

Current and future trends in offshore wind financing

Dirk Mous
Infrastructure & Renewables



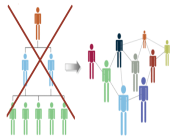
Agenda

1. NIBC Bank
2. Conclusion
3. Current Status of German Offshore Wind Sector
4. Future Trends in Offshore Wind Financing

Appendix

NIBC Bank N.V.

Profile



- Dutch Merchant Bank established in 1945 with offices in The Hague, Frankfurt, London and Brussels
- One-stop shop: Debt Financing, Equity Financing and Financial Advisory
- Short decision processes and tailor made solutions for mid-cap clients in Europe
- Strong Tier-I ratio of 15.5% and high liquidity
- Long and proven track record in Energy and Infrastructure deals with over 120 signed transactions
- 22 team members dedicated to Infrastructure & Renewables

NIBC Infrastructure & Renewables

The bank is dedicated to Renewable Energy

Renewable Energy

- Offshore wind
- Onshore wind
- Photovoltaic
- Biomass
- Biogas
- Biofuels
- Geothermal

Conventional Energy

- Waste-to-Energy
- Coal power plants
- Gas power plants
- Gas pipelines
- Gas storage
- Oil tanks

Infrastructure / PPP

- Roads / Toll Roads
- Schools
- Parlements
- Prisons
- Hospitals
- Harbours / Airports
- Rolling Stock

Closed and ongoing offshore transactions include:

- Financial Advisor to BARD (“BARD NL”)
- Structuring bank for Energiekontor (“Nordergruende”)
- Mandated Lead Arranger for Centrica (“Boreas”)
- Mandated Lead Arranger for Evelop (“Q 7”)

 Development of Dutch Offshore Wind Projects Financial Advisor  2010	 Project Financing Nordergründe 100 MW wind farm North Sea Germany Mandated Lead Arranger  Pending	 GBP 425 million Senior Secured Loan Facility for financing of a Wind Portfolio Mandated Lead Arranger  2009	 EUR 230 million Project Finance Facility Offshore Windfarm Q7 Joint Lead Arranger  2006
---	--	---	---

Agenda

1. NIBC Bank
2. Conclusion
3. Current Status of German Offshore Wind Sector
4. Future Trends in Offshore Wind Financing

Appendix

Conclusion

Offshore wind challenging but bankable

- Offshore wind industry still at beginning of learning curve which makes banks cautious and limited in number
- Mature technology/processes and economies of scale still to come
- Technical, contractual and financial challenges have delayed most German offshore wind farms by 1-3 years
- German offshore wind so far on-balance sheet financed by utilities
- Projects ≥ 40 turbines make KfW / EIB involvement inevitable
- Offshore wind projects compete with lower risk infrastructure deals
- State guarantees could improve financing capabilities of banks
- Banking market improving but financial requirements will remain high
- Market not ready for bonds or underwriting in 2010

Agenda

1. NIBC Bank
2. Conclusion
3. Current Status of German Offshore Wind Sector
4. Future Trends in Offshore Wind Financing

Appendix

Current Status of German Offshore Wind Sector

What happened in 2008 -2010 ?

Ups

- New EEG with higher feed-in tariff and sprinter bonus passed
- First wind farm “Alpha Ventus” (60MW) commissioned in April 2010
- State-owned promotional bank KfW issued finance program for German offshore wind farms (up to EUR 200m per project)
- Banking market has improved in recent months and banks have appetite for good Renewable & Conventional Energy deals

Downs

- Contractual, technical and investor challenges have delayed Germany's first commercial projects so far by 1-3 years
- No project-financed offshore wind farm in Germany yet
- Difficulties in fulfilling grid connection criteria prior to Financial Close
- Equity investors acted hesitant due to relative low IRRs, risk distribution, multi-contracting / project structures, waiting for new EEG, bottleneck of turbines, vessels and manpower

