

# Offshore Floating Wind

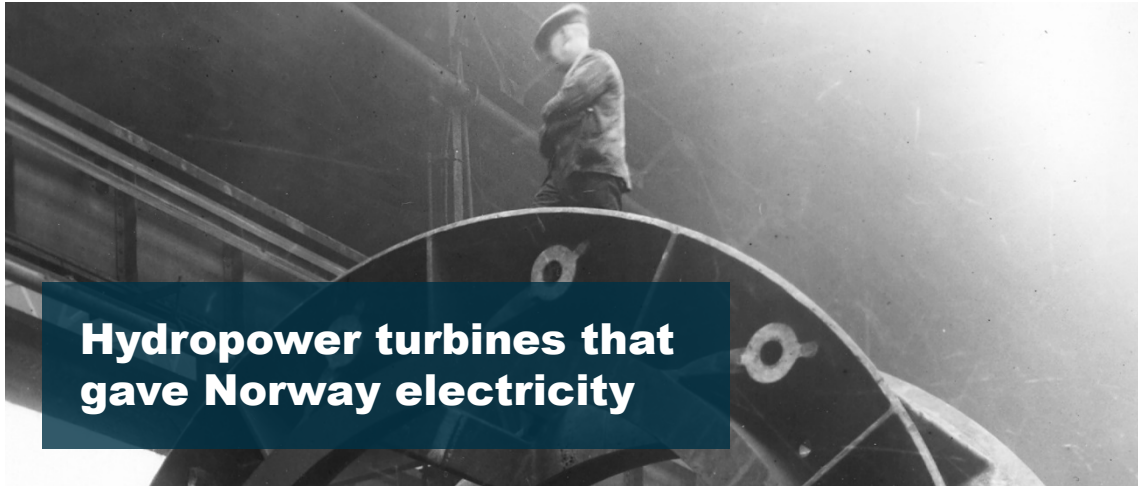
ABG Energy Conference, London (27 Feb 2020)

