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R&D: Wat is the effect of corrosion?

R&D: Can we measure and predict scour?

R&D: What is the effect of extreme waves on offshore structures?

R&D: Can we extend the lifetime of the structure to 30 years (FLS)?

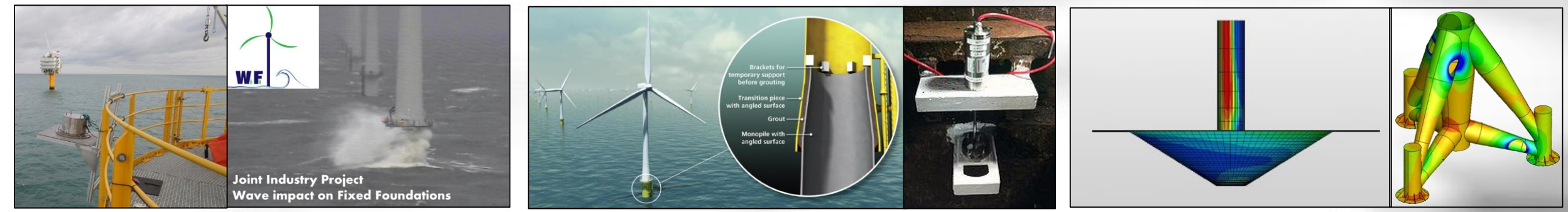
R&D: Effect of extreme waves on structure (ULS)?

...

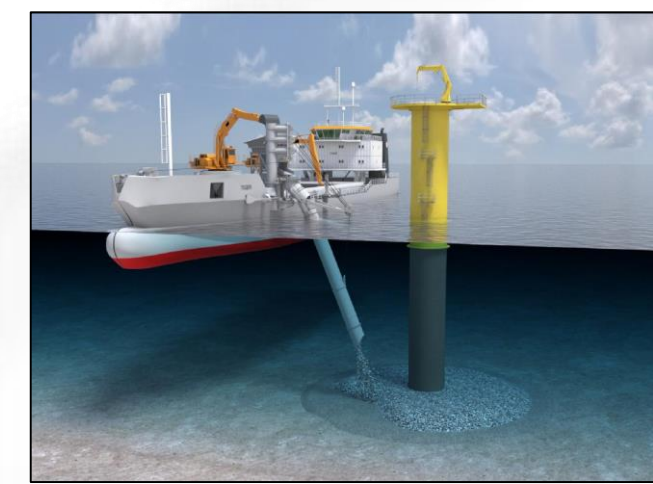


Taking away innovation thresholds through partnerships

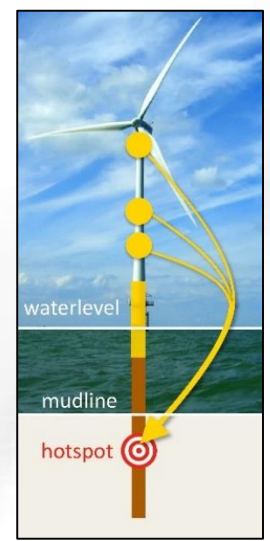
Examples of the 'win-win' for industry (sector) and the research community



