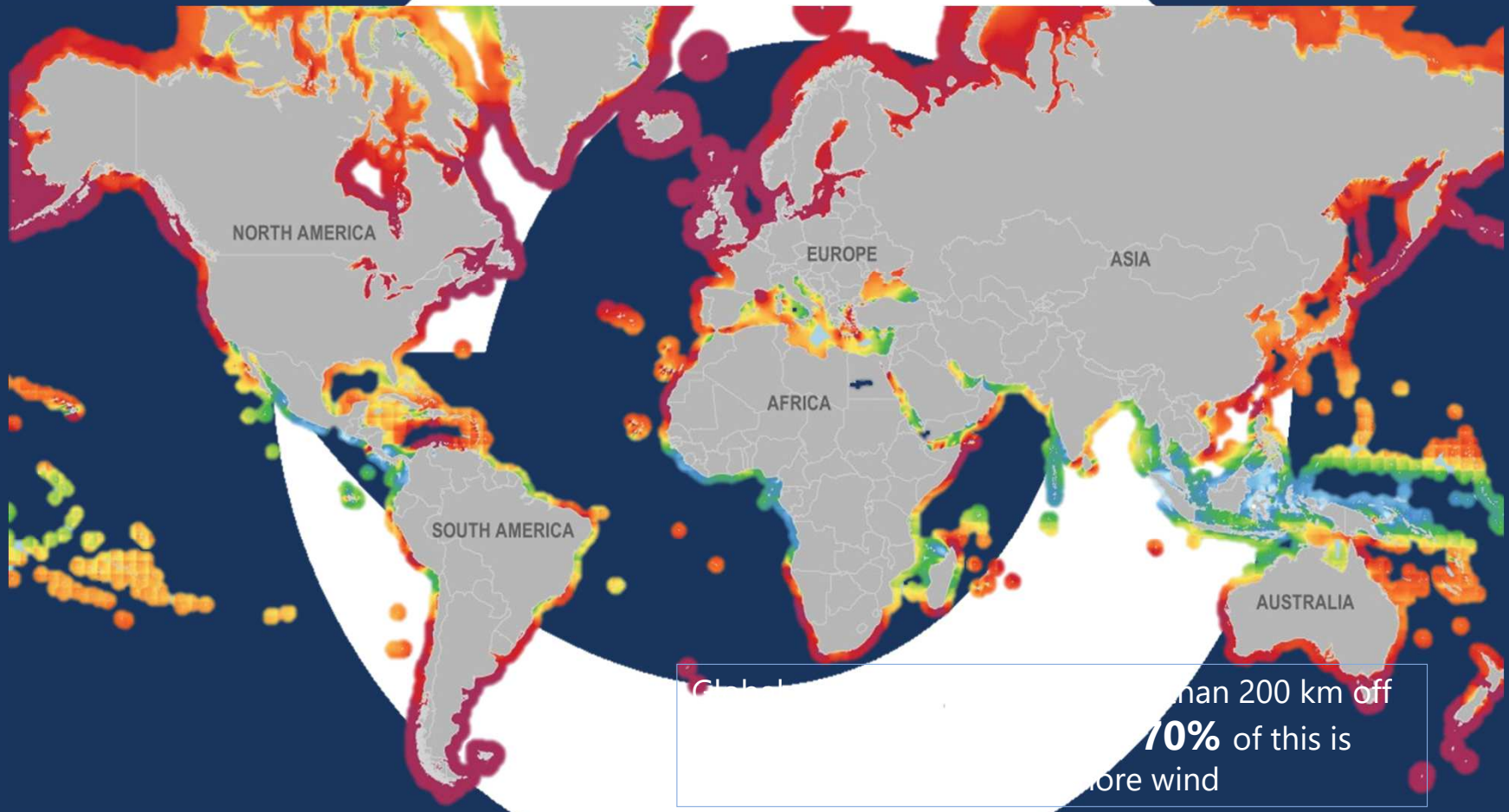
Exploiting the potential of deep-water offshore wind