German Offshore Wind Pipeline 2010 / 2011

German offshore wind projects heading for Project Finance

Global Tech I
80 Multibrid M5000
CAPEX of c. EUR 1.3bn

Gode Wind II
80 Vestas V90 (3MW)
CAPEX of c. EUR 0.8bn

Meerwind
80 Siemens 3.6 MW
CAPEX of c. EUR 1.0bn

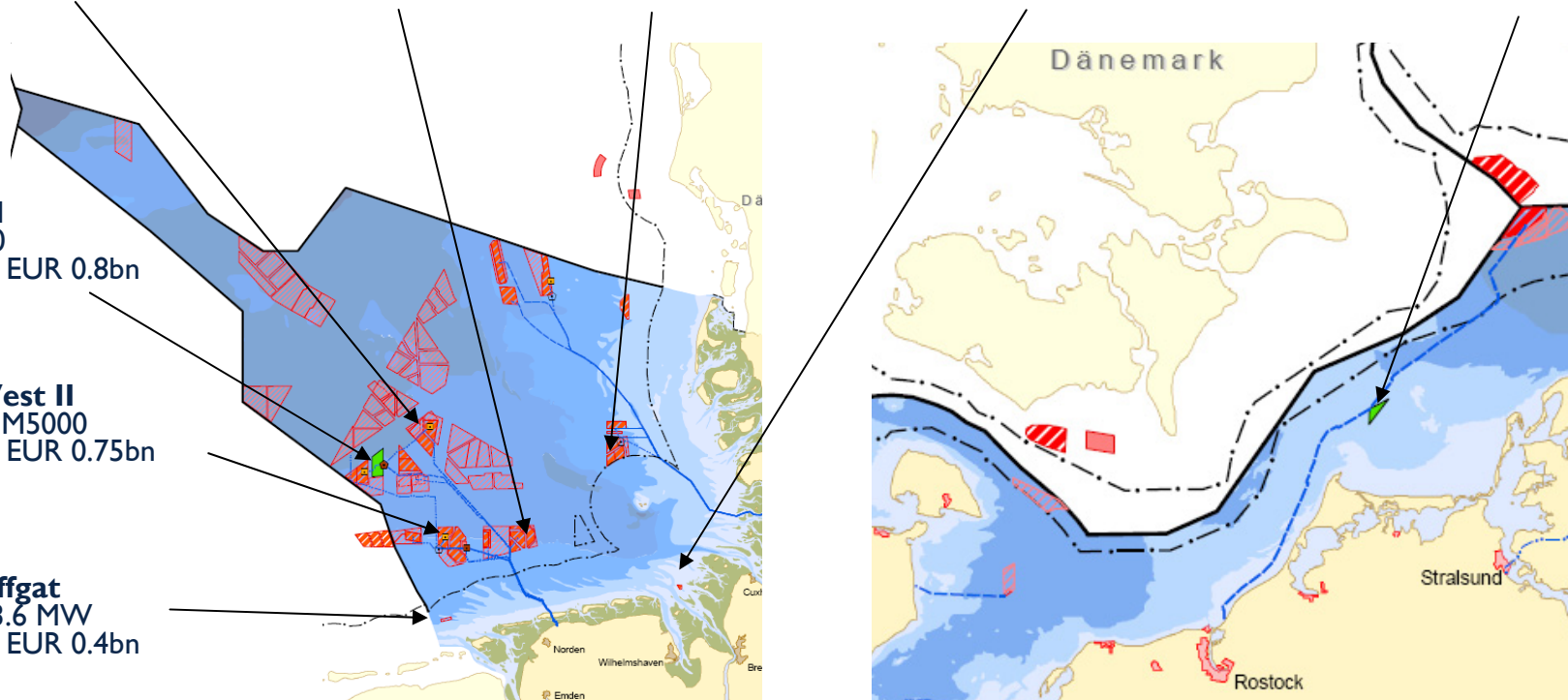
Nordergruende
18 Repower 5M
CAPEX of c. EUR 0.3bn

