



CATAPULT
Offshore Renewable Energy

Tidal Energy Panellist Session

Teo van der Kammen – ORE Catapult, Technical Manager

10th May, Glasgow SEC Boisdale 1 room

Teo van der Kammen

ORE Catapult's Technical Manager

- Worked for ORE Catapult since 2019
- Previously worked for two tidal stream technology developers including installation of 2 demonstration tidal turbines in UK waters, project management for Airbus A350 programme before returning to marine energy and offshore wind at ORE catapult.
- Background is managing complex, multi partner, multi-million-pound research and development projects (predominantly) in renewables.
- Qualified Project Manager and full member of the Association for Project Managers specialising in technical R&D programmes.

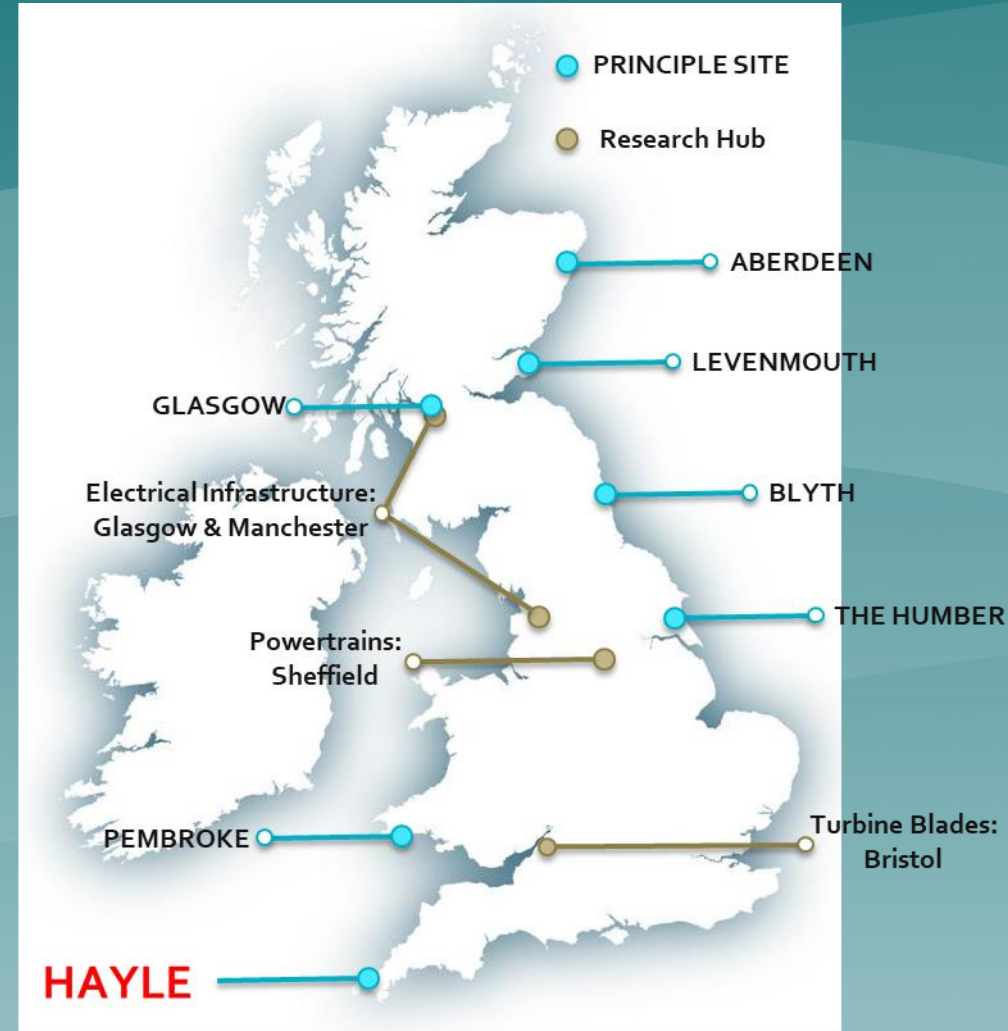


Offshore Renewable Energy Catapult

Our Mission:

To deliver the UK's largest clean growth opportunity by accelerating the creation and growth of UK companies in offshore renewable energy.

