Business to Business Meetings
Esbjerg 2009

German Offshore Wind

Martin Schmidt, *windcomm schleswig-holstein*

Agenda

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I. windcomm schleswig-holstein
Schleswig-Holstein`s Network Agency for Wind Energy

II. Offshore Wind Energy in Germany
Current Developments and Business Environment

III. Cluster Management for Offshore Wind
A Network of Excellence

IV. Conclusion

Part I

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Schleswig-Holstein`s Network Agency for Wind Energy

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- is a **network agency** in the field of wind energy
- acts as **partner for companies and organisations** that specialize in the field of wind energy or wish to enter the booming wind energy business
- **supports companies in all their activities** around wind energy. Clients are plant manufacturers, service providers and specialist companies in the fields of mechanical or electrical engineering. Also training, research and development organisations
- **contributes to the local economy** by promoting wind energy: coordinating know-how and activities of the wind energy industry in the region

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- **Offshore wind energy**
  Ensuring that the potential for offshore wind energy plants is utilised, to the benefit of Schleswig-Holstein and the companies located in the region. We are therefore developing an **offshore strategy for Schleswig-Holstein**.

- **Repowering**
  Development of **practical repowering solutions** aimed at **preventing potential conflicts**.
- **Export**
  Supporting local companies entering the wind energy export business and helping them establish **contacts to potential** business partners and wind energy **project managers abroad**.

Part II

Offshore Wind Energy in Germany

Current Developments and Business Environment

Worldwide Offshore Wind

Future Leading Markets

Installed Offshore Wind Capacity by 2015

- UK 40 % (ca. 7.9 GW)
- **Germany 18 % (ca. 3.5 GW)**
- Denmark 8 % (ca. 1.6 GW)
- US 6 % (ca. 1.2 GW)

European Offshore Wind Projects

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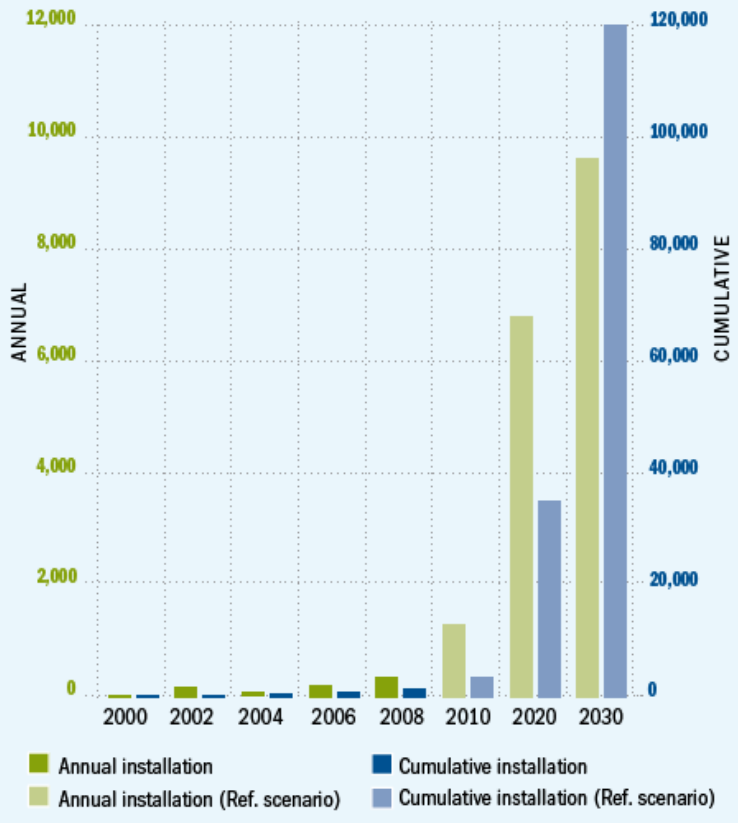
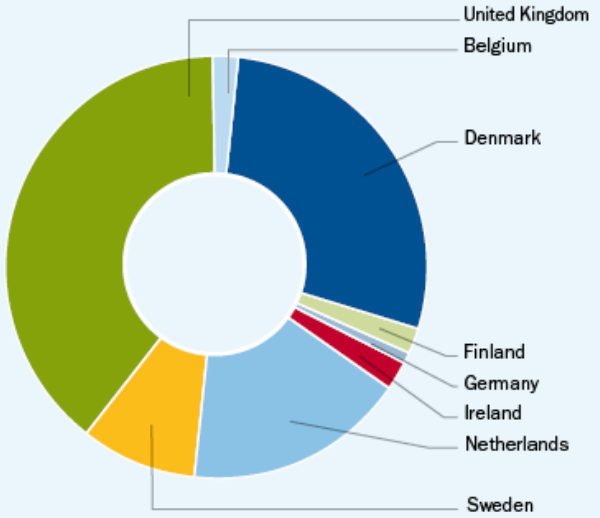
Offshore wind market development in the EU up to 2008 and EWEA's scenarios up to 2030 (MW)