Astrid S. Onsum, head of offshore wind,  
Aker Solutions





# Nearly 200 Years of Change



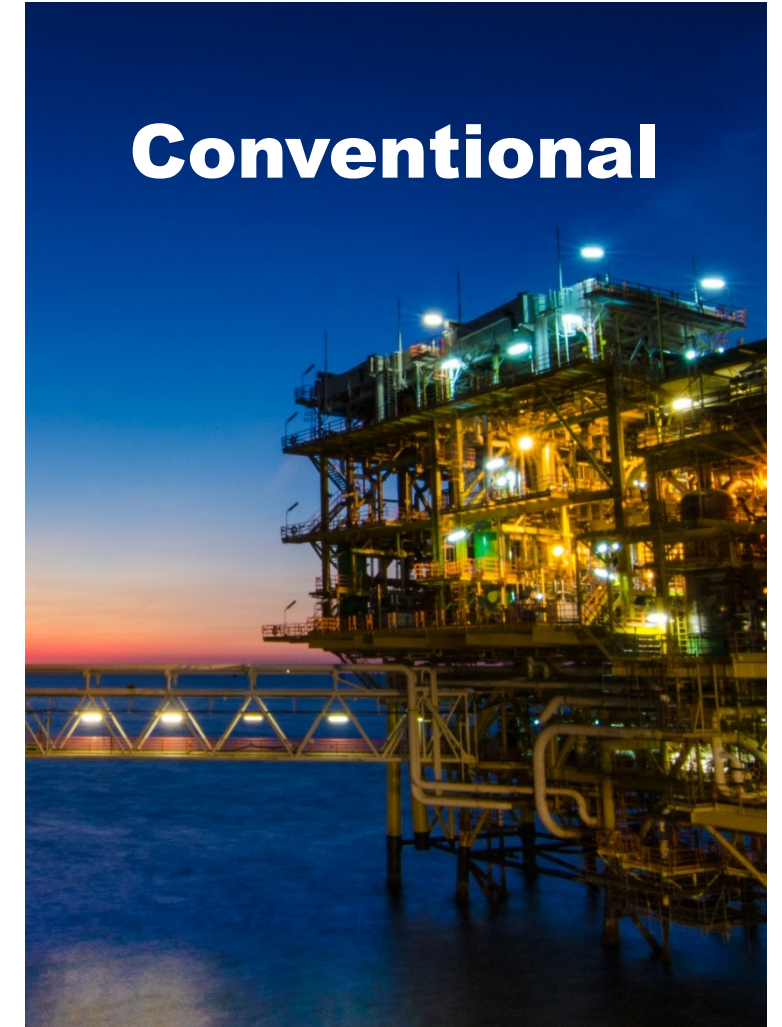
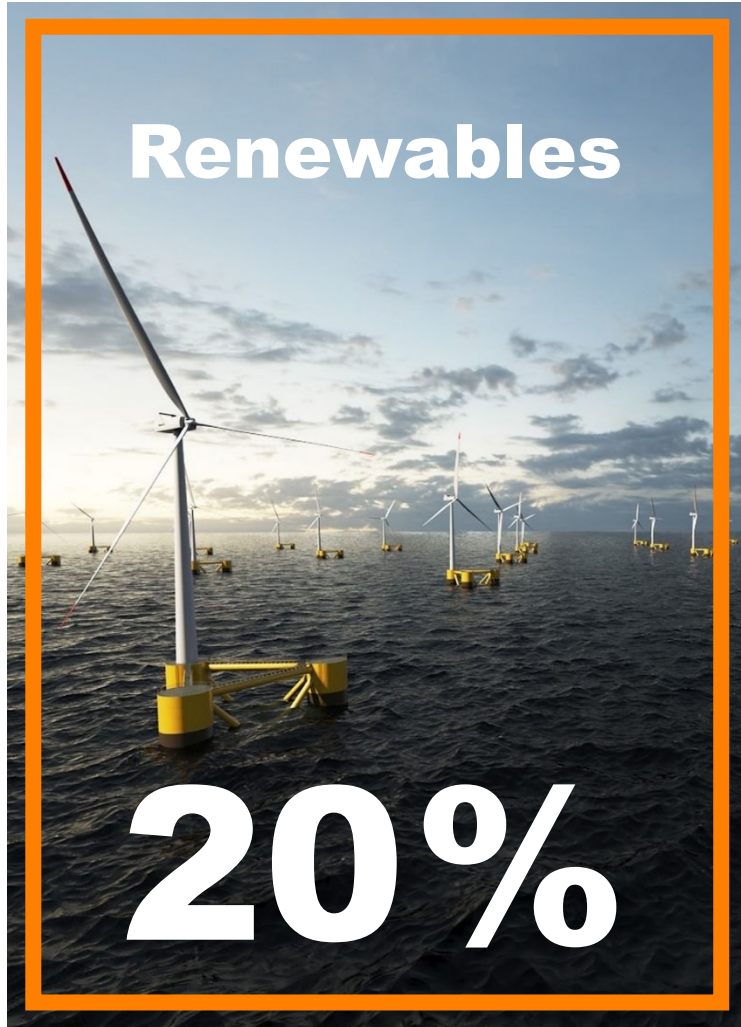


