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Experiences and Perspectives on Turnkey Projects

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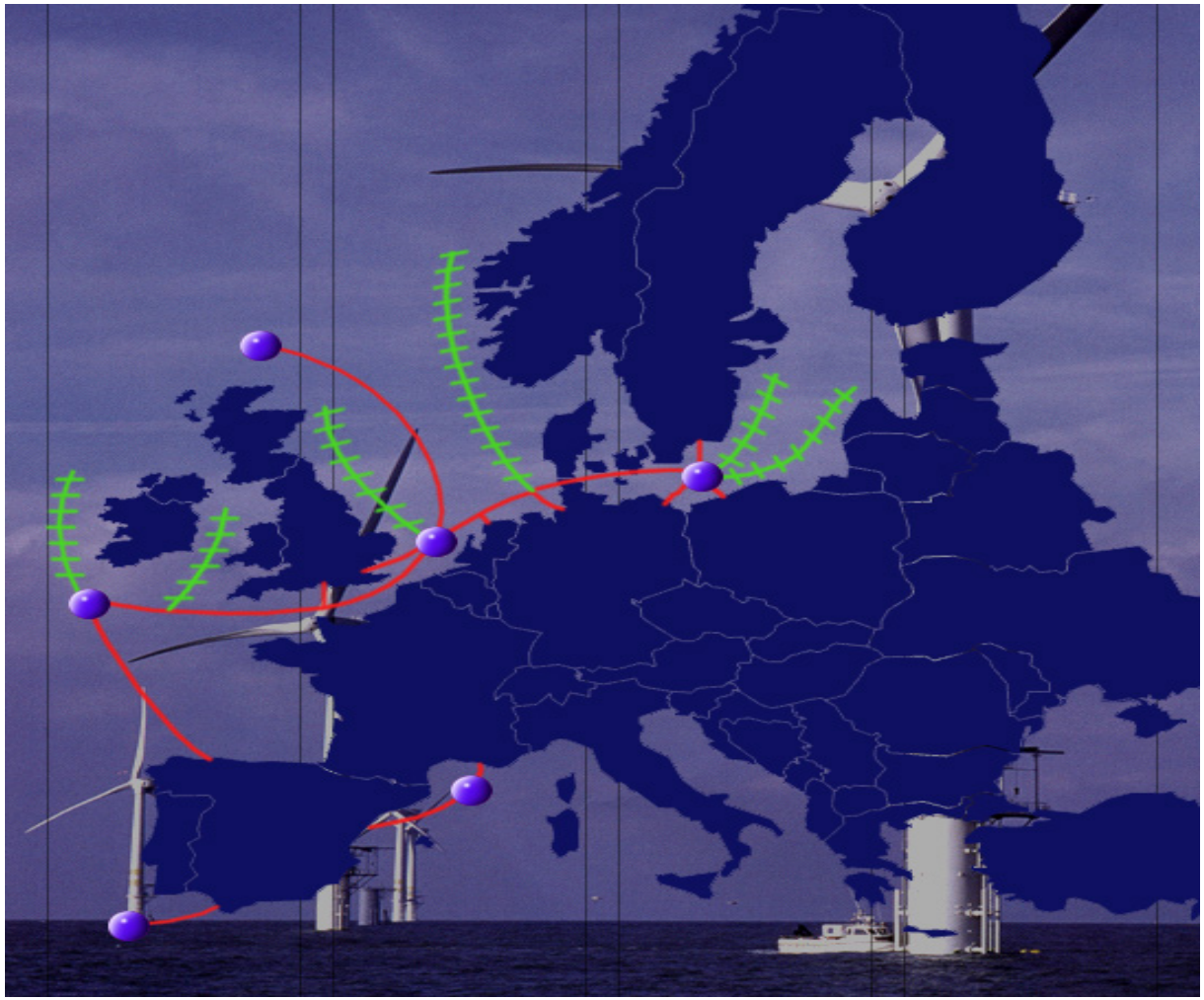
Copenhagen Offshore Wind 2005