Operational offshore wind farms



United Kingdom	39%	590,80 MW
Denmark	28%	409,15 MW
Netherlands	17%	246,80 MW
Sweden	9%	133,30 MW
Belgium	2%	30,00 MW
Ireland	1%	25,20 MW
Finland	2%	24,00 MW
Germany	1%	12,00 MW
TOTAL		**1,471,33 MW**

Source: EWEA 2/2009

German Feed in Tarifs

Onshore (§ 29)	Offshore (§ 31)
Initial remuneration (2009): **9.20 ct/kWh** Basic remuneration (2009): **5.02 ct/kWh** Degression: **1% p.a.**	Initial remuneration (2009): **13 ct/kWh** **Sprinter bonus** on top of initial remuneration: **2 ct/kWh** if commissioned before 31 Dec. 2015 Basic remuneration (2009): **3.50 ct/kWh** Degression: **5% p.a.** from 2015

German Offshore Wind Projects

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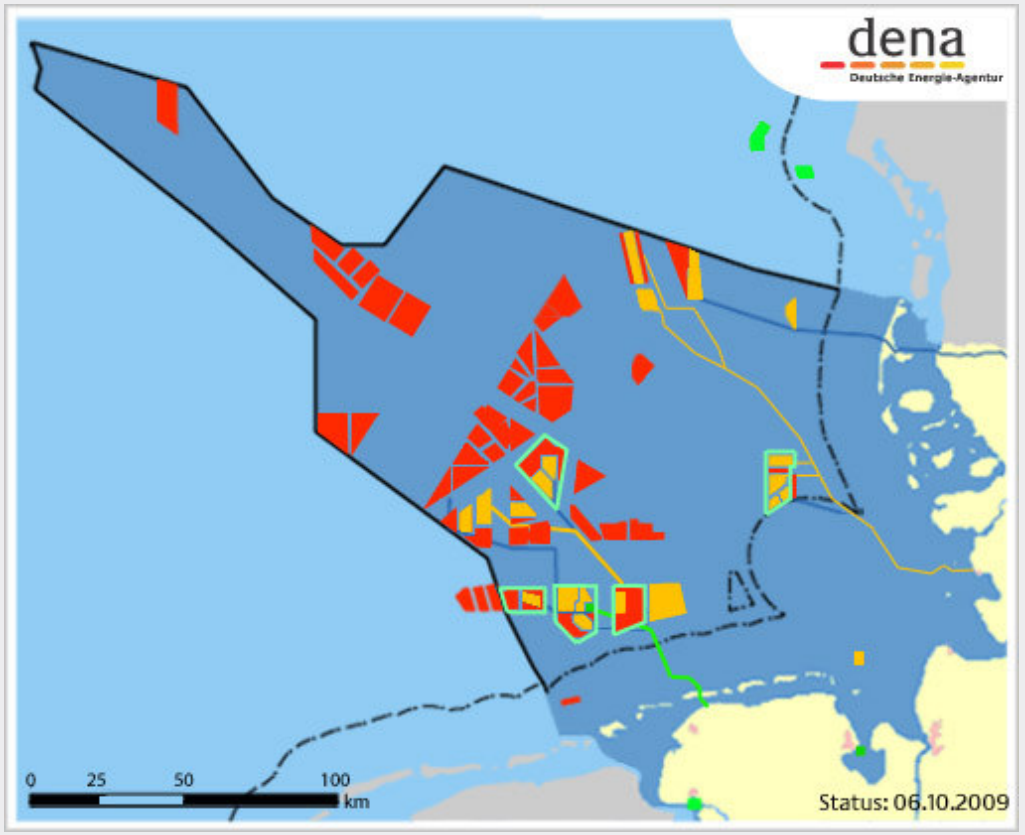
Wind Farm:	Borders:
Online	Continental Shelf / EEZ
Licensed	12 nm zone
Under consideration	National borders
	Deep water channels
	High Voltage Cable (approved)
	High Voltage Cable (pending)
	High Voltage Cable (in use)
	Priority Use Wind Energy (Draft)