Baltic I
21 Siemens 2.3 MW
CAPEX of c. EUR 0.2bn

Veja Mate I
40 BARD 5.0
CAPEX of c. EUR 0.8bn

Borkum West II
40 Multibrid M5000
CAPEX of c. EUR 0.75bn

Borkum Riffgat
30 Siemens 3.6 MW
CAPEX of c. EUR 0.4bn



Source: BSH – April 2010

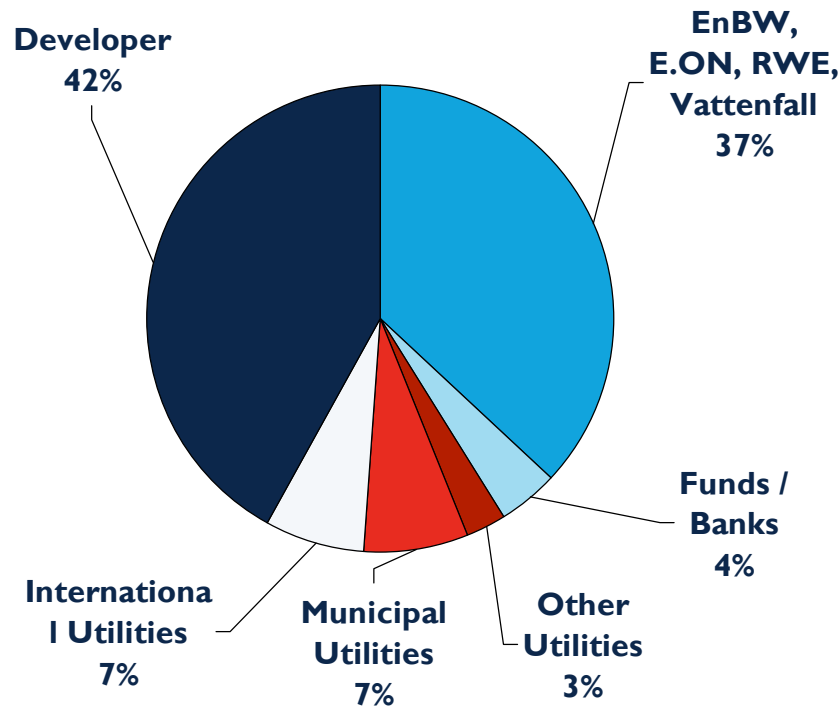
In total, c. EUR 3.6bn of project finance debt are required

Assuming 10 available banks for offshore wind in Germany each financing 4 projects with EUR 40m, would leave EUR 2.0bn for KfW/EIB !

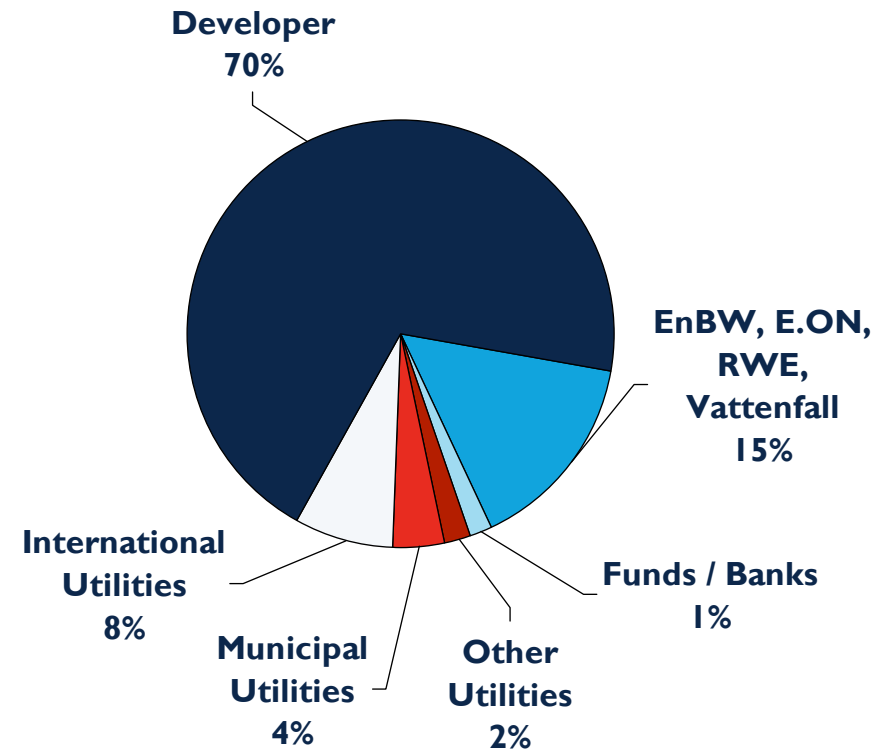
German Offshore Wind – Equity Sponsors

Current German projects mainly developed/financed by utilities

Ownership of the planned and authorized installed offshore wind capacity - total 9.000 MW -



