# Floating Offshore
## Erfahrungen aus der Sicht eines Ingenieurbüros

Potsdam, 11/11/2021


Presented by

Jörg Zeumer
(RECASE)

Project example of

SCDnezzy
(aerodyn engineering)

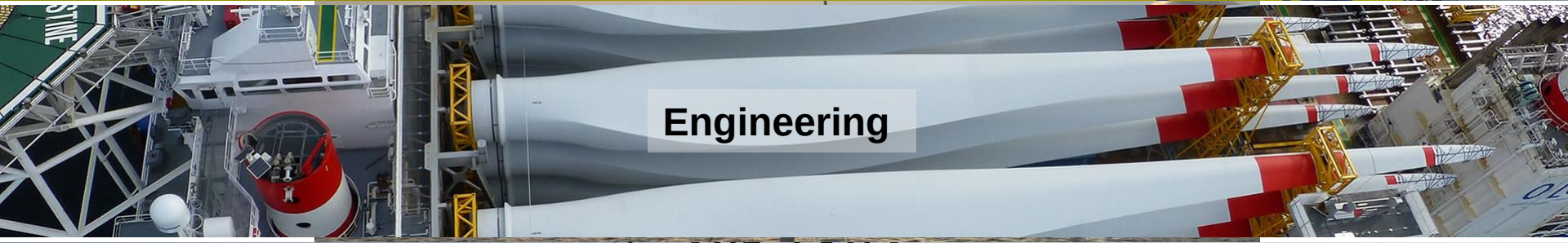
# Content – Floating Offshore (FO)

- Company Portrait **RE**CASE
- FO Wind Global outlook
- aerodyn´s Projects

# Content – Floating Offshore

- Company Portrait RECASE
  - Wind Energy
  - Energy Concepts
  - Holistic Approach
- FO Wind Global outlook
- aerodyn´s Projects


