Ocean Energy Europe

Ocean energy : a growing industry in need of reliable oceanic data

Rémi Gruet, CEO, Ocean Energy Europe

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120 members - Lead Partners:

Ocean Energy

5 Resources – 5 technologies – 5 opportunities

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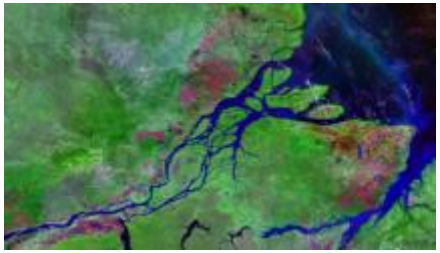
Tidal stream

Ocean Thermal Energy Conversion

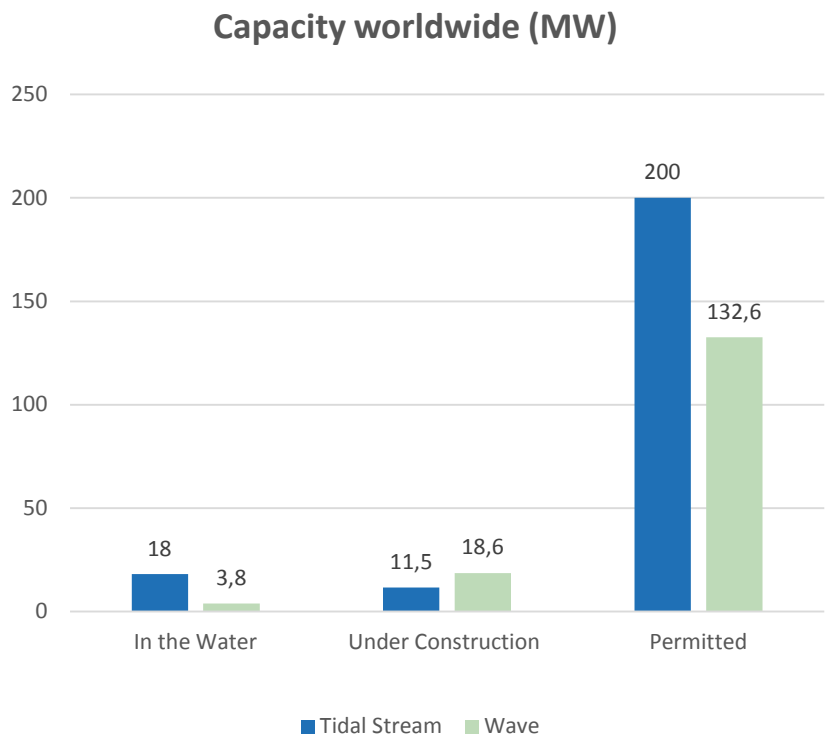


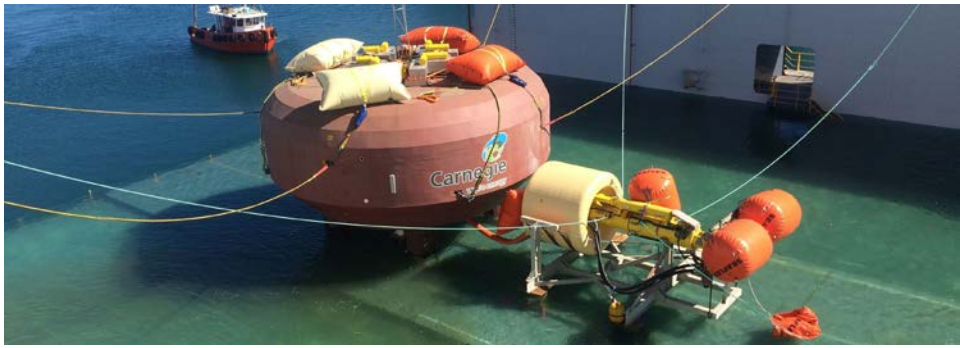
Salinity gradient

Wave

Tidal range

2018 Ocean Energy is setting sail





2050: 10% of EU electricity, 400.000 jobs

2 years of achievements

- First tidal pilot farms producing GWh of clean, predictable electricity to the grid
- First turbine factory in Cherbourg
- First major contracts signed for wave developers

Setting sail, first Tidal arrays connected

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Scotland

- MeyGen at Pentland Firth, 6 MW (4 x 1.5 MW), biggest tidal energy farm to date.