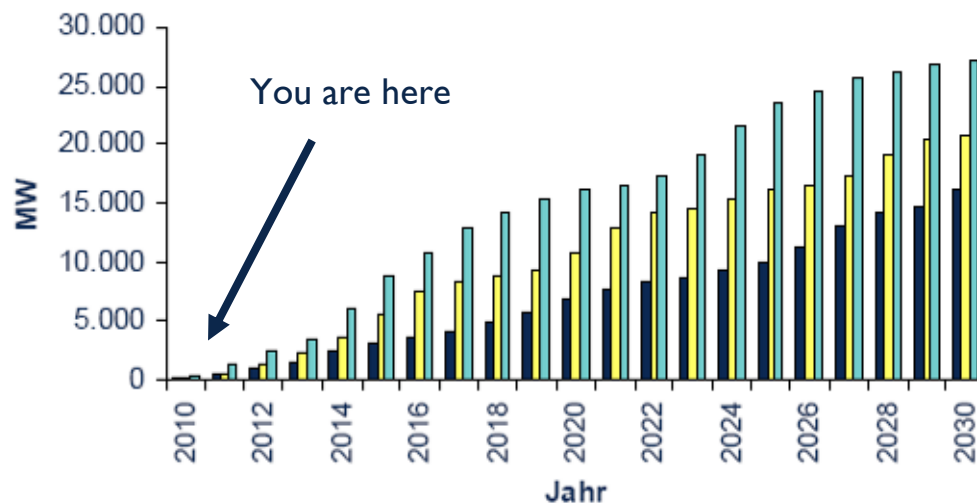
Ownership of the planned installed offshore wind capacity - total 25.900 MW-



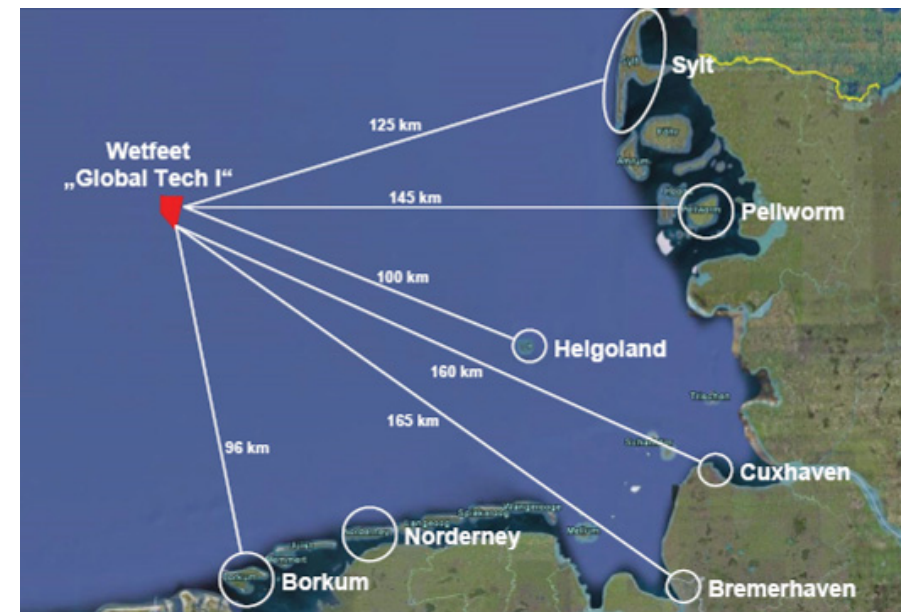
Current Challenges in Offshore Wind

Technical challenges or what keeps a banker awake at night

Maturity: Offshore industry is still at lower end of technical learning curve. Only small exchange of experience between developers. Offshore development can not be copy-pasted from onshore



Location: German offshore wind farms in much deeper water further away from the coast than Dutch, French or UK projects -> higher CAPEX and O&M