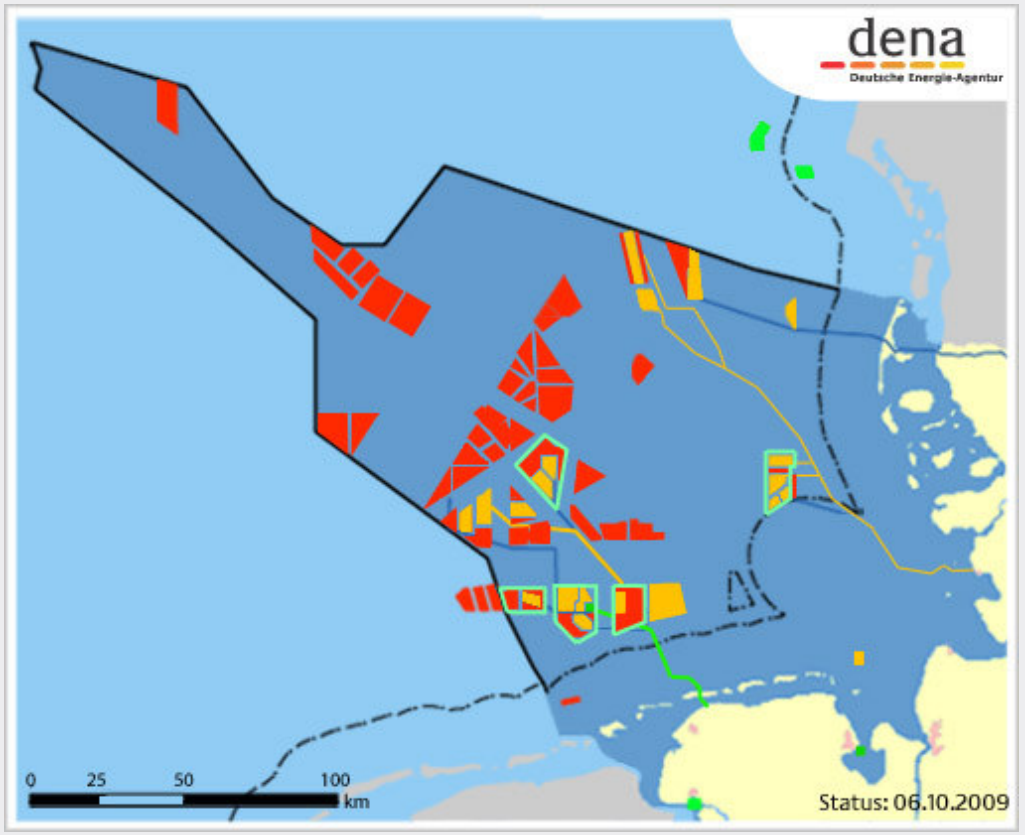


Source: DENA 10/2009

German Offshore Wind Projects

Northern Sea

- **19 licensed parks**
- **Distance to shore:**
  Ø 57 km
- **Water depth:**
  Ø 29 m



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German Offshore Wind Projects

