Floating Wind Solutions

Going commercial ... and the importance of return of experience

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Agenda

- Let's not kid ourselves, we're going big and it's happening now!
- What does full-scale return on experience bring to the table?
- Possible impact on business-models?



BW Ideol?







Over 10 years of international experience

A **fully integrated team** of 60+ specialist engineers representing 8 nationalities

A global player with offices on 3 continents

A **listed company** on the Oslo Stock Exchange



Numerous **industrial, financial** and **R&D partnerships** with leading international companies and universities







First full-scale
offshore wind turbine
installed in France



First full-scale foreign floating wind technology installed in Japan



Pioneer and leader in concrete hulls and synthetic mooring solutions



Buildable in **steel** or **concrete**



Outstanding power production and seakeeping **performance**



The **most compact** and shallowdraft **solution** when fitted with tomorrow's XXL offshore wind turbines



Dozens of ongoing **R&D projects** to **accelerate** the **cost reduction** trajectory of floating wind





A two-leg strategy

Sharing development risk and asset ownership

Supply EPCI and O&M services in conjunction with our patented Damping Pool™ technology

2 main objectives







Winning tenders and delivering on-time and on-budget floating offshore wind assets















The most mature and marketready floating substation on the market



Power to Platform and storage solutions





Going BIG and going NOW



Going BIG and going NOW

- BIGGER farms
- BIGGER budgets
- BIGGER risks

Hence the value of MULTI-YEAR and FULL-SCALE return on experience





- TECHNICAL validation (as a solid basis for continuous improvement)
 - Power curve and power curve assessment tools and methods
 - Seakeeping behaviour
 - Mechanical loads and fatigue (turbine, substructure, mooring solution)
 - Construction and installation methods / scaleability
 - O&M procedures
 - Finetuning of scada / monitoring system
- Not ignoring the "softer" matters
 - Feedback on occupational safety during maintenance, crew transfers, etc.
 - Proof testing of interface mgt and contractual set-ups with all stakeholders (OEM's in particular)
 - Identification of principal supply chain and logistics risks
 - Identification/validation of sensitive quality control points





Aim for BANKABILITY from the start

- Build FULL-SCALE demonstrators implementing different design options (different hull materials and mooring materials, different water depths, etc.)
- Use a different certification body for each of your initial projects
- Use certified monitoring equipment (when existing) to get approvable data
- Implement rigourous commissioning and testing procedures to validate your simulation models
- Have third parties validate your test data
- Be TRANSPARENT with your financial and insurance partners. Show how you solved issues and managed problems BEFORE overselling your success stories.



- Reliability: Designing and executing a "solution" that is perfectly suited for sitespecific conditions
- Productivity: Demonstrating the accuracy of your energy yield prediction
- Performance: Demonstrating an adequate construction and operational performance

Contract review

Construction and Installation

Site characteristics

Structural design

Turbine and Control

O&M

Financial model

Electrical

Planning and
Environment

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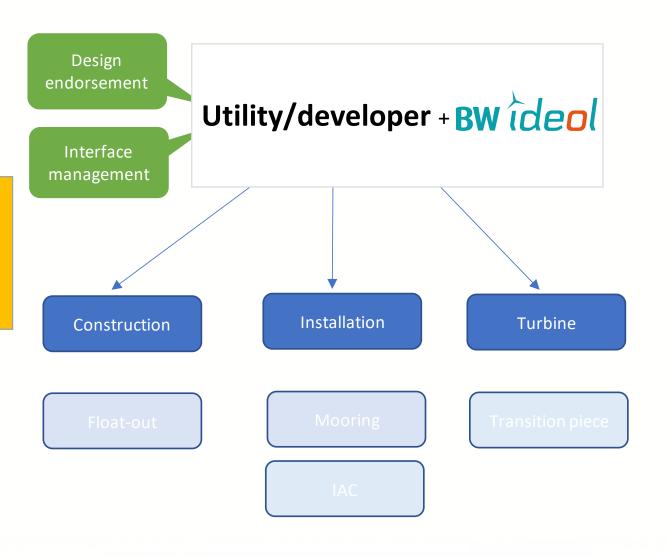


Leveraging that ROE with new business models



Other Business Model Opportunities

Total allignment of objectives as cash devex co-investors



Technology-SPECIFIC

Contractor-AGNOSTIC

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We are recruiting our Head of Development for the US

contact me!



Thank you.

BW ideal

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