Collaboration in EU JIP project
Additional monitoring: wave radar



Investigation of 'scour' and new low cost techniques to monitor it's effects



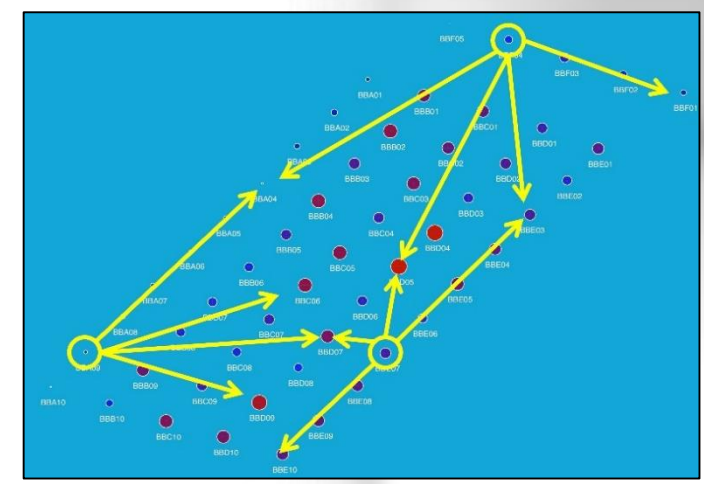
Testing and validation of new sensor and monitoring techniques

Risk reduction by monitoring certain topics (reduction insurance fee)

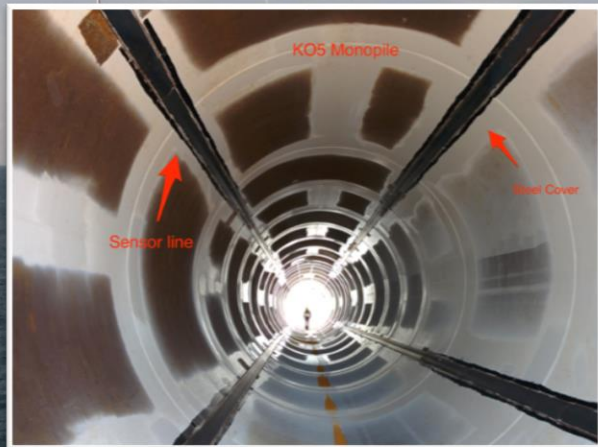


New foundation designs + steel reduction

More accurate simulation models based on field data



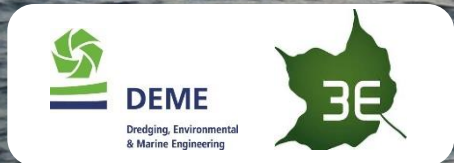
Advanced maintenance and insights in lifetime of wind turbine structures



Taking away innovation thresholds through partnerships

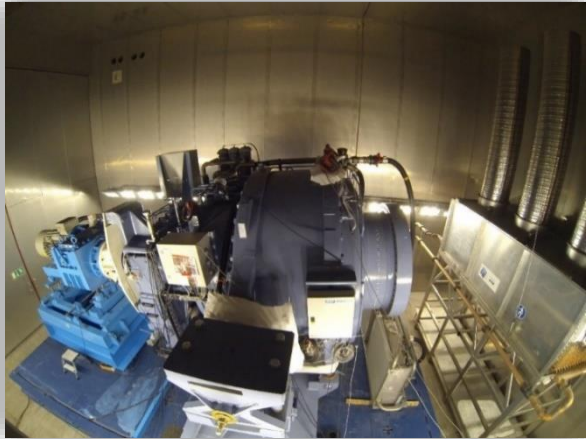
R&D: € → knowledge

Innovation: knowledge → €



Taking away innovation thresholds: access to unique lab's

Access to unique testing environments – i.e. large climatic test chamber: temperature & humidity tests



Example 6.XMW offshore WTG gearbox



Example bird radar system



Example 5.5MW offshore WTG transformer



Example testing of new gearbox lubricants

Climatic test lab used to test machine prototypes and their ability to operate in the most severe weather conditions that occur worldwide either onshore and offshore

- Controlled Arctic cold / Baltic sea conditions
- Controlled Tropical or Dry desert heat
- Facility accessible to all EU companies
- Projects with large industrial companies, but also supporting SME's and start-ups in their test needs to proof the robustness and reliability of their products
- Mainly products that are made for export markets

Taking away innovation thresholds: access to unique lab's

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Azerbaijan plans first Caspian offshore wind farm at 198MW



The flag of Azerbaijan in Baku

Salvatore Freni Jr/Flickr

Gulf of Thailand Could Host 7GW of Offshore Wind Power



Researchers from Thailand and Canada have published a paper on offshore wind potential in Thailand.