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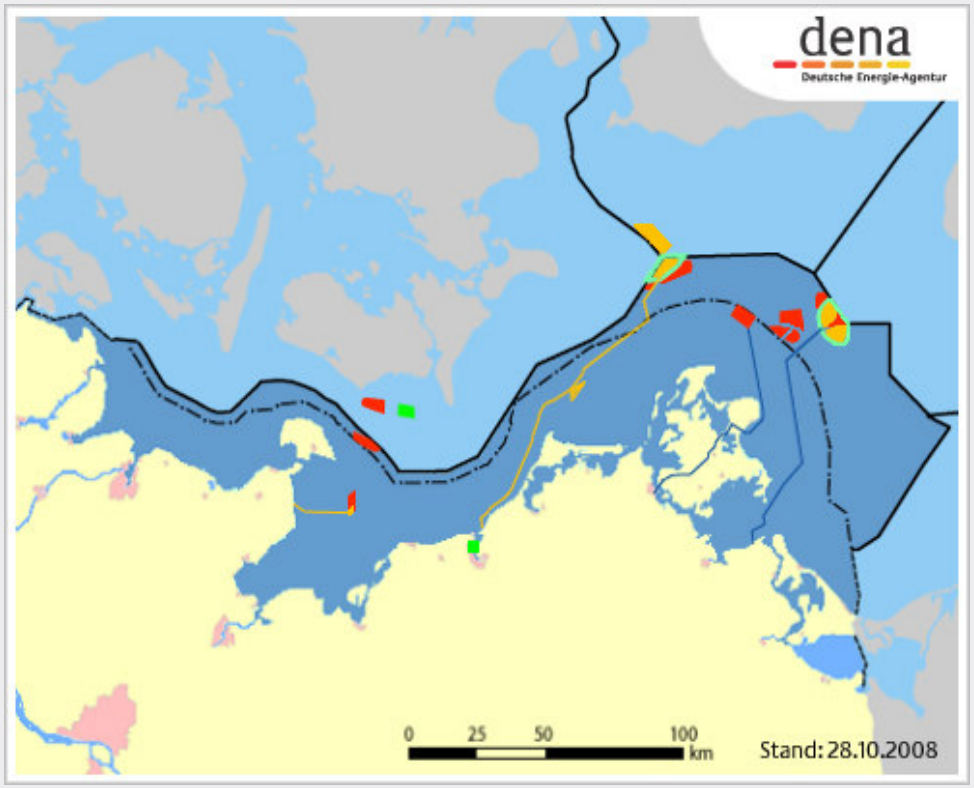
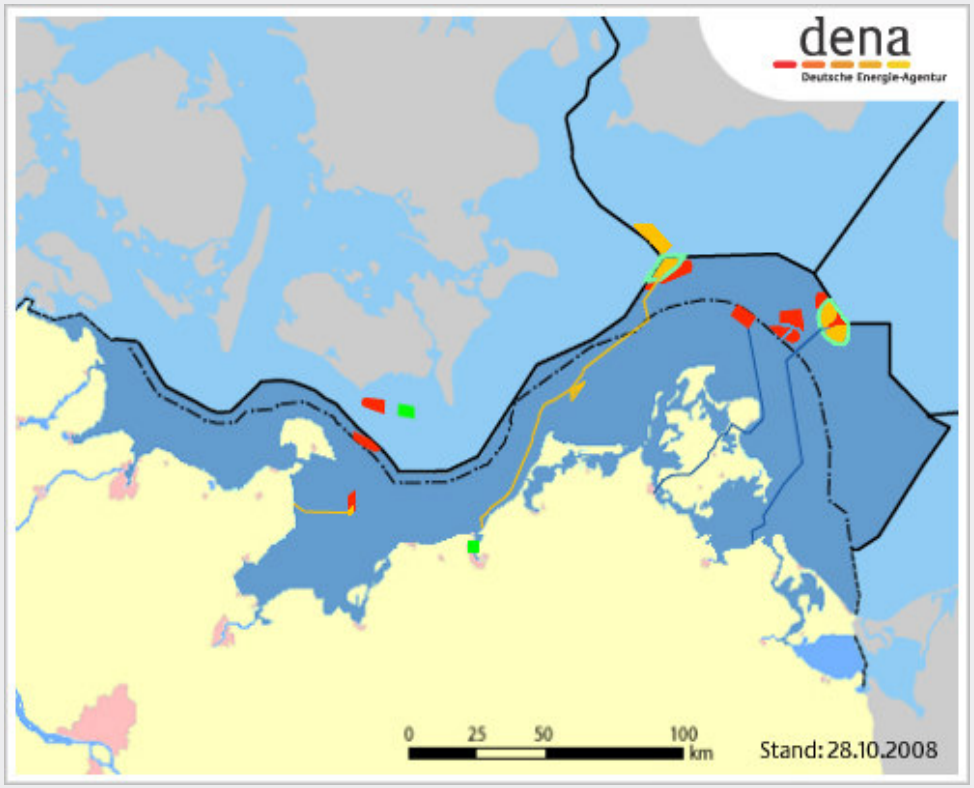