Consulting


Engineering


Project Management

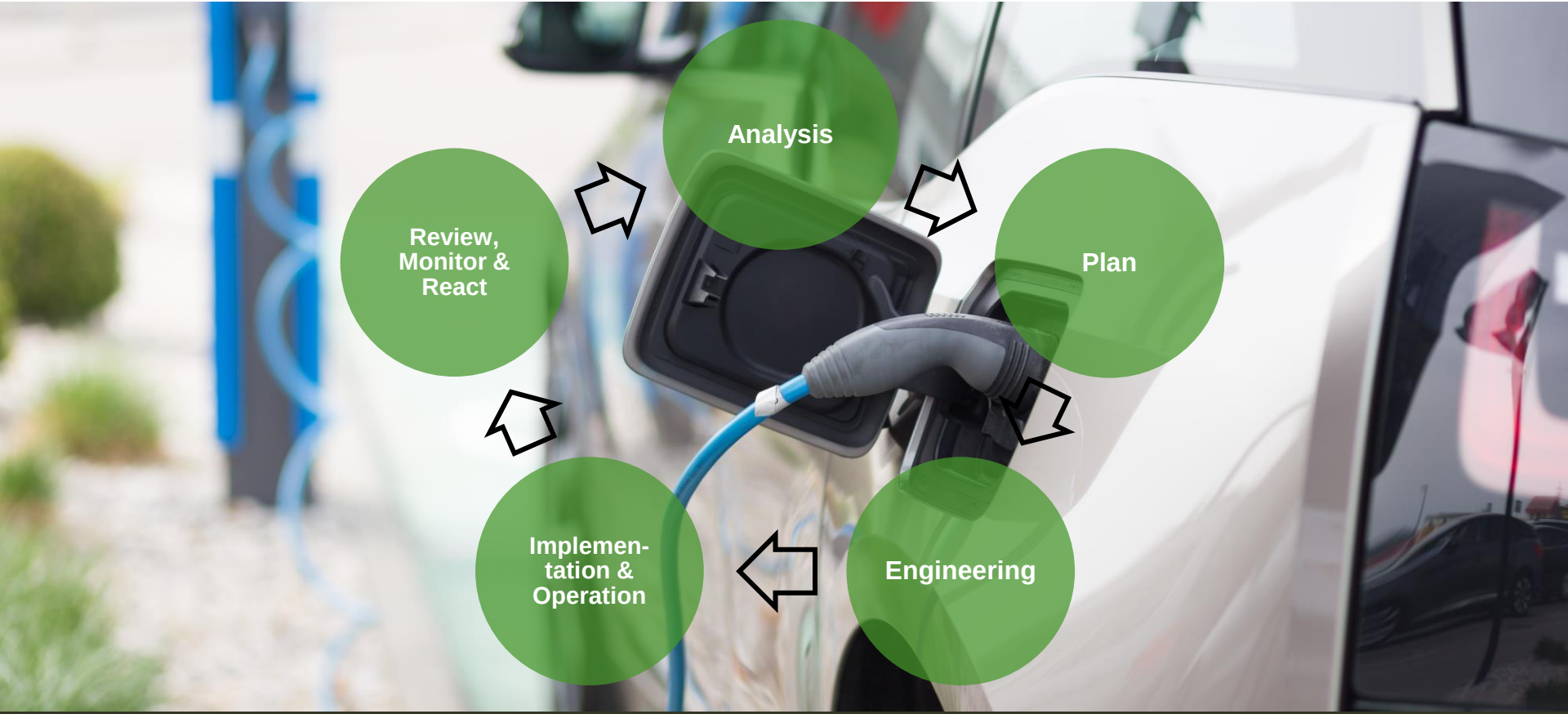
**Electromobility**

**Self Supply**

watt_2.0
Starke Leistung. Starke Region.