The paper presents offshore wind resource maps of the Gulf of Thailand. The offshore wind resource maps are validated using measured wind speeds obtained from 28 meteorological towers installed along the coast of the Gulf of Thailand.

The study shows that the Bay of Bangkok has a technical power potential of 3000 MW, which could generate an annual energy production

estimated at 6 TWh/year. The whole Gulf of Thailand holds a potential of 7000 MW that could generate 15 TWh/year.

The study has been coauthored by Jompob Waewsak from Research Center in Energy and Environment of Thaksin University in Thailand, and Mathieu Landryb and Yves Gagnon from Université de Moncton in Canada.

FINLAND

Offshore project designed to withstand Arctic conditions

29 February 2016 by Gerard O'Dwyer · [Be the first to comment](#)

FINLAND: Much is at stake for Finland's first commercial offshore wind farm, the €120-million 40MW Taikoluoto project in the Gulf of Bothnia, in the north of the Baltic Sea, west of Finland. Scheduled for commissioning in the third quarter of 2017, the project will be custom-designed and built to withstand the local icy conditions.



Frozen... The 2.3MW pilot turbine (right) is sited off Finland, testing the arctic weather conditions on the turbine and steel caisson foundations (left) ahead of installing the country's first commercial offshore project (top)

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Indonesia Sets Out Marine Renewables Plans



Indonesian Energy and Mineral Resources Minister Sudirman Said has revealed the country's plans to pursue marine energy development as a central part of the government's marine centered development policy, Jakarta Post reported.

"[The use of] waves and currents to generate power will be part of our effort to encourage the

use of renewable energy. Marine natural resources will be the basis of future development," Sudirman said.

Currently, a study is being carried out and the ministry said that it would likely launch a marine current power pilot project this year.

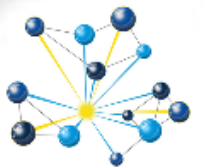
Indonesian government has set a target of 23% of renewables in the country's energy mix by 2025 and the Energy and Mineral Resources Ministry is trying to use the vast marine potential to help reaching the target.

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Clustering the clusters in the EU - Vanguard Initiative ADMA “Energy Applications in Harsh Environments”

- Vanguard Initiative: Regional Smart Specialization - 5 pilots ; goal is to bring together regions / clusters
- Energy pilot-project: ° 2014 / 12 regions led by Scotland and Basque Country
- An initiative to promote interregional cooperation in industrial and technology development among European firms making equipment and components in offshore renewables (wind, wave, tidal) and oil & gas
- Methodology : Learn – Connect – Demonstrate – Upscale
- Current Status:
 - Technology Roadmap and Scoping ready
 - Strong interaction regional administrations / clusters / industry / experts
 - 2 successful workshops in Brussels with strong industrial interest
 - Funding for pilot activities = challenge ? Fitting framework?



VANGUARD INITIATIVE
NEW GROWTH THROUGH SMART SPECIALISATION

Conclusions:

- OWI-Lab functioning as a bridge between industry and strong research content: governance ensures
 1. Awareness of ongoing academic research works
 2. Understanding of industry challenges that matter
 3. Single points of contacts (networking)
 4. Matchmaking - 'connecting the dots'
 5. Knowledge sharing
- Data is essential for the research community in order to test, validate and demonstrate new technologies that could contribute to reducing the LCOE
- Jungle of NDA's is blocking innovations ; not much sharing of data internationally
- OWI-Lab approach: industry driven R&D - strong partnership with academics and industrial actors across the offshore wind value chain
- Essential partnerships with 'operators': win-win
- Difficult to get funding for EU-collaborations

Contact person & more information

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Knowledge sharing – LinkedIn Group:
Offshore Wind Infrastructure
Application Lab (OWI-Lab)



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