ICEF 2023

Bjørn Simonsen
CEO

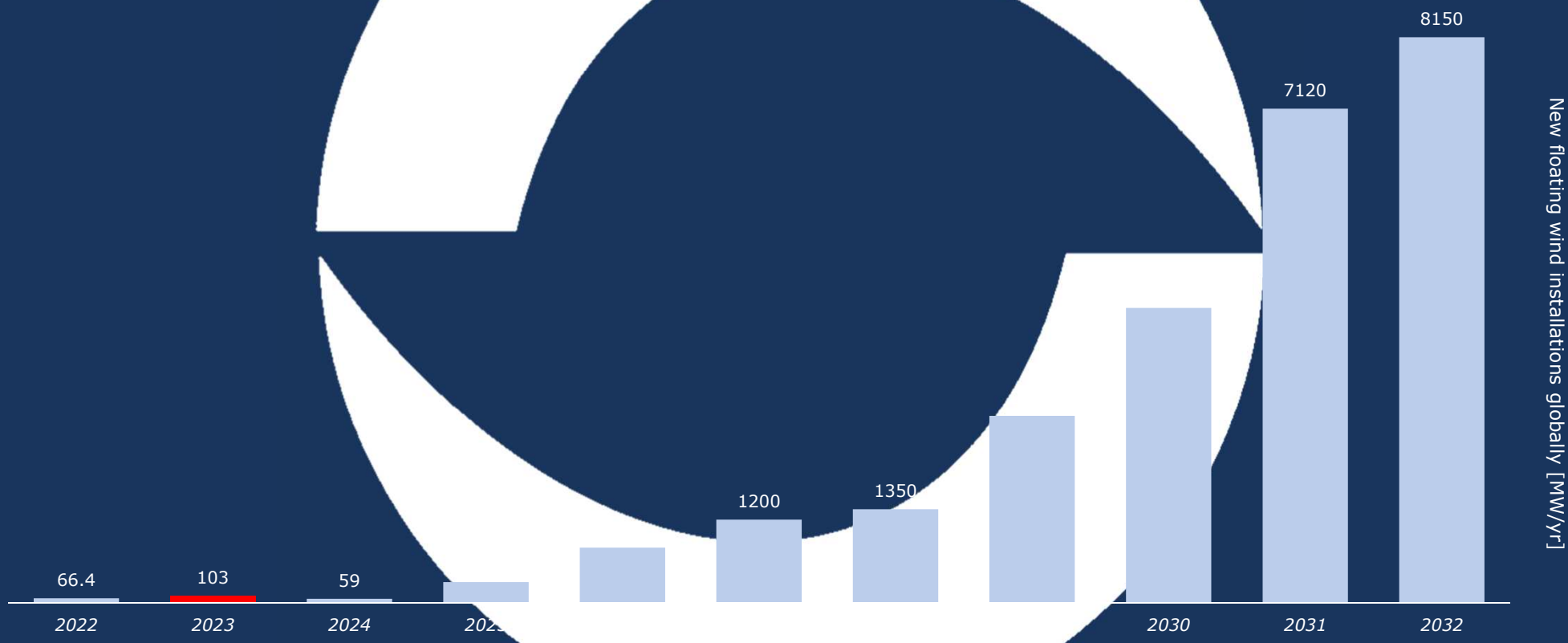
Global offshore wind r… …but in deep oceans