- Nova Innovation in Shetlands, 0.5 MW (5 x 0.1MW)

Netherlands

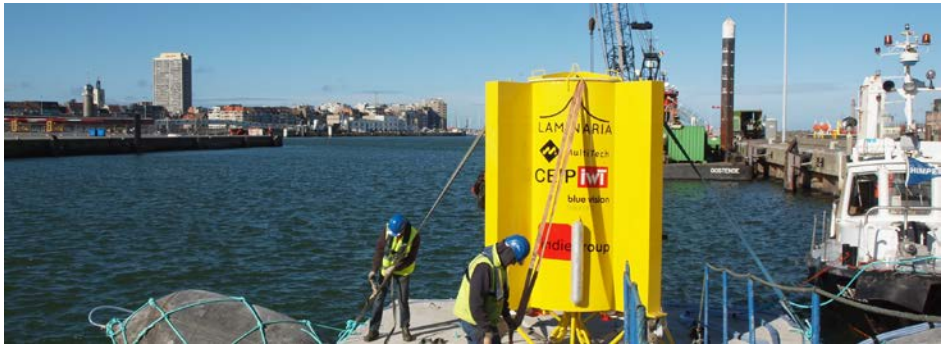
- Tocardo 1.25 MW (Eastern Scheldt dam)

Setting sail, Wave technology progressing

United Kingdom

- Orkney: Wello, 1 MW

- Orkney: Laminaria, 200 kW (2018)



Portugal

- Peniche: AW-Energy, 0.35 MW

Why we need Copernicus ...

Europe's eyes on Earth

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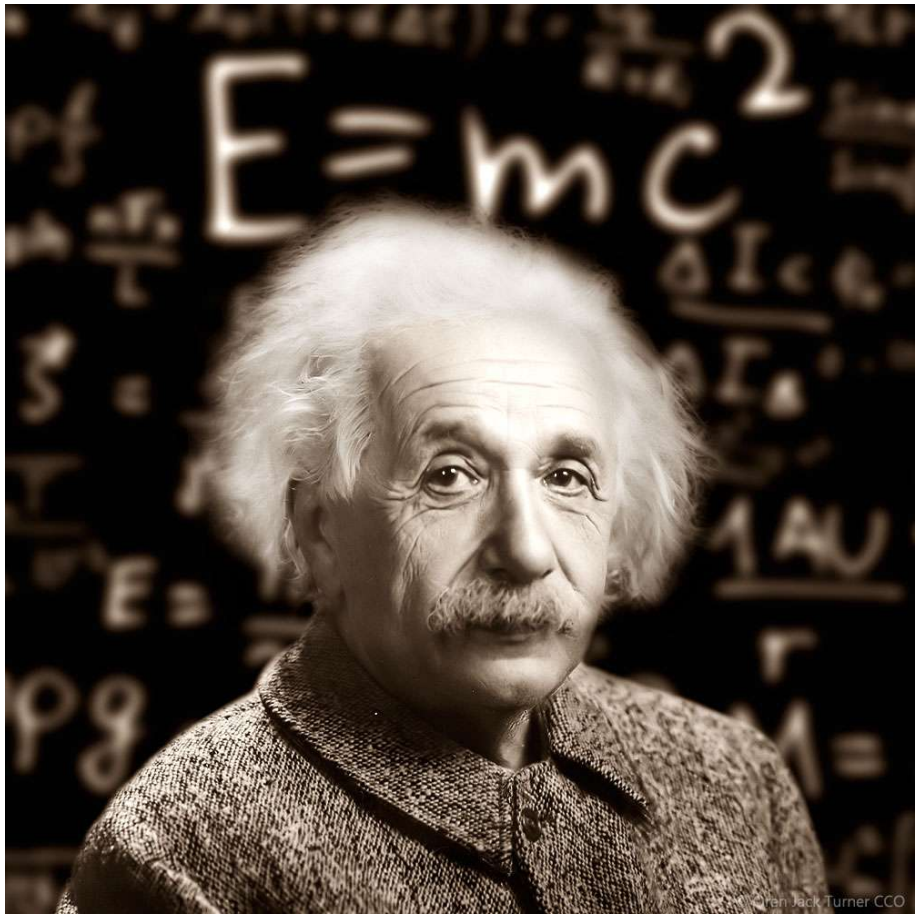