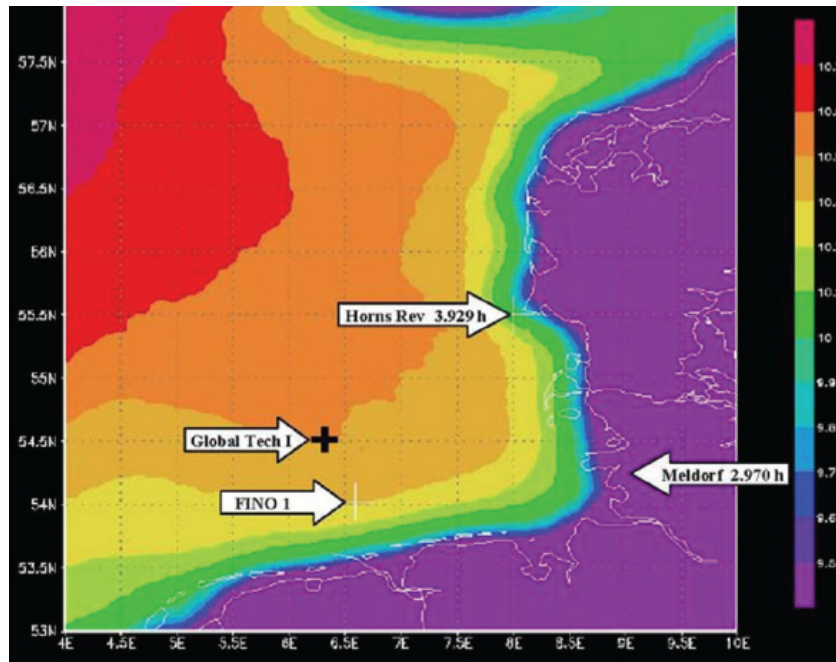


Current Challenges in Offshore Wind

Technical challenges or what keeps a banker awake at night

Wind Yield: So far, only Fino test field and Alpha Ventus data available in Germany. This leads to Sponsors' (P50) vs. Lenders' (P90) Business Cases

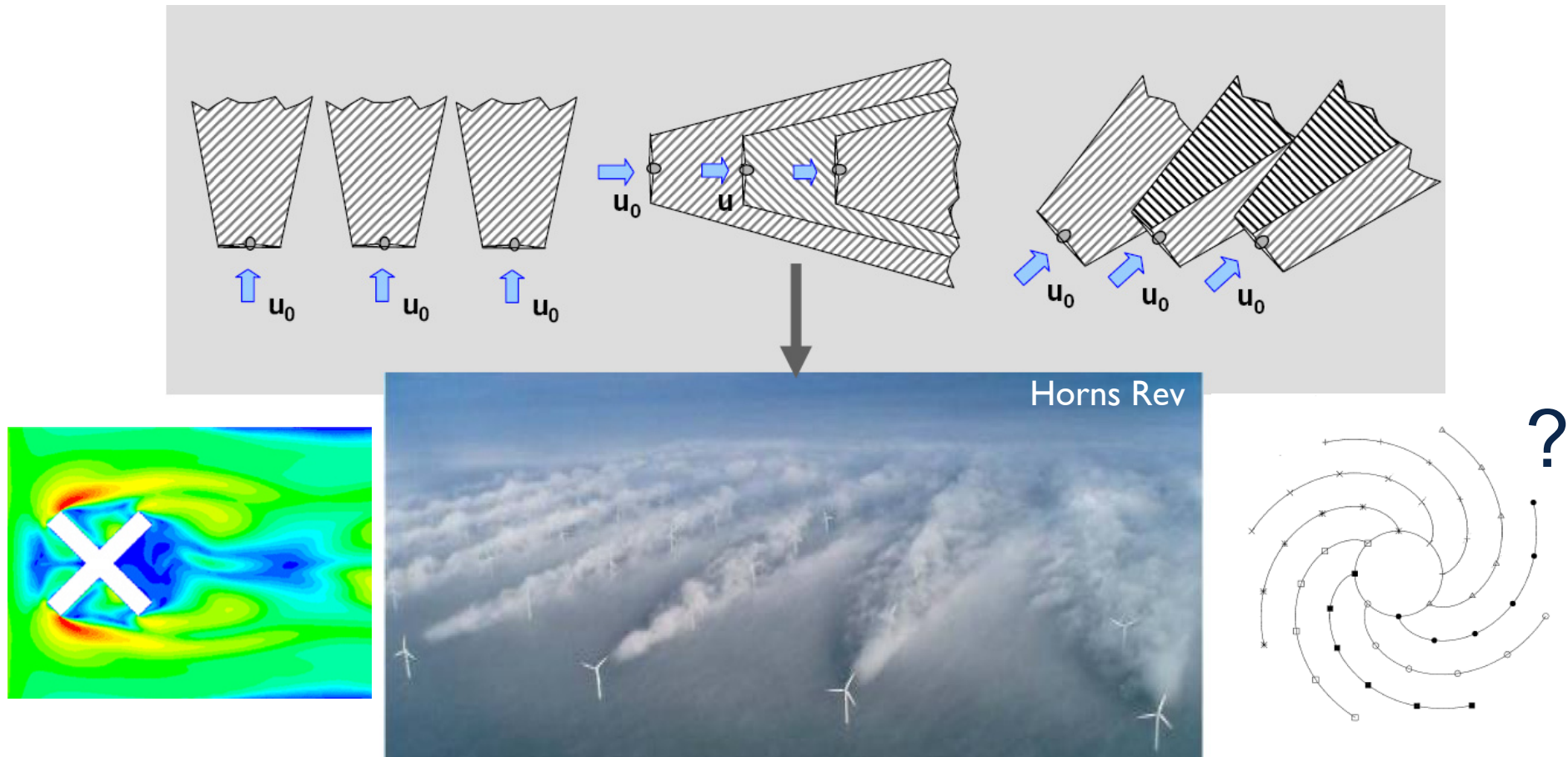
Vessels: Bottleneck not only for erection but also for heavy O&M work at turbines, e.g. Alpha Ventus where several turbines need exchange of major parts