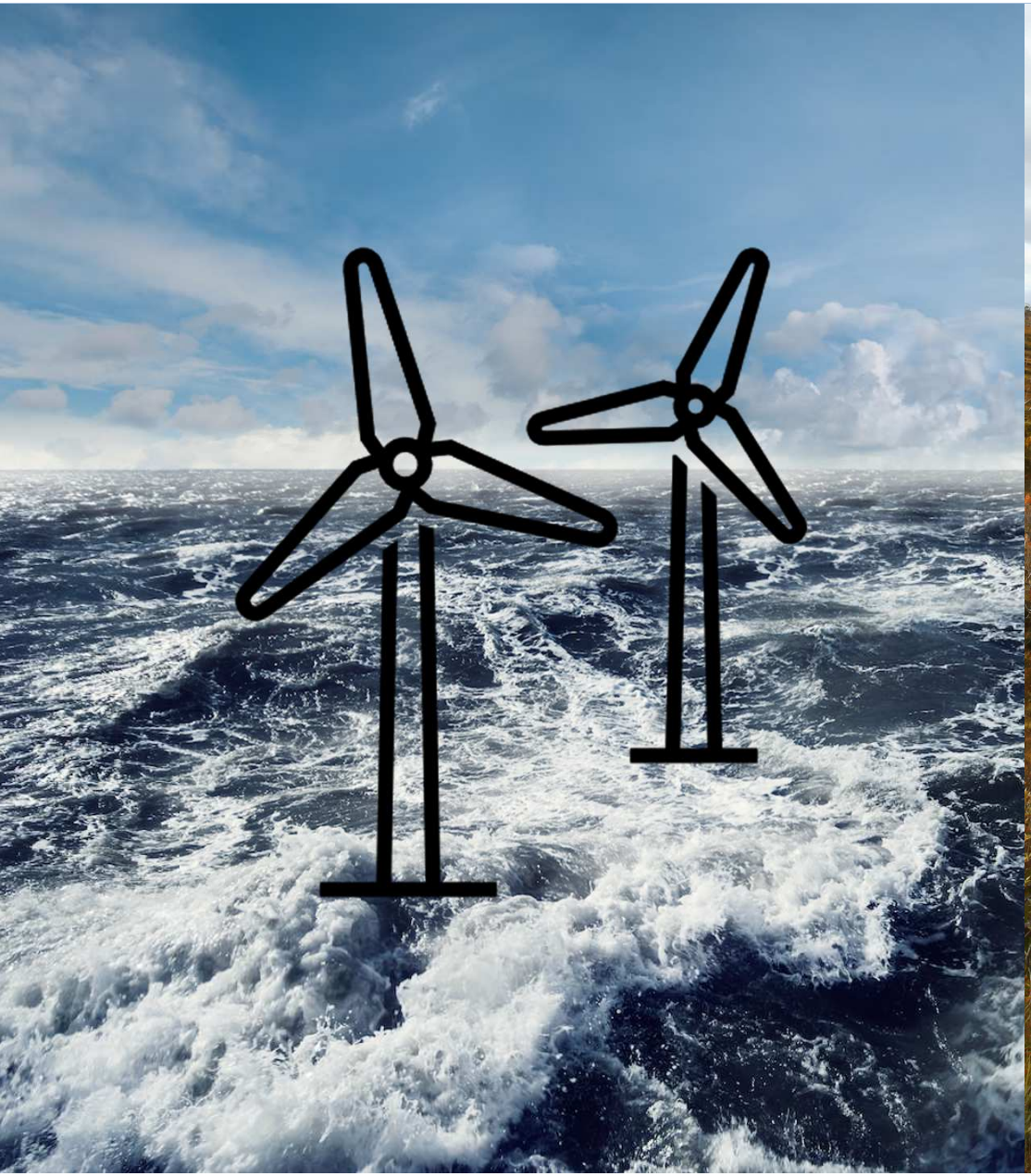
…nan 200 km off
…**70%** of this is
…ore wind

Source: ESMAP/The World Bank – offshore wind technical potential (https://www.esmap.org/esmap_offsh…

Exponential growth in off[illegible]d sector expected the coming decade -



Source: Global Wind Energy Council



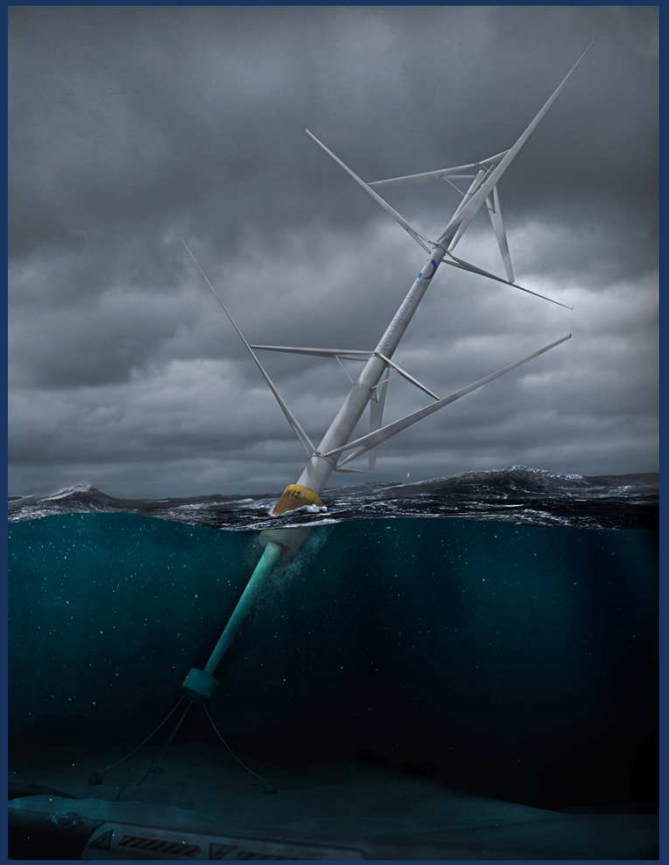

WorldWideWind

100+ variations of floater concepts are being developed - all to replicate land

We need to think differently.