Source: DENA 10/2009

German Offshore Wind Projects

Baltic Sea

- **5 licensed parks**
- **Distance to shore:**
  Ø 27 km
- **Water depth:**
  Ø 24 m



Source: DENA 10/2009

Current Problems in Germany

- **Lack of experience in offshore oil and gas**
- **Long distances to shore**
- **Great water depths**
- **Extreme influences of the global credit crunch**
- **Lack of qualified and trained offshore staff**
- **No German grid in existance**

Part III

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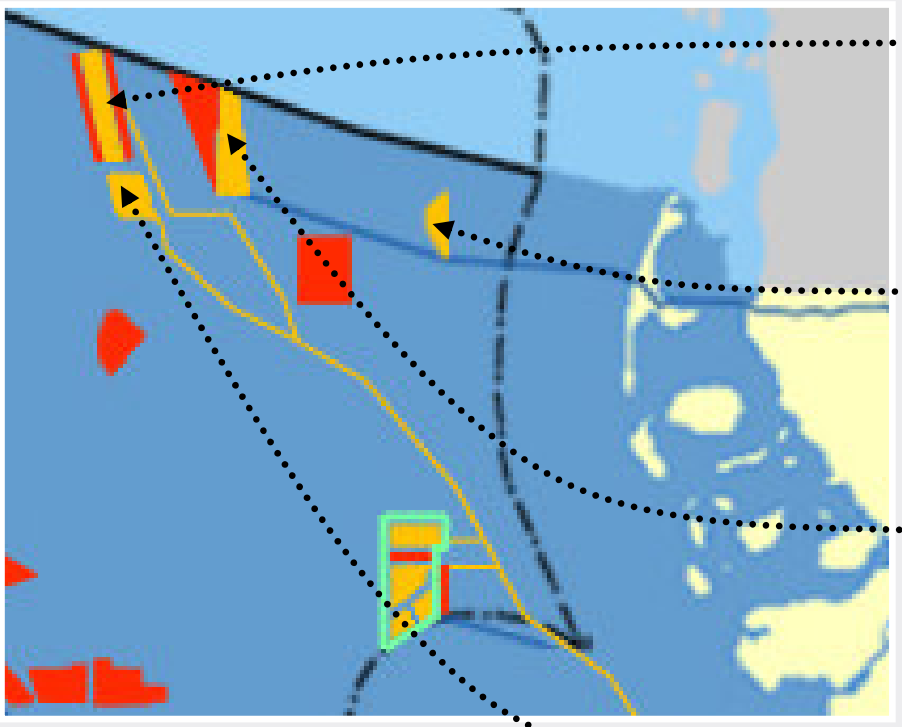
Cluster Management for Offshore Wind