**Sector Coupling**

# Holistic Approach

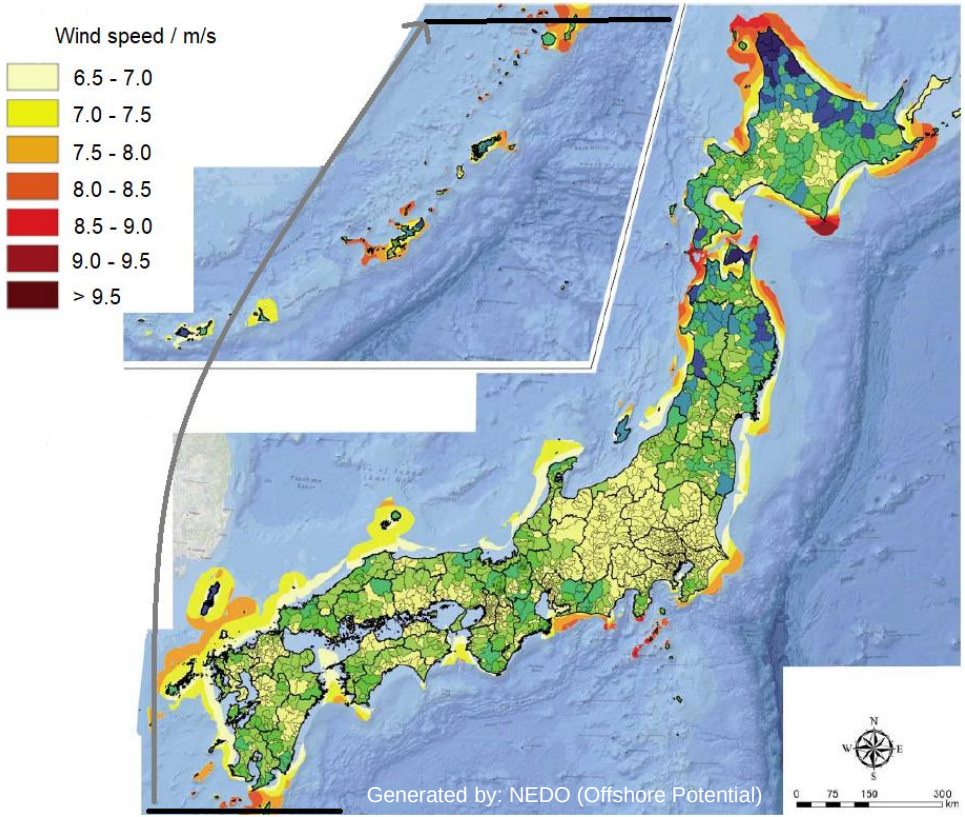


| Nr. | Beginn | Ende | Titel | Referent | Unternehmen |
|---|---|---|---|---|---|
| **1** | 9.30 | 9.35 | Begrüßung und Einleitung | Marten Seifert | RECASE |
| **2** | 9.35 | 10.00 | Floating Offshore<br>- Erfahrungen aus der Sicht eines Ingenieurbüros – | Jörg Zeumer | RECASE |
| **3** | 10.05 | 10.30 | Sicherheitskonzepte für Eisabfall und Eisabwurf von Windenergieanlagen - Von der Planung bis zur Umsetzung – | Sören Hunwardsen | RECASE |
| **4** | 10.35 | 11.00 | Weiterbetrieb 20+<br>- Möglichkeiten der Vorabschätzungen – | Tobias Kanter | RECASE |
| **5** | 11.05 | 11.30 | BNK kompatibles Befeuerungssystem OLS2000 | Jonny Hildebrand, Claas Lemmermann | Lanthan/RECASE |
| **6** | 11.35 | 12.00 | Automatisierung in der Windparkplanung | Timo Siebels | European Energy Hamburg |
| **7** | 11.55 | 12.20 | Ein globales Produkt für nationale Märkte? Praxisbeispiele wie Marktregeln und lokale Anforderungen sich auf Produktentwicklung auswirken | Henning von Barsewisch | Grüntreiber |
| **8** | 12.20 | 12.25 | Abschlussdiskussion und Schlusswort | Marten Seifert | RECASE |

# Content – Floating Offshore

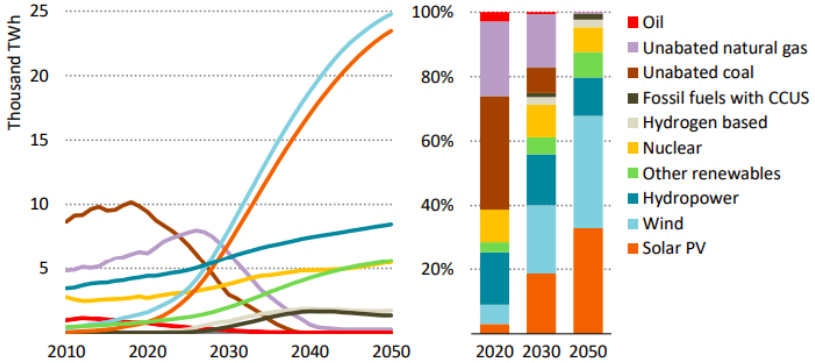
- Company Portrait **RE**CASE
- FO Wind Global outlook
  - Wind Potential e.g. Japan
  - Current Markets
  - Foundation Types
- aerodyn´s Projects

# *Global outlook:* Wind Potential e.g Japan




Wind Power Offshore Potential:
(Ministry of the Environment, Japan, 2009)