Current Challenges in Offshore Wind

Technical challenges or what keeps a banker awake at night

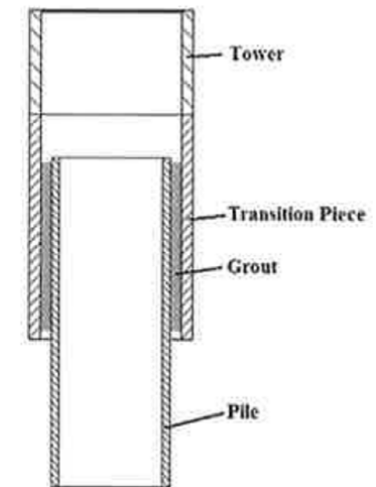
Wake effect: Difficult to calculate and to model. Industry currently developing optimized farm layouts



Current Challenges in Offshore Wind

Technical challenges or what keeps a banker awake at night

Foundations: Recently, severe grouting problems were found at monopiles leading to a potential settlement of the tower



Conclusion: Many challenges already coped with, many challenges still ahead.

“Wherever possible, don’t be the first to do something”

Michael Hotze (Noble Denton)

Current Challenges in Offshore Wind

Contractual challenges

- Multi-contracting: Absence of real EPC contract requires excellent interface and project management and clear guarantee arrangements
- Meeting of grid connection criteria vs. Financial Close (chicken-egg problem)
- Government should give clear guidelines regarding permit procedure and grid-connection
- Turbines: Lengthy TSA negotiations for new 5MW turbine class
- Guarantees by turbine manufacturers and their parents
- Renegotiation of contracts (especially TSA) time-consuming
- Contract negotiating without bank involvement leads to necessity of renegotiating to make contracts bankable
- Need for standardization and certification

Current Challenges in Offshore Wind

Financial challenges

- Maximum 12 banks willing to finance offshore wind in Germany; number is rising but only good projects will attract finance
- Financial crisis dried out underwriting/syndication market
- Banks are currently focusing on UK and Germany
- Final take and hold by banks substantially down (c. EUR 30-50m)
- German state-owned bank KfW finances offshore wind farms with up to EUR 200m. However not utility-owned projects
- Need for state-guarantees (via KfW ?) to finance large debt packages
- Excellent parent guarantees vs. non-recourse financing
- Offshore wind projects compete with lower risk projects (e.g. roads) that have comparable margins
- Currency risks in UK projects
- Some banks open for offshore wind but risk-averse (equity >50%, no 5MW turbines, no construction risks, no non-recourse)

Agenda

1. NIBC Bank
2. Conclusion
3. Current Status of German Offshore Wind Sector
4. Future Trends in Offshore Wind Financing

Appendix

Future Trends in Offshore Wind Financing

Return to pre-crisis days ?