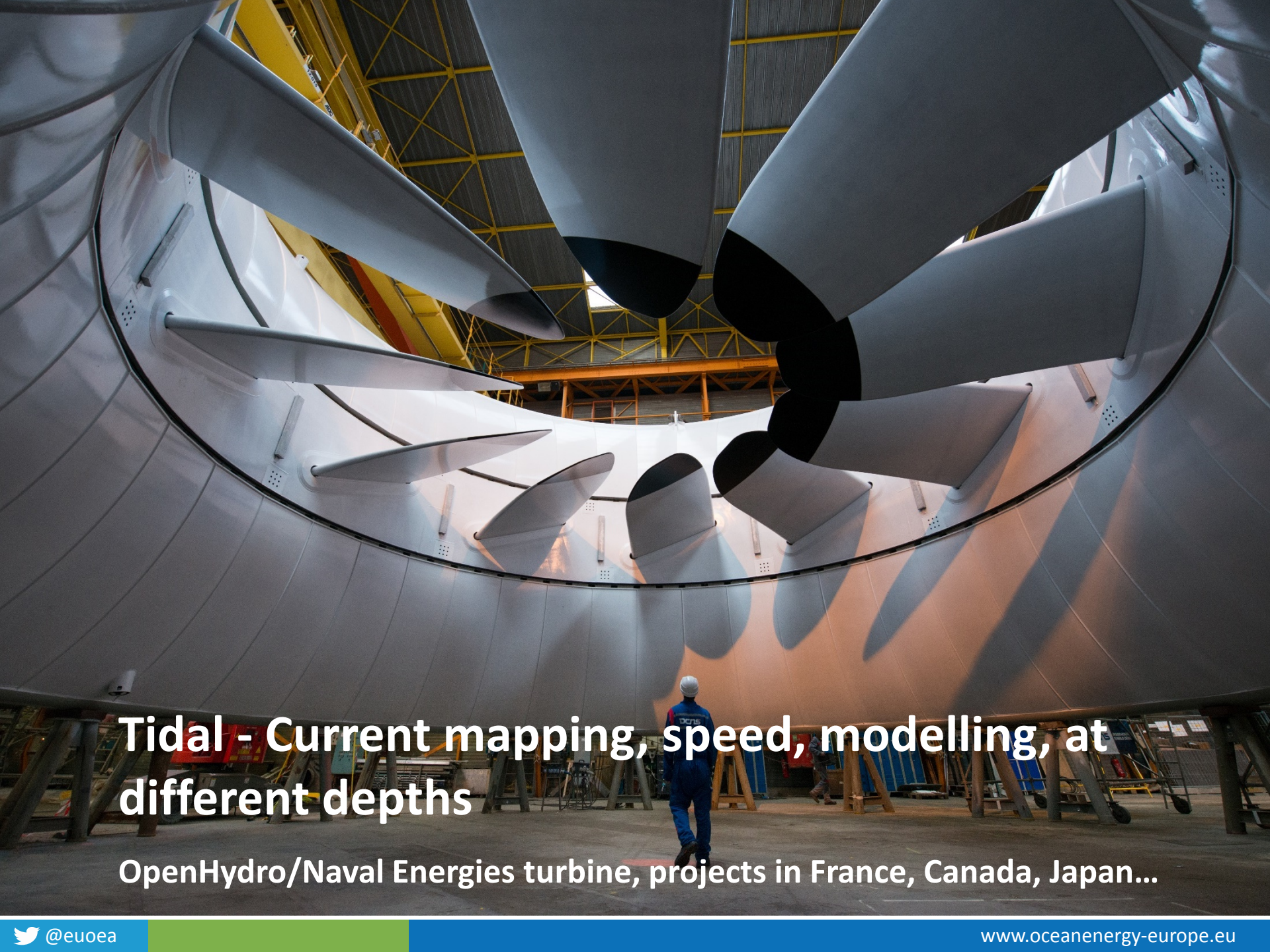
10% reduction in current speed

=

19% reduction in tidal farm revenue

=>

Data precision is key!