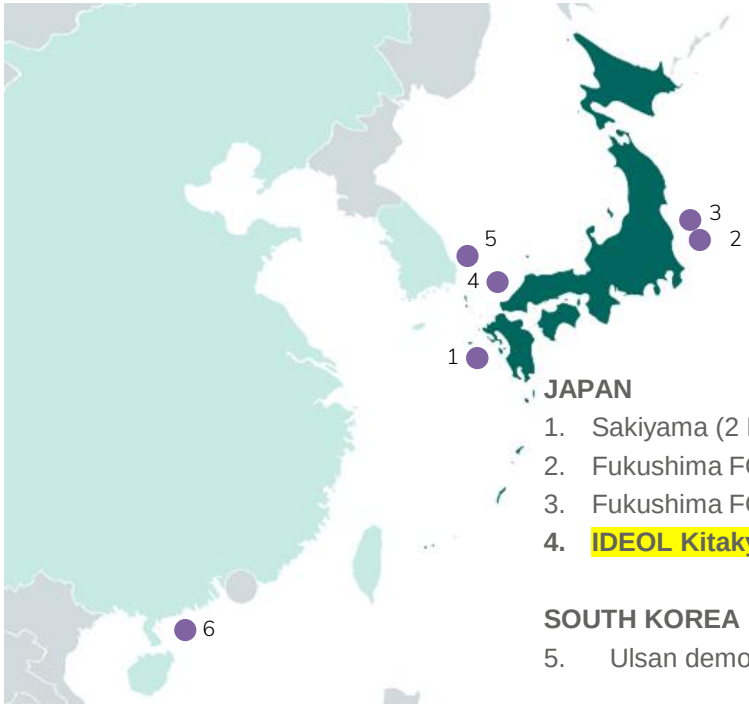
61 to 1610 GW






"Offshore wind deployment is poised to accelerate in the near term. The current focus is on fixed-bottom installations, but floating offshore wind starts to make a major contribution from around 2030."
IEA 2021

# *Global outlook:* Current Markets (Asia)




mapchart.net

● *Installed projects*

Lead markets (dark green)
Follower markets (light green)

**JAPAN**

1. Sakiyama (2 MW)
2. Fukushima FORWARD 1 (2 MW) decommissioning
3. Fukushima FORWARD 2 (12 MW) decommissioning
4. **IDEOL Kitakyushu demo (3 MW)**

**SOUTH KOREA**

5. Ulsan demo (0.75 MW)

**CHINA**

6. MingYang MYSE5.5 MW (at Yangxi Shapa III, 400 MW)

**Additional developments…**

**JAPAN**

-Goto City project (22 MW) in pipeline
-Clear government support for floating

**SOUTH KOREA**

-Ulsan 5 MW demo in planning
-Donghae 1 (200 MW) approved
-Multiple large-scale projects in pipeline with major energy players