# Fast and Interconnected Change



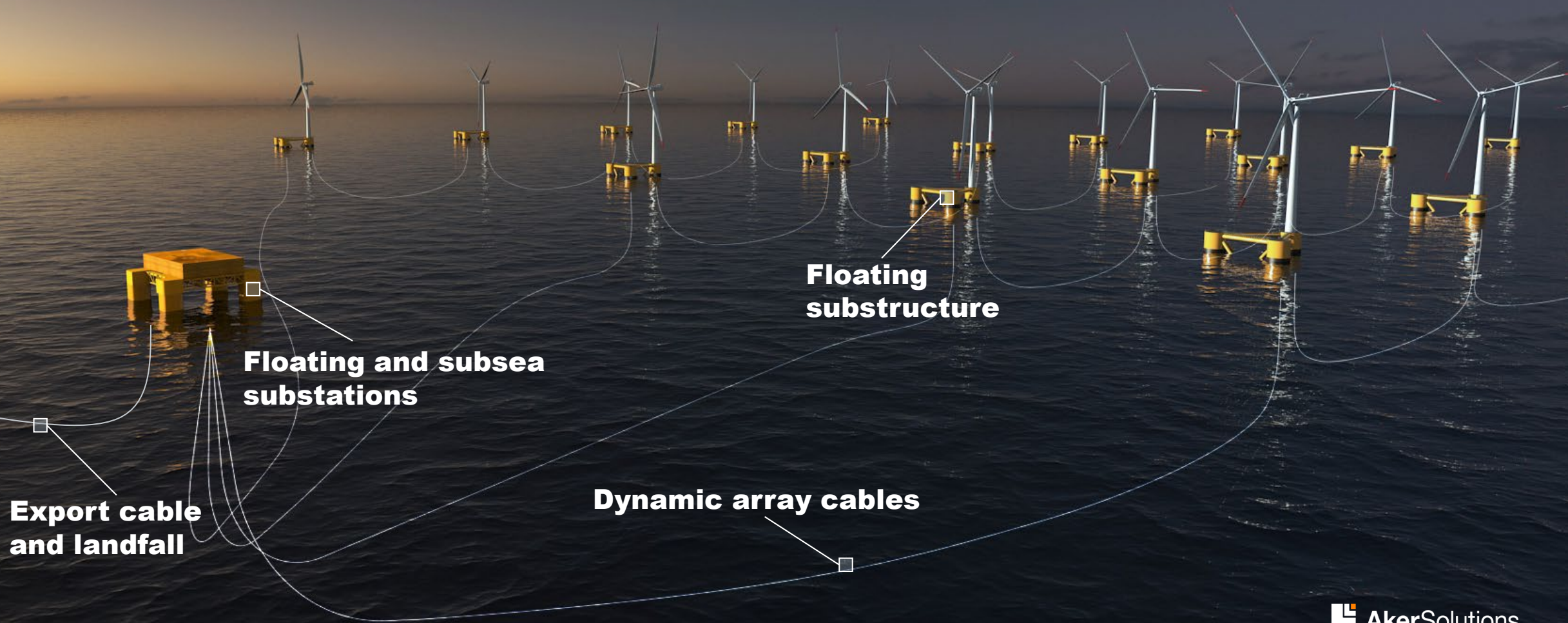


# Aker Solutions – Leading a Sustainable Energy Future





# Aker Solutions will lead the **industrialization** of offshore floating wind



# Principle Power Inc.

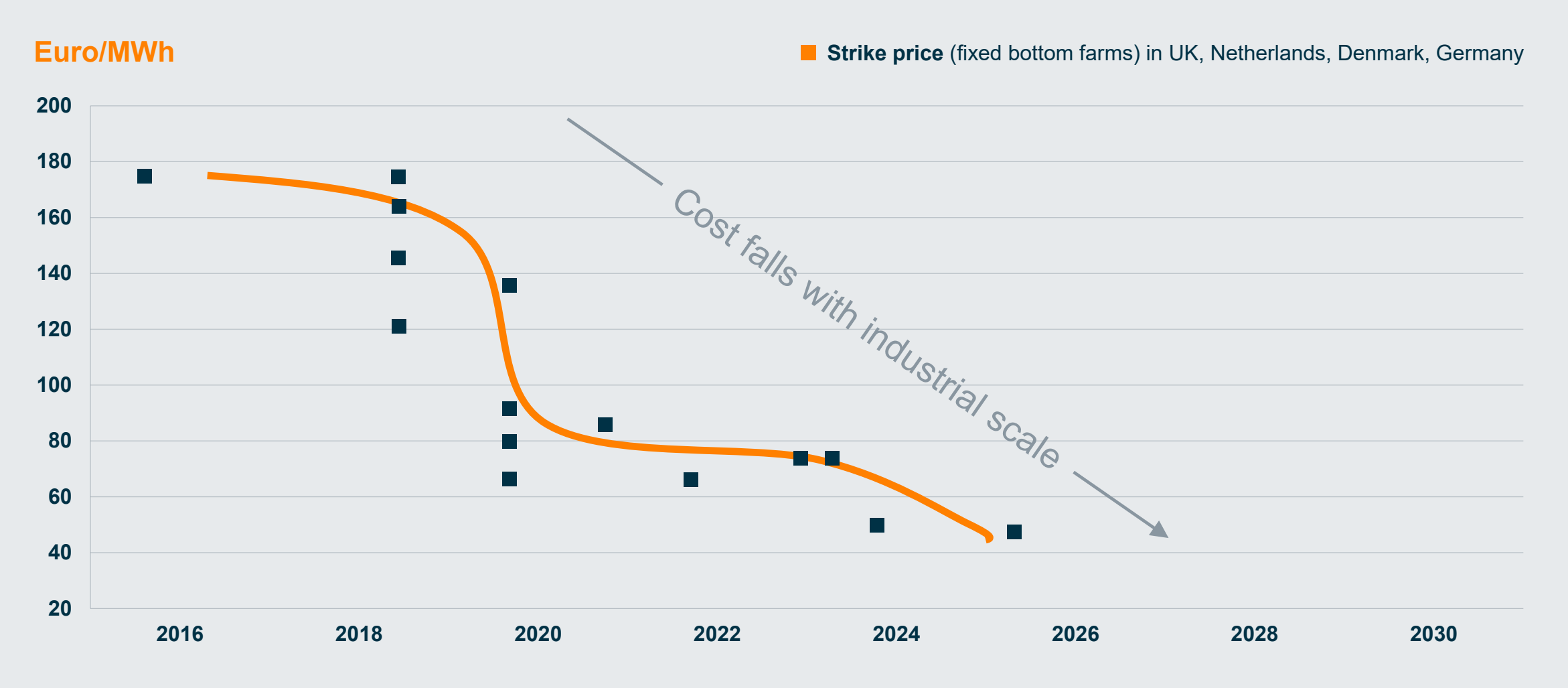
- Principle Power was **founded in 2007** and is headquartered in California, USA
- **Technology and service provider** to the offshore deep water wind energy market
- Aker Solutions' ownership is **25 percent**
  - Co-owners include EDP Renewables and Repsol