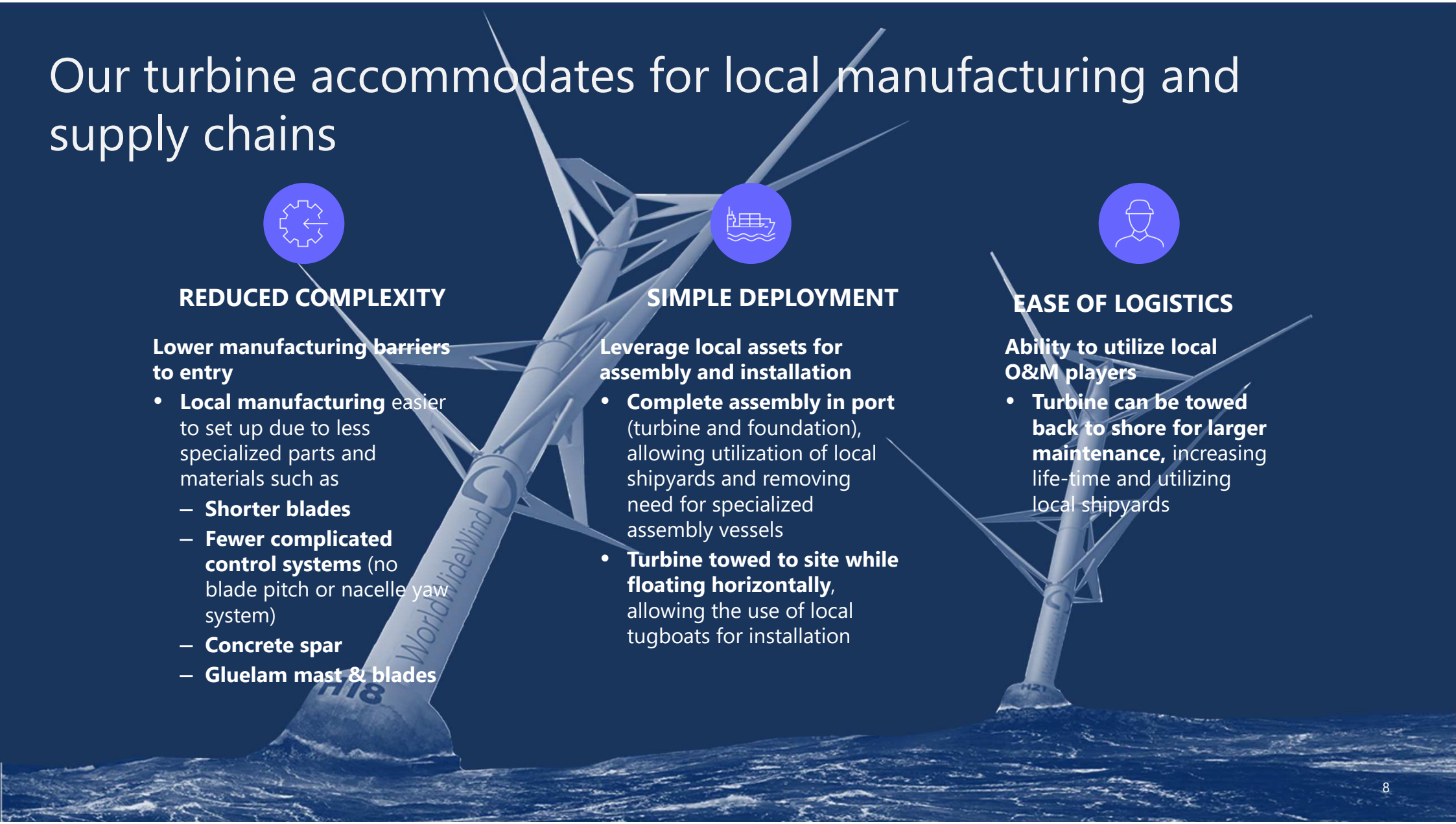
+

=




H21

Our turbine accommodates for local manufacturing and supply chains



REDUCED COMPLEXITY

Lower manufacturing barriers to entry

- **Local manufacturing** easier to set up due to less specialized parts and materials such as
  - **Shorter blades**
  - **Fewer complicated control systems** (no blade pitch or nacelle yaw system)
  - **Concrete spar**
  - **Gluelam mast & blades**