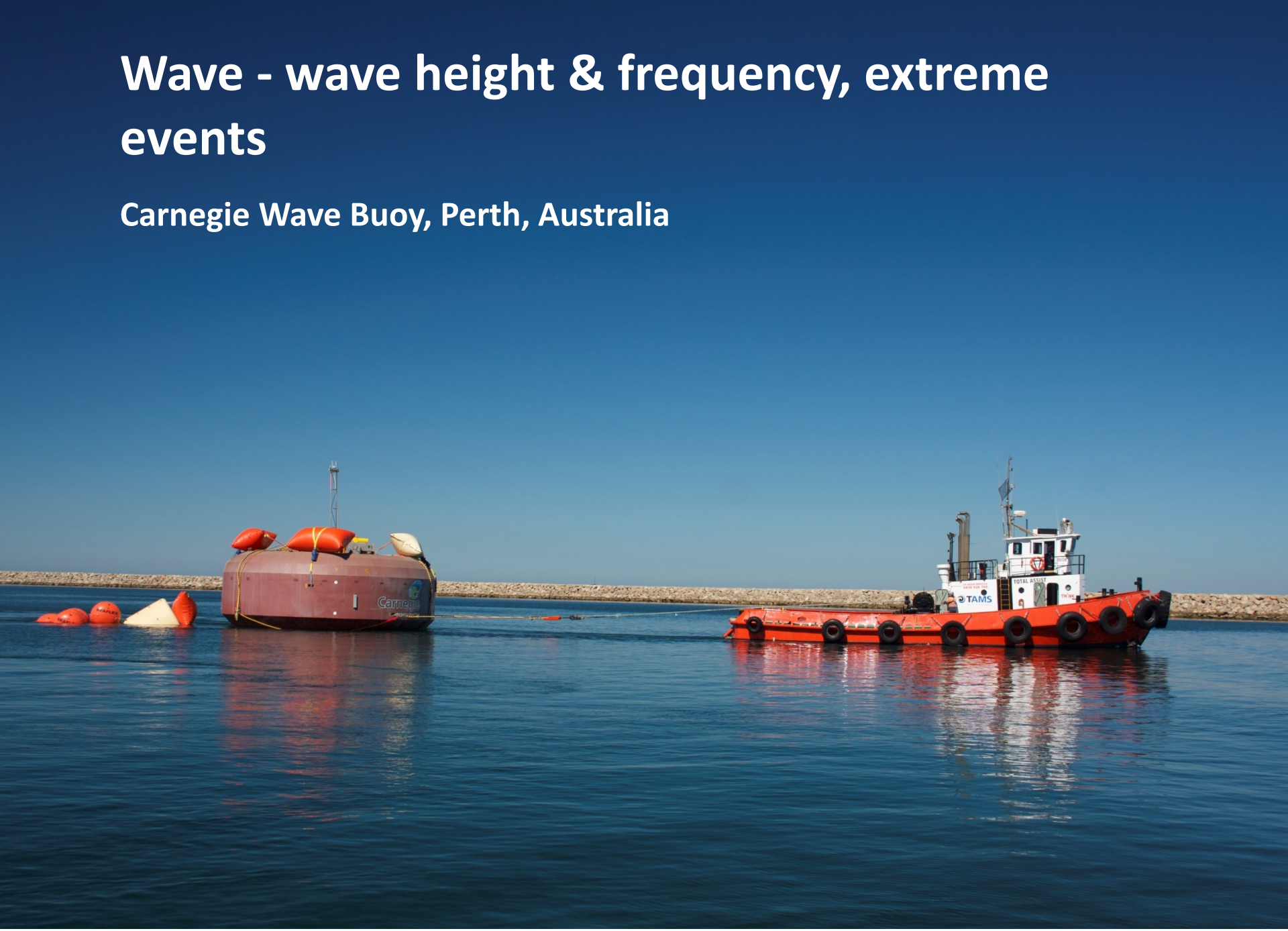


Tidal - Current mapping, speed, modelling, at different depths

OpenHydro/Naval Energies turbine, projects in France, Canada, Japan…

Wave - wave height & frequency, extreme events

Carnegie Wave Buoy, Perth, Australia



Salinity gradient – Resource evaluation, impacts of currents/waves

Fujifilm/Redstack prototype, Netherlands

OTEC - Temperature evaluation, weather information to secure operations at sea

NEMO project, Naval Energies, La Martinique (NER300)

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Potential tailoring 1: higher resolution

- Existing data sets
  - Often estimates / extrapolations
  - Do not cover
- Copernicus resolution is 7x7km
  - Increase resolution to improve sitting assessments
  - Data closer to the coast to cover more potential sites, esp for tidal