## The WindFloat

- A **leading** and proven floating offshore wind concept
- **One of only two field proven** in the world
- Pilot from 2011-2016
- **World's first 8.4 MW** floating turbine installed offshore Portugal 2019
- **100 MW** in the water by 2022



# Falling Cost of Offshore Wind Projects





# Drivers for Deepwater Wind Power

- 80% of offshore wind resources found in water depths of more than 60 meters
- Deep water technology now available
- Not In My Back Yard (NIMBY)
- More wind energy further from shore

## Capacity Factor by Wind Concept

**~30%**

Onshore wind

**~40%**

Offshore bottom-fixed

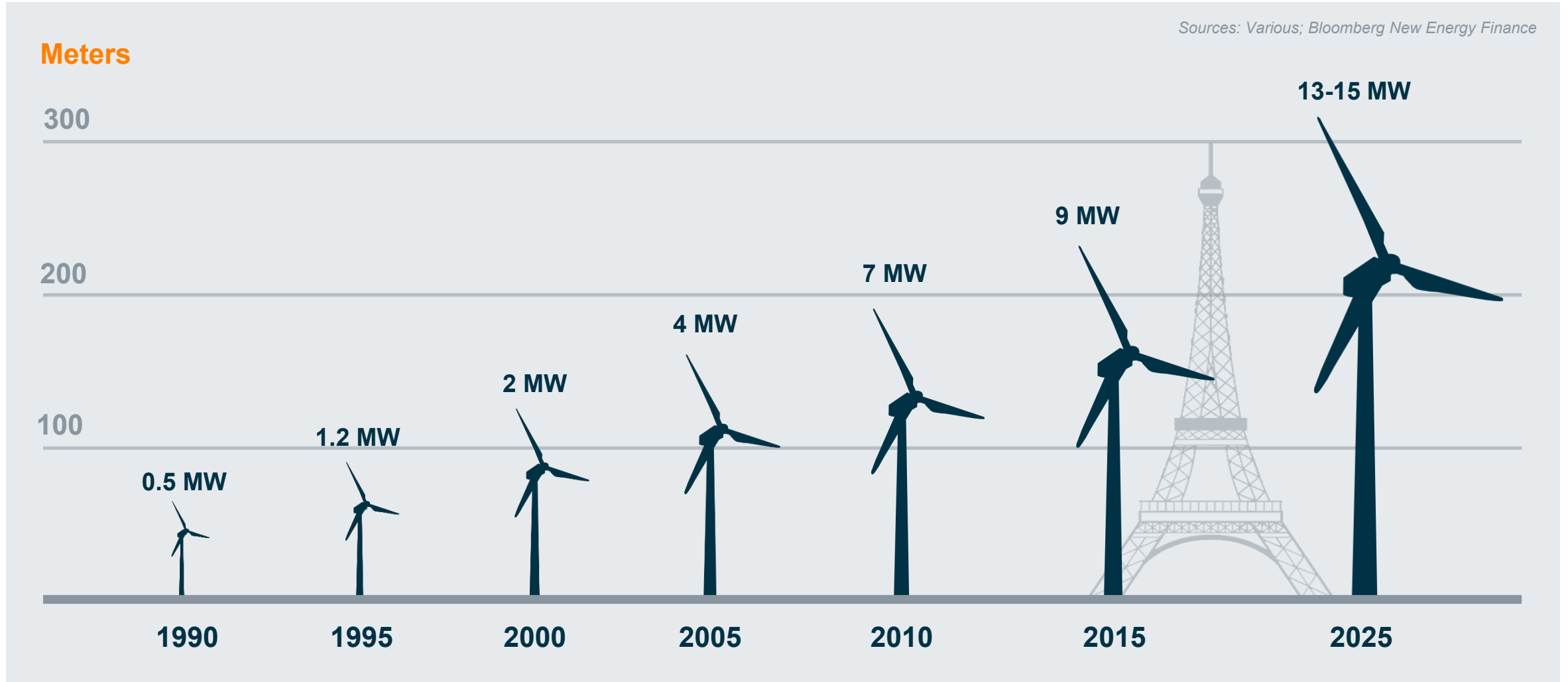
**~50%**

Offshore floating

Sources: EIC Global Offshore Wind report 2019; Norwep, internal analysis



# Economy of Scale is Increasing the Turbine Size





**Global Market**

**Americas**

**Europe**

**Asia Pacific**

-  Aker Solutions Presence
-  Active Markets



A world map with a dark blue background and white outlines of continents. Five orange location pins are placed on the map, each corresponding to a project. The pins are located in California, Scotland, Portugal, France, and South Korea. Each pin is accompanied by a grey rectangular box containing the project name and location details.