SIMPLE DEPLOYMENT

Leverage local assets for assembly and installation

- **Complete assembly in port** (turbine and foundation), allowing utilization of local shipyards and removing need for specialized assembly vessels
- **Turbine towed to site while floating horizontally**, allowing the use of local tugboats for installation

EASE OF LOGISTICS

Ability to utilize local O&M players

- **Turbine can be towed back to shore for larger maintenance,** increasing life-time and utilizing local shipyards

Some call what we do “floating wind’s Tesla moment”

RECHARGE

Facsimile of WWW feature in RECHARGE Magazine Sept 2022

FLOATING WIND

‘This is floating wind’s Tesla moment’

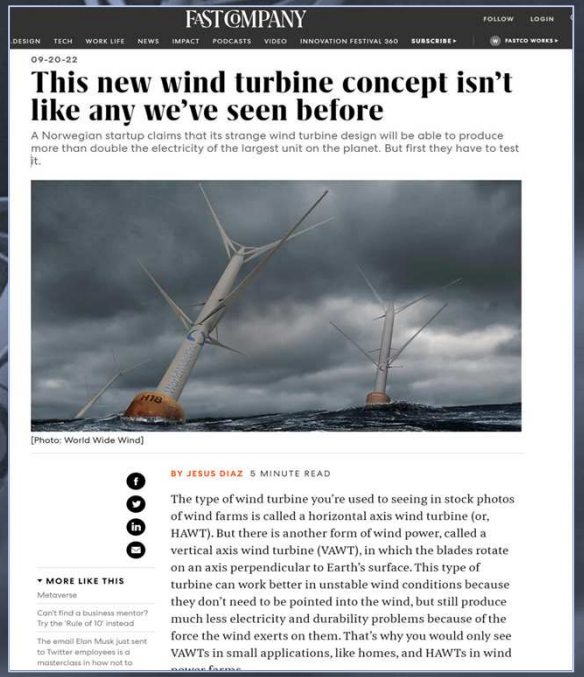
Norwegian start-up World Wide Wind’s innovative design, which features two ‘contra-rotating’ rotors, is foreseen pushing the emerging technology’s levelised cost of energy below $50/MWh, writes **Darius Snieckus**

Floating vertical-axis wind turbines (VAWTs) — unlike the vast majority of industrial models turning today fly blades that are set at angles to the tower rather than upright — have long been heralded by many in the offshore engineering community as key to harnessing the vast, high-velocity wind resource streaming over the world’s deep waters.

VAWTs have clear design advantages over conventional three-bladed versions, including having no gearing or cooling systems and mass-manufacturability, lower-cost and more durable rotors, and generators at water level to add stability and make for easy maintenance and repair access. Yet they have so far failed to crack the market, with only a few models in active development today (*see panel overleaf*).

Norwegian technology developer World Wide Wind (WWW) thinks it has solved the commercial impasse with one word: contra-rotation. The Oslo-based start-up says its eye-catching design, which features two omnidirectional rotors spaced apart on a tower-spar structure all anchored with a novel turret-shaped mooring system to the seafloor, could be a game-changer for the sector, deflecting away “destructive levels of torque and vibration” — and slashing

rechargenews.com



FAST COMPANY

FOLLOW LOGIN

DESIGN TECH WORK LIFE NEWS IMPACT PODCASTS VIDEO INNOVATION FESTIVAL 360 SUBSCRIBE ▸ FASTCO WORKS ▸

09-20-22

This new wind turbine concept isn’t like any we’ve seen before

A Norwegian startup claims that its strange wind turbine design will be able to produce more than double the electricity of the largest unit on the planet. But first they have to test it.

[Photo: World Wide Wind]

BY JESUS DIAZ 5 MINUTE READ

The type of wind turbine you’re used to seeing in stock photos of wind farms is called a horizontal axis wind turbine (or, HAWT). But there is another form of wind power, called a vertical axis wind turbine (VAWT), in which the blades rotate on an axis perpendicular to Earth’s surface. This type of turbine can work better in unstable wind conditions because they don’t need to be pointed into the wind, but still produce much less electricity and durability problems because of the force the wind exerts on them. That’s why you would only see VAWTs in small applications, like homes, and HAWTs in wind power farms.

▾ MORE LIKE THIS

Metaverse

Can’t find a business mentor? Try the ‘Rule of 10’ instead

The email Elon Musk just sent to Twitter employees is a masterclass in how not to


..we call it the most logical way
of harvesting wind off shore.