Airtricity overview

- HQ in Dublin, founded in 1997 (originally Future Wind Partnership. 1999 changed name to Airtricity)
- A fully integrated renewable utility with 43,000 SME Customers in The Republic of Ireland and Northern Ireland
- 230 employees, active in the Republic of Ireland, Northern Ireland, England, Scotland, Wales, United States, The Netherlands, Germany and China.
- Strong offshore strategic commitment and focus

The Offshore SuperGrid™



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Offshore crisis as turnkey duo pulls the plug

The UK offshore wind industry has been plunged into crisis by the shock collapse of contract negotiations

senior source told reNews.

Sources suggest Siemens, which has been in the position of

may have left supply of its 3.6MW turbine on the table but has made it clear it is no longer interested in the

So what went wrong in the different cases?

Common view from contracting unit:

- **EPC contractor not willing to take risks**
- **Concern over subcontractors skills**

Common view from EPC/Subcontractors:

- **Unacceptable business risks**
- **Burdensome supplier conditions**
- **Profitability significantly below expectation**

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The real issues

- Supply changes in the wind market
- Level of maturity of Offshore wind technology
- A few WTG manufacturers have decided at board level to abandon full EPC and focus on turbine supply
- A number of contractors have experienced financial losses in early projects
- Skills shortage and migration of staff to the Oil & Gas industry
- A number of serious cost overruns and delays have been experienced
- Limited number of players in the contracting market
- Still awaiting an offshore wind project to be project financed

Some observations

- Lack of dialogue in the early stages of development between contractors and developers
- Risk being transferred without consideration to contractor
- Some contractors and subcontractors have signed up to work with limited experience and capability
- Development plans too optimistic at times
- Risk management systems to be improved
- A limited number of large-scale EPC players in the market

Is Turnkey still an option for offshore?

- The answer is yes, but with modifications
- Turnkey and Multicontracting can both work if done right
- Lenders however have some reservations on providing non- or limited recourse construction finance to offshore projects on a multicontract approach
- Multicontracting will require significant experience, skillbase & financial strength
- Turnkey contractors on the other hand will require broad shoulders as cost overrun risk looms large because of sheer scale

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What is needed to make the Turnkey approach work

- Need for dialogue between contracting unit and contractors
- Early engagement between parties is key to understanding risks
- Construction focus at development stage
- Upskilling of subcontractors must start now
- Consider risk sharing through equity participation
- The industry needs to attract more significant and financially strong EPC players
- The financial institutions must be kept involved

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Use effective Risk Management to drive down costs

- Identification and allocation of risks to be done a systematic way
- Identify who is best suitable to manage risks
  - Might open need for partnering or early engagement of contractor
- Ensure that risks are not counted twice
- Do not ignore risks when difficult to quantify or understand
- The Offshore wind industry must demonstrate experience and credibility in Risk Management to the finance community

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Experience and approach

- **Arklow Bank (IRL) and Greater Gabbard (UK)**

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Arklow Bank, Ireland

The site

- Located 10 -12 km off the East coast of Ireland on the Arklow Bank

Project milestones

- July 2000, Environmental monitoring programme commence and met mast installed in December 2000
- June 2001, Environmental Impact Assessment completed
- January 2002, Foreshore Lease for construction of 520MW awarded to Airtricity from the Department of Communications, Marine and Natural Resources in Dublin
- June 2003, Co-development agreement signed with GE Wind Energy for the construction and operation of the first phase with a size of 25MW

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Arklow Bank, Ireland

- **Offshore construction on the Arklow Bank, Summer 2003**

Arklow Bank, Ireland

- Initial Airtricity focus was on full EPC approach
- Build-Own-Operate-Transfer (BOOT) agreed with GE Wind Energy
- The wind farm is currently being operated by GE Wind Energy with Airtricity as an offtaker for the power
- Airtricity and EHN jointly hold the option to purchase the first phase of Arklow once operation has been proven by GE Wind Energy
- A Win-Win solution, but unique and might not be seen again
- Airtricity and EHN will jointly develop the second phase of Arklow, total of 95MW