**WindFloat Kincardine**

Scotland | 50 MW

**Redwood Coast**

California | 150 MW

**Golf de Lion**

France | 30 MW

**WindFloat Atlantic**

Portugal | 25 MW

**KFWind**

South Korea | 500 MW

**This is Happening. Right Now.**

# Collaboration is Key to Success

## Redwood Coast Offshore Wind Project

Local Community | Fisheries | Port | Unions



**HUMBOLDT STATE UNIVERSITY**



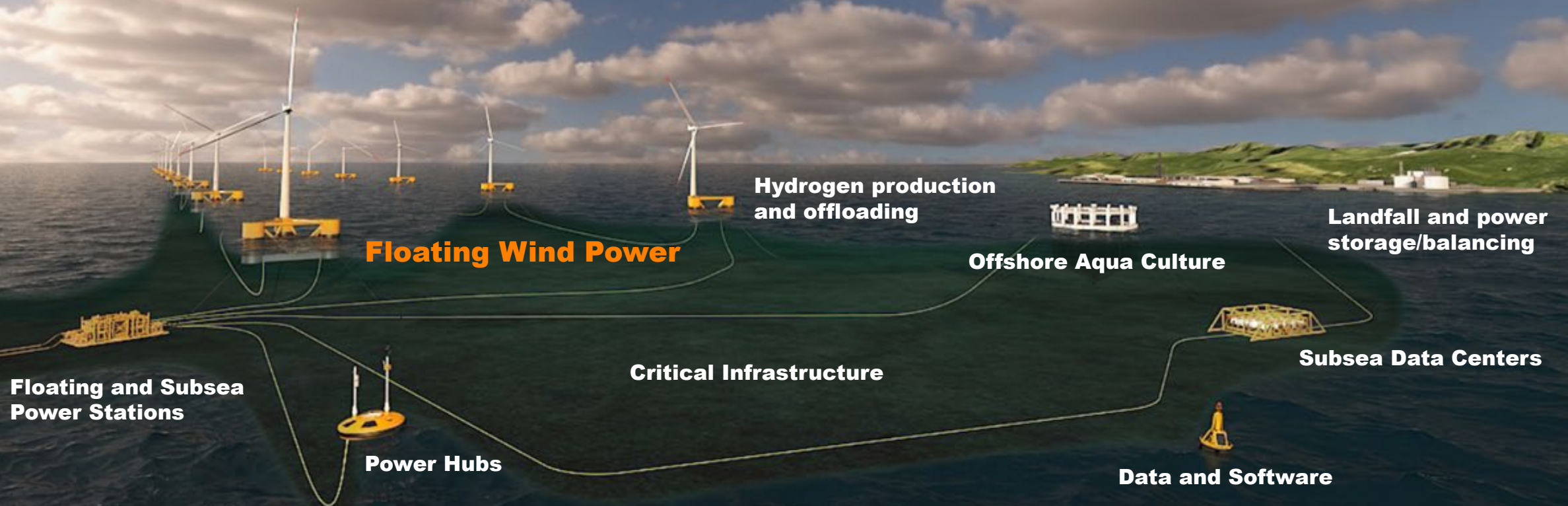


# Ulsan City, South Korea



- **Aker Solutions, EDP Renewables and WindPower Korea** have formed a consortium with the ambition to develop an initial **500 MW** floating wind farm off the coast of Ulsan Metropolitan City in **South Korea**
- The South Korean Government has called for **13 GW** of offshore wind to be installed **by 2030**
  - Target of at least 30 percent renewable energy by 2040
  - 7 GW targeted by Ulsan City

# New Era of Ocean Economy Opportunities





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