Potential tailoring 2: focus on promising export markets

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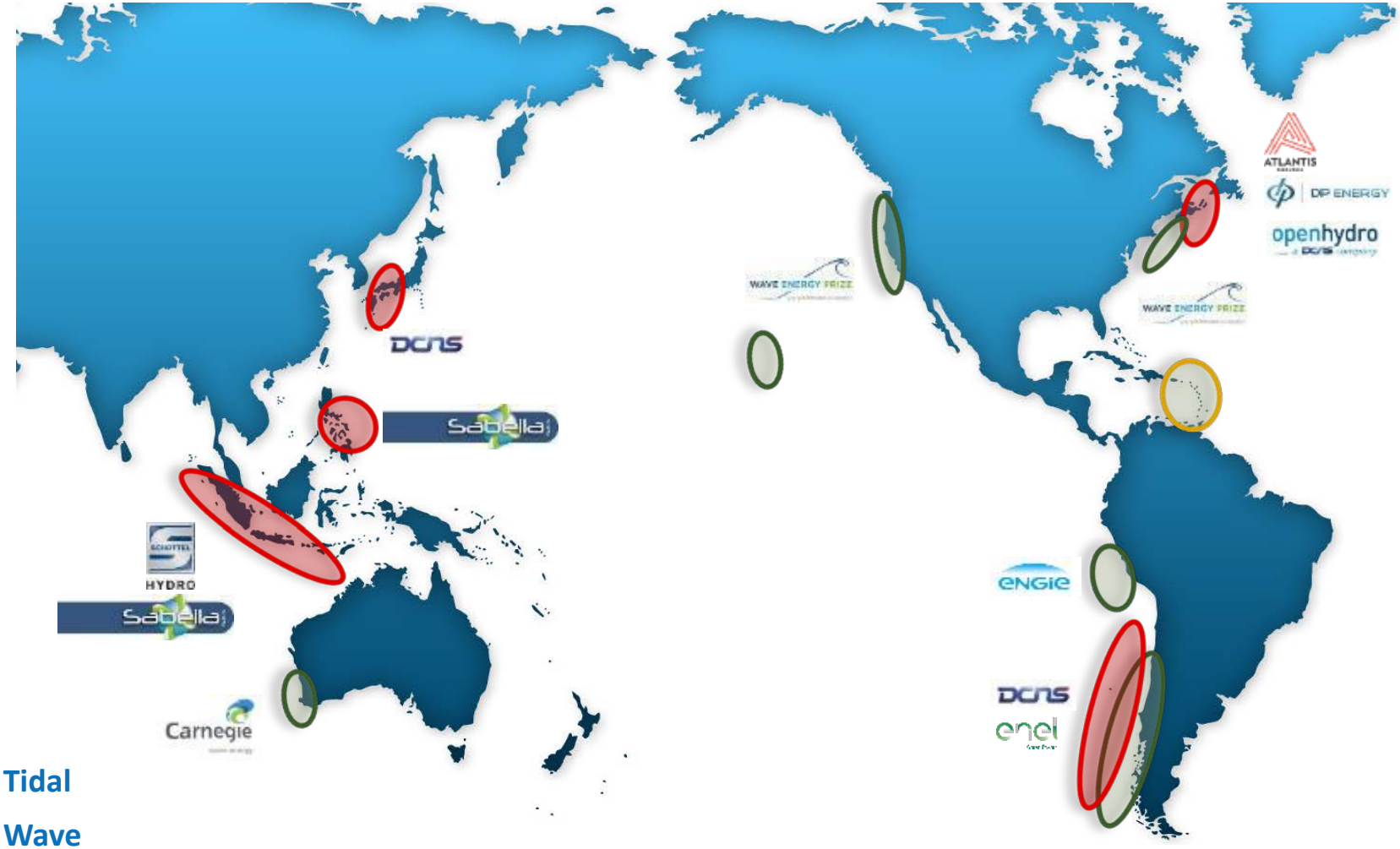

- Tidal
- Wave
- OTEC

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Potential tailoring 2: focus on export markets

- Information outside of Europe is patchy
  - Industrialised country don't use ocean energy yet
  - Developing countries lack funding for assessments
- Available (& free) information will
  - lower development costs
  - Help identify new markets
  - Help refine known markets

The need for a longer term programme…

- Financial planning requires accurate assessment
- Renewable resource is inherently variable
- “In situ” studies are costly

➢ Resource information over several years is precious

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Thank you !