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Greater Gabbard, UK

- 500MW offshore site awarded as part of The Crown Estate Round Two tender in the UK
- Located in the Outer Thames of the East coast of England
- 50/50 Joint Venture between Airtricity and Fluor, with Airtricity currently in the role as lead-developer.
- Joint Venture with an EPC contractor
- Consents application for 500MW submitted on 17th October 2005

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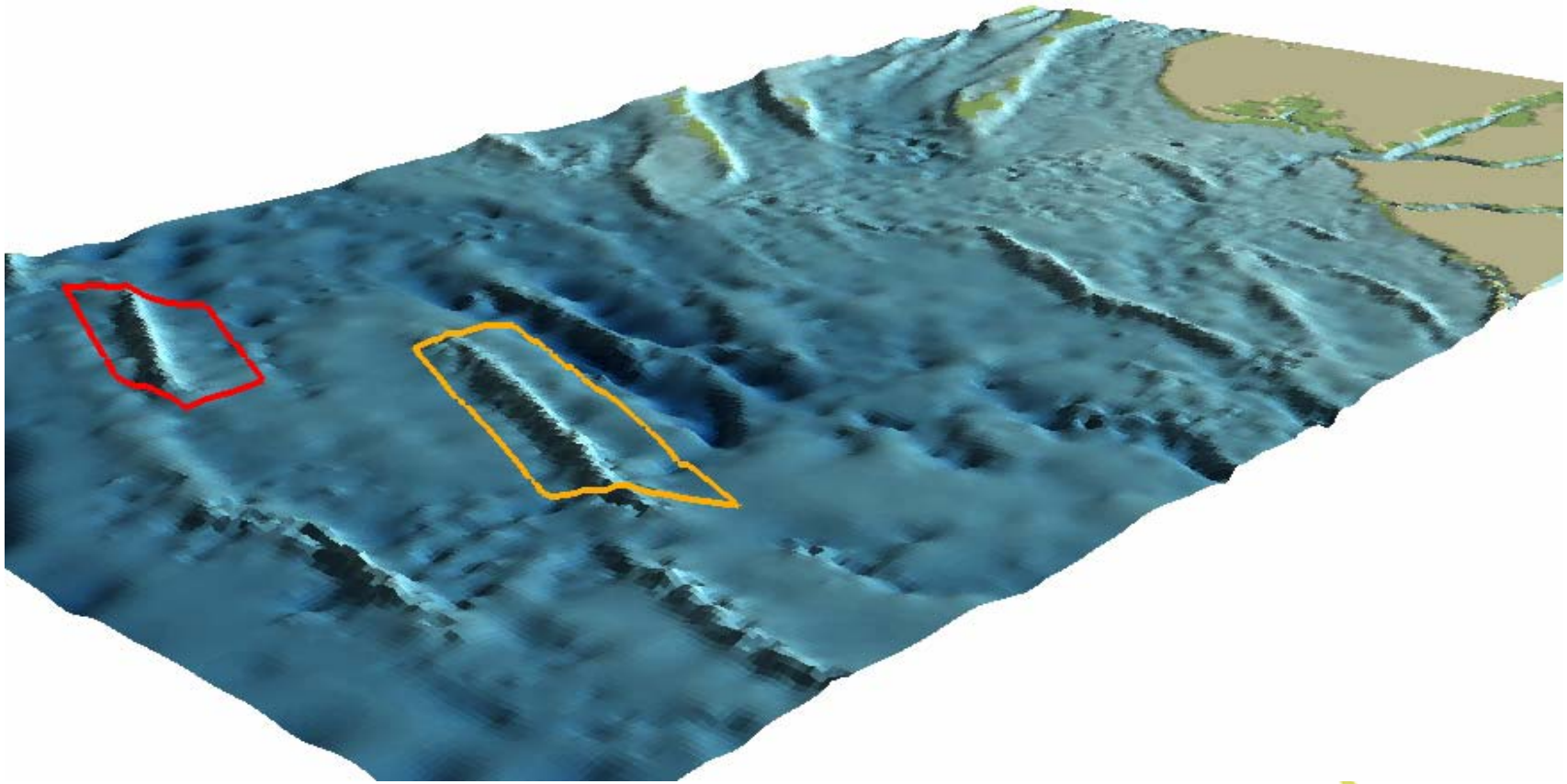
The Greater Gabbard site