Debt

- Underwriting / Syndication 2012
- Higher Final Takes and Holds 2011
- More banks open for offshore wind 2011/2012
- Bond Financing 2012
- Renewables Debt Funds 2011/2012
- Project Finance by large utilities 2010/2011

Equity

- Public equity funds (like solar or onshore) ?

Requirements

- Lower margins No
- Lower DSCRs and equity ratio No
- Lower security requirements No

Agenda

1. NIBC Bank
2. Conclusion
3. Current Status of German Offshore Wind Sector
4. Future Trends in Offshore Wind Financing

Appendix

Example of an Offshore Wind Financial Structure

Based on a 400MW wind farm, construction risk involved, non-recourse basis, 17 years fixed feed-in tariff under EEG

Financial Structure

- CAPEX: EUR 1,350m
- Equity: EUR 500m (35%)
- Project Debt: EUR 850m (65%), thereof
 - European Investment Bank: EUR 250m
 - KfW-Foerderbank: EUR 200m
 - Commercial Banks: EUR 400m (10 banks)

Key Parameters

- Minimum DSCR: 1.35x (P90-Case)
- Tenor: 3.5 years construction and 15 years operational phase
- Margins: 300bps with step-up to 375bps
- Cash Sweep: 0% (1-4), 75% (5-8), 100% (9-15)

Contact



Dirk Mous

NIBC Bank N.V.

Vice President

Infrastructure & Renewables

Neue Mainzer Str. 52

D-60311 Frankfurt am Main

Tel. +49-69-5050 655-73

Mobile +49-162-2611117

Mail dirk.mous@nibc.com

Thank you for your attention !

NIBC Renewables Credentials

 DEVELOPMENT OF DUTCH OFFSHORE WIND PROJECTS Financial Advisor  2010	 GBP 425 MILLION SENIOR SECURED LOAN FACILITY FOR FINANCING A WIND PORTFOLIO Mandated Lead Arranger  2009	 GBP 36 MILLION SENIOR LOAN FACILITY TO DANU II HOLDINGS FOR THE FINANCING OF A UK WIND PORTFOLIO Mandated Lead Arranger  2009	 EUR 83 MILLION SENIOR FACILITIES BIOGAS PLANT 22MWel „GÜSTROW“ Mandated Lead Arranger  2009	 ACQUISITION OF MINORITY INTEREST IN ELECTRAWINDS BIOSTOOM NV  Advisor to NIBC Infrastructure Partners  2008	 EUR 69 MILLION SECURED CREDIT FACILITY 44MW WIND FARM 'KOEGORSPOLDER' Mandated Lead Arranger and Bookrunner  2007
 EUR 70.5 MILLION KOEGORSPOLDER WINDPARK Sole Mandated Lead Arranger  2007	 EQUITY INVESTMENT IN OFFSHORE WIND FARM "GODE WIND" NORTH SEA, GERMANY Advisor  2007	 EUR 129 MILLION PROJECT FINANCE FACILITIES Sole Mandated Lead Arranger  2006	 EUR 230 MILLION PROJECT FINANCE FACILITY Joint Lead Arranger  2006	 USD 245 MILLION PROJECT FINANCING SANHA LPG FPSO Lead Manager & Underwriter  2005	 EUR 287 MILLION Q7 OFFSHORE WINDPARK Tax Investor  2005
 EUR 14.5 MILLION SENIOR FACILITIES & HEDGING ARRANGEMENT 12.6 MW WINDPARK BRUGGE TRIS Mandated Lead Arranger  2004	 USD 15 MILLION PROJECT FINANCING WIND TURBINE TEST PARK WIERINGERMEER Mandated Lead Arranger  2004	 BMC MOERDIJK 38 MW BIOMASS PLANT Advisor to Client  2004	 EQUITY INVESTMENT Q7 OFFSHORE WINDPARK Arranger and Equity Provider  2004	 EUR 25 MILLION PROJECT FINANCING 18 MW WIND FARM TRANDEIRAS, PORTUGAL Mandated Lead Arranger  2003	 EUR 18 MILLION PROJECT FINANCING SLUFTERDAM WIND POWER Sole Lead Arranger  2003