A Network of Excellence

Schleswig-Holstein´s Offshore Projects

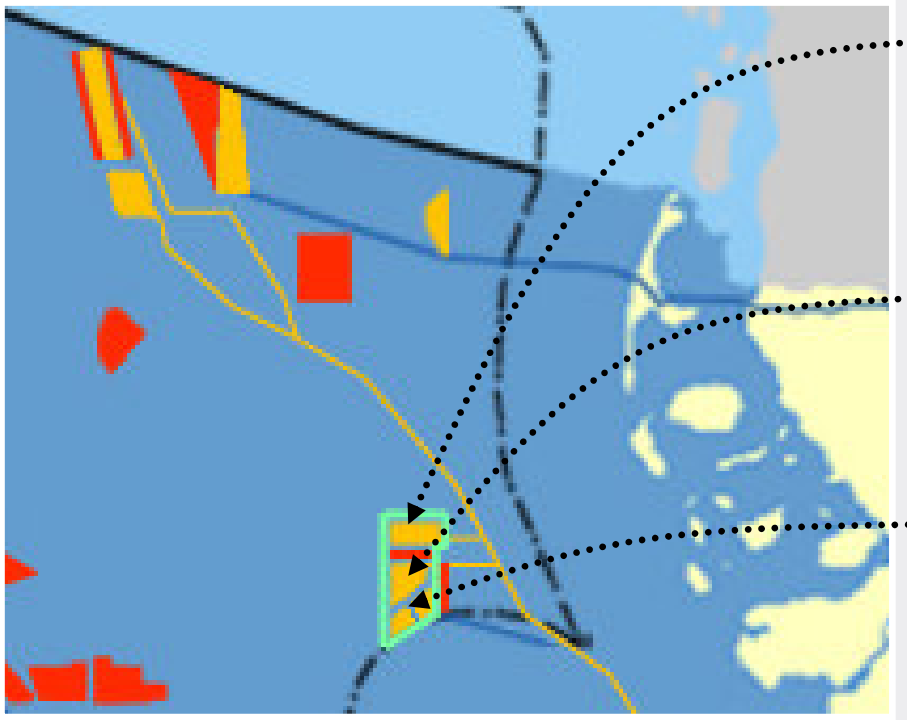


Source: DENA 2009.

The Sylt Cluster

- **Sandbank 24**
  96 WT, 480 MW
  Distance to shore: 90 km
- **Butendiek**
  80 WT, 264 MW
  Distance to shore: 37 km
- **Dan Tysk**
  80 WT, 400 MW
  Distance to shore: 70 km
- **Nördlicher Grund**
  64 WT, 320 MW
  Distance to shore: 84 km

Schleswig-Holstein´s Offshore Projects



The Helgoland Cluster

- **Amrumbank West**
  80 WT, 400 MW
  Distance to shore: 36 km
- **Nordsee Ost**
  80 WT, 400 MW
  Distance to shore: 30 km
- **Meerwind Süd und Ost**
  80 WT, 400 MW
  Distance to shore: 22-32 km

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- In the early 2000s a network structure was set up to develop and promote wind energy in Schleswig-Holstein
- The network consisted of the key players in wind energy:
  - **CEwind**
  - **Investment Bank Schleswig-Holstein**
  - Network agency ***windcomm schleswig-holstein***
  - Wind energy trade fair **Husum WindEnergy**

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Achievements of the network to date:

- Adaption of University courses, further education and training to the requirements of offshore wind
- Ongoing research promotion into offshore wind
- Improved Know-how transfer and business contacts with the international market leaders to support Schleswig-Holstein's offshore projects
- Helping the region become more important and being better known as an international offshore wind location
- Promoted the testing and development of wind turbines

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Wind turbines manufacturer

DeWind, Lübeck
REpower Systems, Husum/Rendsburg
Vestas Wind Systems, Husum

Component supplier & service provider

WEIER Antriebe und Energietechnik, Eutin
(Generators for wind energy turbines)
WEST GmbH, Langenhorn
(Assembling, Disassembling)
Hansen Windtechnik, Husum
(Service, Maintenance)

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Research & Development

CEwind (Center of Excellence); Kiel, Flensburg research network

Aerodyn Energiesysteme GmbH, Rendsburg design & development of wind energy turbines

Education & Training

Universities of applied sciences in Kiel, Flensburg, Master study programme "Master of Wind Engineering"

Education Centre for Renewable Energies (BZEE), Husum, certified schooling and training measures

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Project developer

Airtricity Germany, Hamburg/Husum
Plan 8 GmbH, Eckernförde
BGZ AG / WKN AG, Husum
GEO, Langenhorn

Airtricity

PLAN 8 GmbH UNENDLICHE ENERGIE

Haus der Zukunftsenergien
House of Future Energies

GEO

Part IV

Conclusion

Conclusion

- Germany will be a leading market in offshore wind
- Guaranteed feed in tariffs for licensed offshore parks provide a good business environment
- High availability of qualified staff in the region
- Excellent research network focused on offshore wind
- Excellent test conditions
- Dense network of experienced companies for joint ventures

Thank you for your attention!

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Network agency for wind energy

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