**CHINA**

-Demonstrations in pipeline, but focus is on bottom-fixed

**TAIWAN**

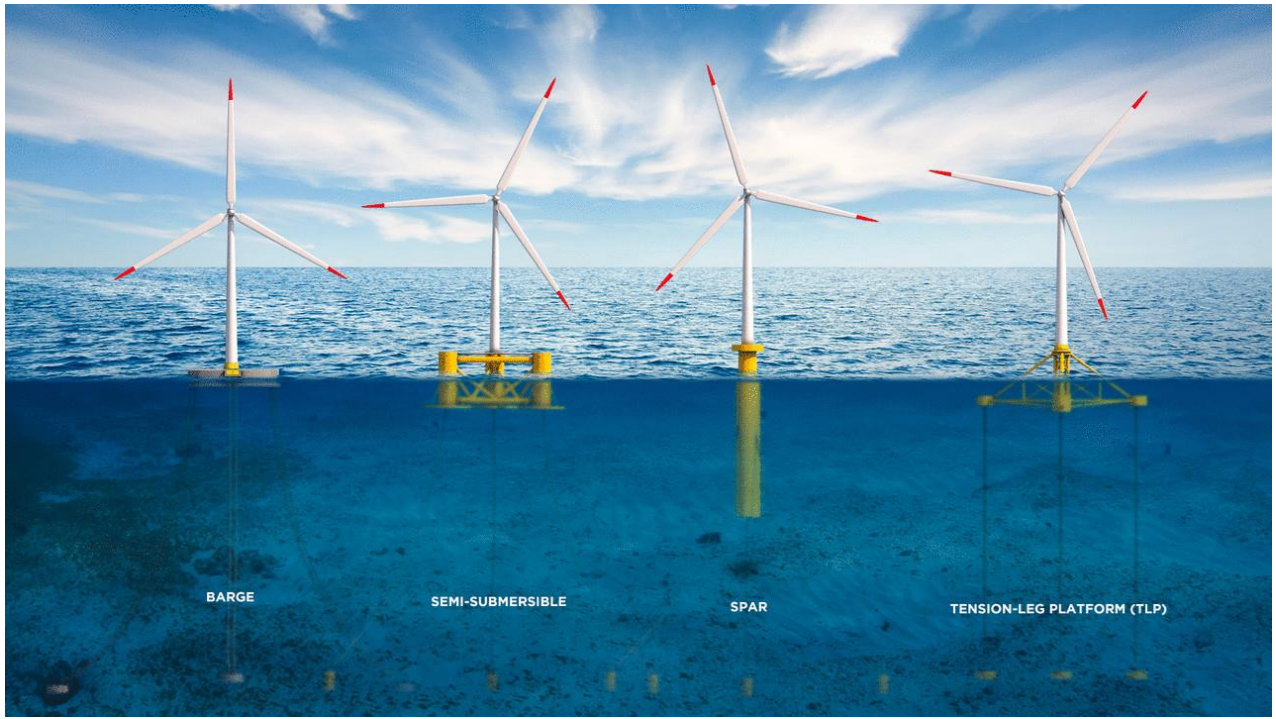
-Some planning for large-scale projects

# Foundation Types

-Floater made of steel and/or concrete

-Catenary or taut mooring configuration with steel chains or synthetic fibres

-Different anchor types




Society for Underwater Technology

# Content – Offshore

- Company Portrait RECASE
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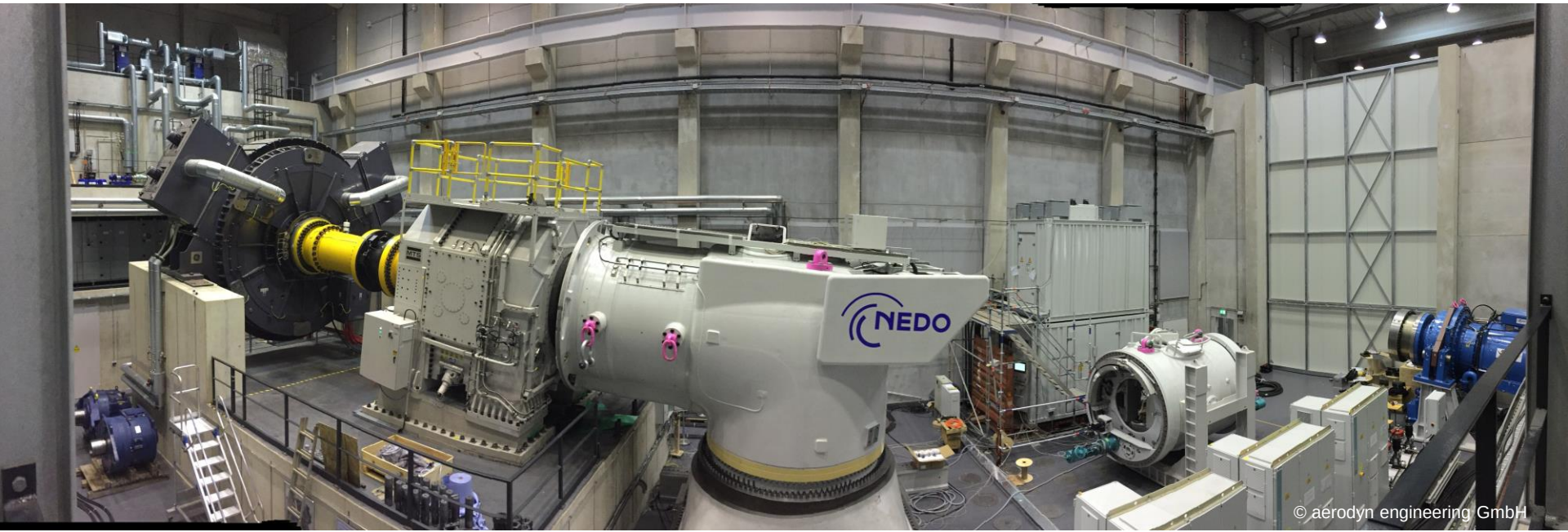
  - SCD3MW
  - Models SCDnezzy (Japan)
  - Models SCDnezzy² (Germany)

