wind farms are currently in application progresses in all kinds of planning stages (24 projects) (status 9 March 2003, Table 1).

From these 24 projects, building licenses were issued to:

- “Borkum West” (45 km north of Borkum, 12 turbines) in November 2001,
- “Borkum Riffgrund West” (50 km northwest of Borkum, 80 turbines) in February 2004,
- “Borkum Riffgrund” (34 km north of Juist, 77 turbines) in February 2004,
- “Butendiek” (34 km west of Sylt, 80 turbines) in December 2002,

In the **Netherlands**, there are four offshore wind farms in different stages of licensing, which are located at the west coast of Noord Holland and therefore are not adjacent to the Wadden Sea Area (Table 4).

An overview of the locations of existing and planned offshore wind farms is in the attached map.

Table 1: Offshore wind farm projects in the German North Sea EEZ outside territorial waters (12 sm) (Source BSH, 9 March 2004). * = no details available because application process is in a very preliminary phase.

No.	German North Sea (EEZ) 1)	Max capacity	Location	Characteristics	Status (March 2004)
1	Borkum West (Prokon Nord)	1040	45 km north of Borkum	12 turbines in pilot phase (3.5 – 5 MW)	License issued November 2001
2	Dan-Tysk (GEO)	1500	45 km west off Sylt	300 turbines (5 MW), first phase 80 turbines	Application March 2003
3	Borkum Riffgrund-West (Energiekontor)	1800	50 km northwest of Borkum	485 turbines (5 MW), first phase 80 turbines	License issued in February 2004
4	Borkum Riffgrund (PNE2 Riff I GmbH)	750	North of Borkum (38 km) and Juist (34 km)	180 turbines (3-5 MW), first phase 77 turbines	License issued in February 2004
5	Amrumbank West (Müden)	400	36 km southwest of Amrum	80 turbines (3.5 – 5 MW)	Application June 2000
6	Nordsee Ost (Amrumbank) (Winkra)	1250	30 km northwest of Helgoland	250 turbines (4-5 MW) first phase 80 turbines	Application June 2000
7	Meerwind (Windland)	819	15-50 km northwest off Sylt	234 turbines, 3.5 MW, first phase 75 turbines	Application August 2000
8	Butendiek	240	34 km west off Sylt	80 turbines (3 MW) 20 m water depth	License issued in December 2002
9	*	2700			
10	*	17,500			
11	Globaltech 1 (Sulingen)	1440	100 km	320 turbines	Application June 2001
12	North Sea Windpower (ENOVA)	1255	40 km north off Juist	251 turbines (4-5 MW)	Application June 2003
13	Hochsee WP "Nordsee" (EOS)	2286	75 km north of Borkum	508 turbines (4.5 MW), first phase, 119 turbines, 550 MW, 40 m depth	Final application submitted in December 2003
14	Sandbank 24 (Sandbank 24)	4720	100 km west of Sylt	980 turbines, pilot phase 120 turbines, 360 und 600 MW	Application July 2001
15	*	896	224 turbines	45 km offshore	
16	*	400	80 turbines	49 km offshore	
17	*	505	170 turbines	83 km offshore	
18	*	13,500	Ca. 3000 turbines	133 km offshore	
19	*	600	200 turbines	130 km offshore	
20	*	600	200 turbines	112 km offshore	
21	Nördlicher Grund (NEG Micon)	2195	402 turbines (3.5 – 6 MW), pilot 87 turbines	86 km offshore	Application December 2001
22	Hochsee WP "He dreiht" (EOS)	535,5	75 km north of Borkum	85 km offshore	Application January 2002
23	*	2550	596 turbines	100 km offshore	
24	*	4000	800 turbines	200 km offshore	

Table 2: Offshore wind farm projects in the German North Sea within territorial waters (12 sm) (responsibilities by the Federal States).

Name	Max. Capacity (MW)	Location	Characteristic	Status
Nordergründe	> 200	between Wangerooge and Cuxhaven	25 turbines, each 5 MW, 170 m	Spatial planning concluded in December 2003, environmental assessment in preparation.
Riffgat	198	15 km northwest off Borkum	44 turbines	EIA in preparation to be submitted in 2004.

Table 3: Offshore wind farms in Denmark: Four wind farms are in operation. Procedures are going on to develop 2 - 3 more sites, all in the Baltic Sea, with a combined capacity of over 500 MW.

	MW	Distance from coast (km)	Number of turbines	Permission
North Sea:				
Horns Rev	160	14 – 20	80	2002
Baltic Sea:				
Middelgrundten	40	2 - 3	20	2000
Tunø Knob	5	6	10	1995
Vindeby	4.5	1.5 - 3	10	1991

Table 4 Offshore wind farms in the Netherlands

Name	Capacity	Location	Characteristic	Status
Windpark Q7-WP (outside 12 sm)	120	24 km west of Egmond an Zee (Noord Holland)	60 turbines (2 MW)	Permit licensed to E-Connection (February 2002), building will probably start in summer 2004.
Near Shore Windpark "Egmond" (inside 12 sm)	100 MW	8 - 18 km west coast of Egmond an Zee (Noord Holland)	36 turbines (2.75 MW), starting with 3 turbines	Building license published and now in juridical procedure.
Location Beverwijk "Corus"		Near shoreline, near Egmond (Noord Holland)		Application for license in preparation
Location Maasvlakte		Near shoreline, Maasvlakte (Zuid-Holland)		Application for license in preparation

Map of offshore wind farm projects adjacent to the Wadden Sea Area
 (version 8 March 2003, source: BSH)

- 1 wind farm in operation (Horns Rev, DK),
- 4 licensed projects outside 12 sm (3 wind farms 40 – 50 km off Borkum, 1 wind farm 34 km off Sylt),
- 20 planned projects in different planning stages (outside 12 sm),
- 2 planned projects inside 12 sm (Riffgat near Borkum, Nordergründe near Weser mouth).

Note: Dutch offshore wind farm projects are located at the west coast of North- and South-Holland and have not been included in the map.