Characteristics of JV

- High degree of respect and dialogue between JV partners
- Risk sharing through equity participation and risk management an integral part of the development programme
- Strong construction focus at development stage
- All-inclusive project development plan
  - Site Investigation completed
  - Hydrographical survey completed
  - Met Mast installed
- JV to tender on a turnkey project financed basis

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Met Mast installed

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Timeline for Greater Gabbard

- Q4 2003 Site awarded from The Crown Estate
- Q3 2005 Submission of Consents application
- Q2 2006 Obtain Consents
- Q2 2007 Financial Close
- Q4 2007 Construction to commence

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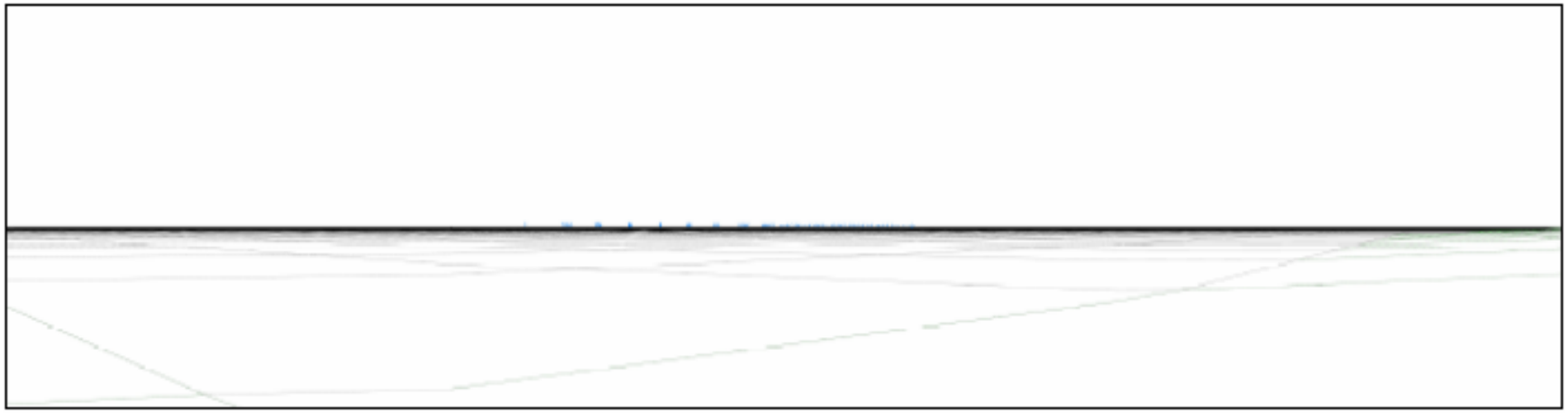
Viewpoint 3: Aldeburgh Seafront (Photomontage)



Viewpoint 3: Aldeburgh Seafront (Wireframe)

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Conclusion

- Turnkey, but with modifications is still to be considered
- Early engagement and dialogue is needed between contracting unit and contractor
- Consider risk sharing through equity participation
- Upskilling of sub-contractors must happen now
- More significant and financially strong EPC players most be introduced in the industry
- The offshore wind industry must demonstrate experience and credibility in risk management to the finance community