Model SCD3MW

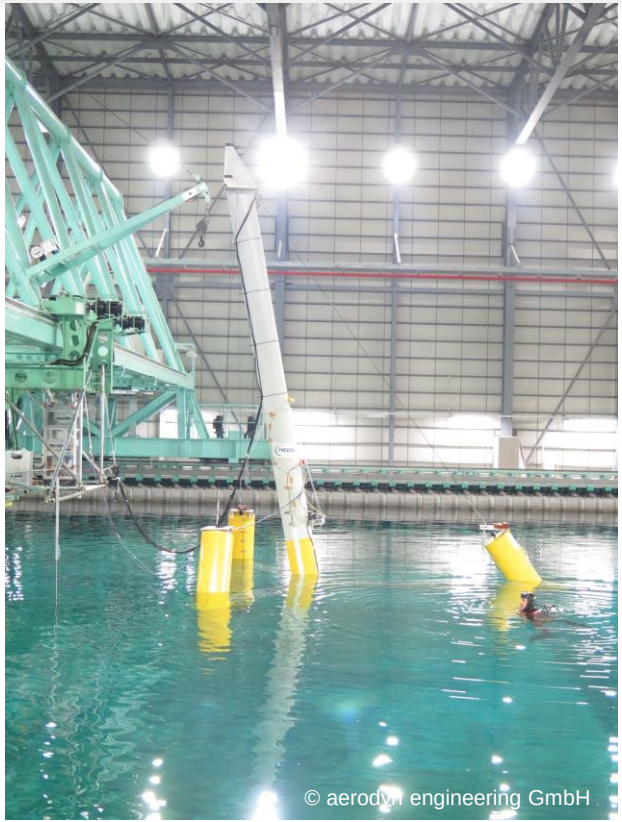
Test Onshore 07/2018
Installation 08/2018
Test Offshore 09/2018

Source: https://www.windbusinessintelligence.com/news/nedos-new-floating-2-bladed-wind-turbine-completed-kitakyushu-port

# SCD3MW Test Bench

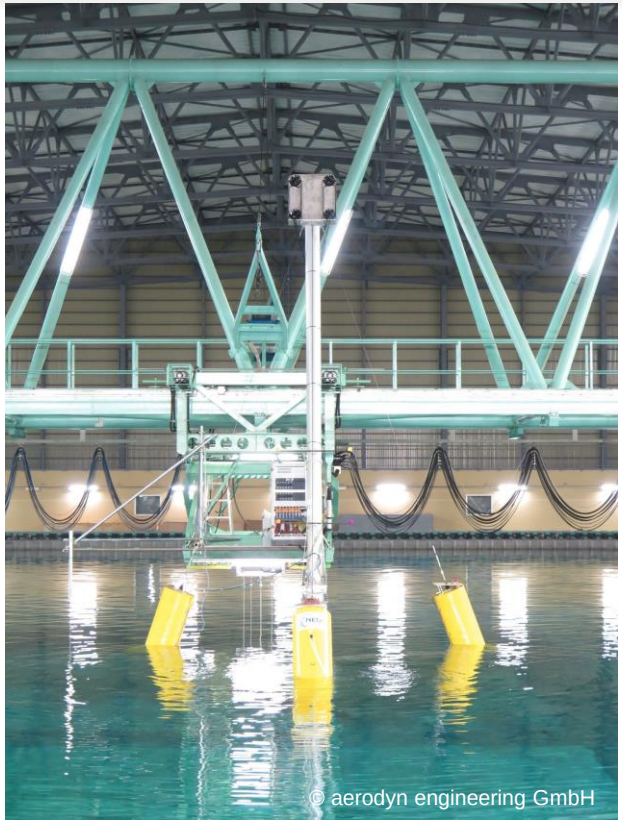


# *Aerodyn ´s Projects:* **Models SCDnezzy (Japan)**




Model SCDnezzy 1:15

Scaled Test



Model SCDnezzy
1:10

Start 08/2017
Test Onshore 12/2017
Installation 01/2018
Test Offshore 02/2018
Deinstallation 08/2019

Challenges:
- time schedule
- no grid connection

# Models SCDnezzy² (Germany)

Model SCDnezzy²
1:10

Start 11/2019

Test bench 02-03/2019

Lake tests 04-08/2019
(3 blade / 2 blade)

Test Baltic sea 09-10/19

Deinstallation 10/2020

Challenges:

- time schedule
- Integrated measure-ment system

# *Aerodyn´s Projects:* **Models SCDnezzy + nezzy²**

Model SCDnezzy


Model SCDnezzy²


nezz2
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