1. 306 engineering & research experts with deep sector knowledge
2. Independent and trusted partner
3. Work with industry and academia to commercialise new technologies
4. Reduce the cost of offshore renewable energy
5. Deliver UK economic benefit



TIGER (Tidal stream Industry EnerGiser Project)



Cambrian Offshore

- Refurbish or replace Delta Stream and foundation structure. Redeploy in 2022.

Hydroquest

- Turbine testing at Paimpol-Bréhat in 2020/21
- New 3MW turbine design in progress for deployment in 2023

QED(Naval)

- Sub hub proving trials Isle of Wight in Autumn 2021
- Design work started on industrial scale Sub hub platform

Normandie Hydrolienne

- Consenting at Le Raz Blanchard for deployment in 2023/4
- New 3MW turbine design underway, largest rotor

Orbital

- New platform and turbine design underway
- Targeting deployment at a TIGER site from 2027/28

MHE56

- Sabella - new rotor and turbine design
- Deployment in 2022

MINESTO

- Consent and infrastructure planning for deployment at Paimpol-Bréhat in late 2021

TIGER validated tidal stream cost reduction potential

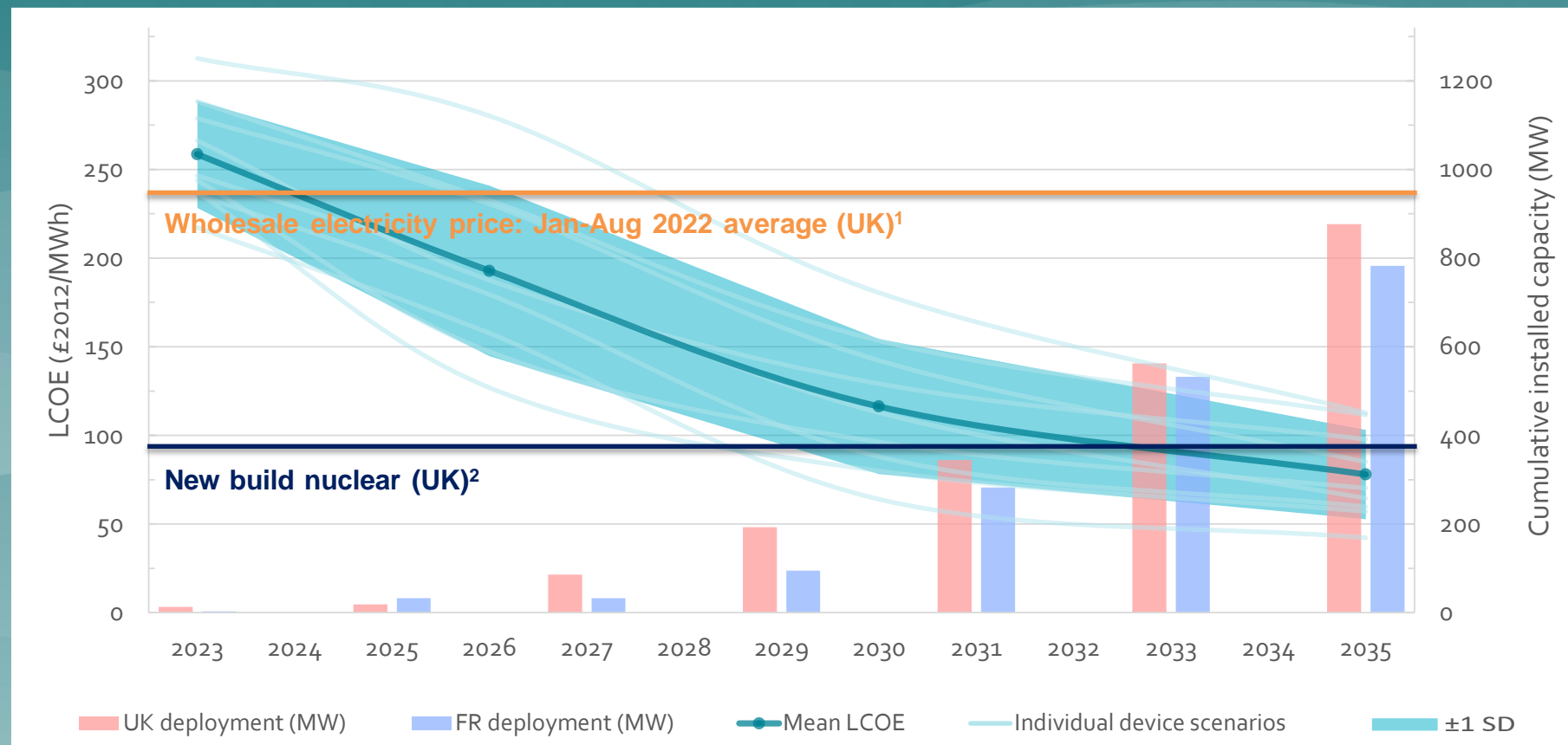
"Present": £259 ± 30/MWh

2026: £193 ± 48/MWh

2030: £116 ± 38/MWh

2035: £78 ± 25/MWh

2045: £45/MWh ??

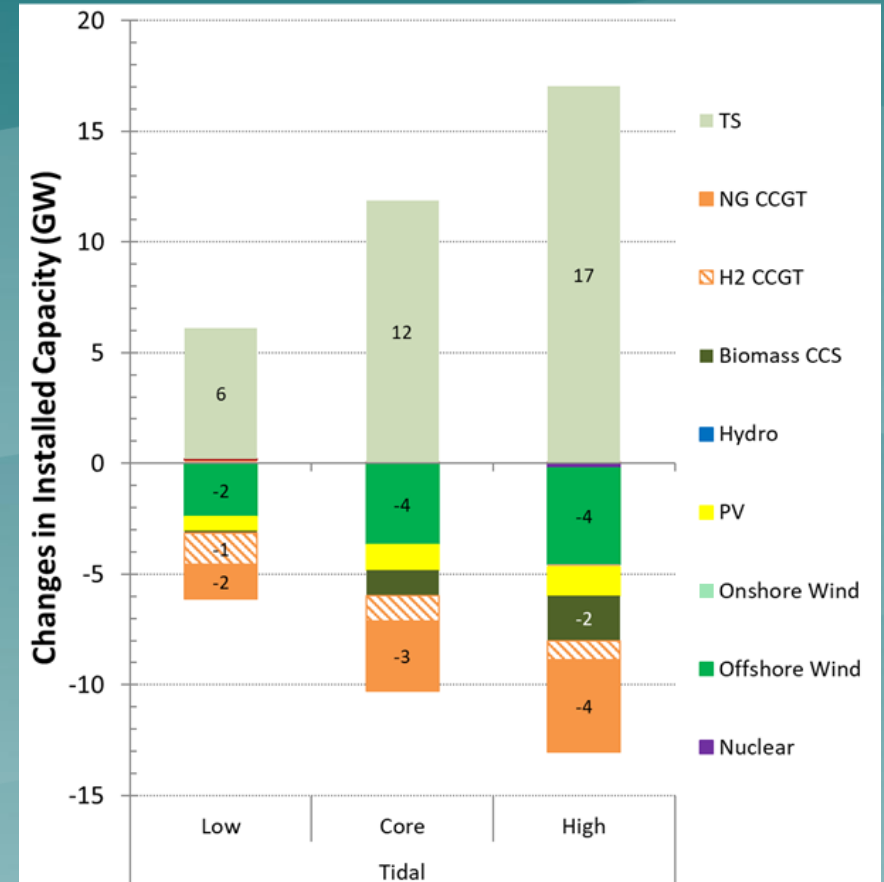


¹ Forward delivery contracts, weekly average. Published by Ofgem (<https://www.ofgem.gov.uk/energy-data-and-research/data-portal/wholesale-market-indicators>)

² Based on "first of a kind" new nuclear published by BEIS (Electricity Generation Costs 2016)

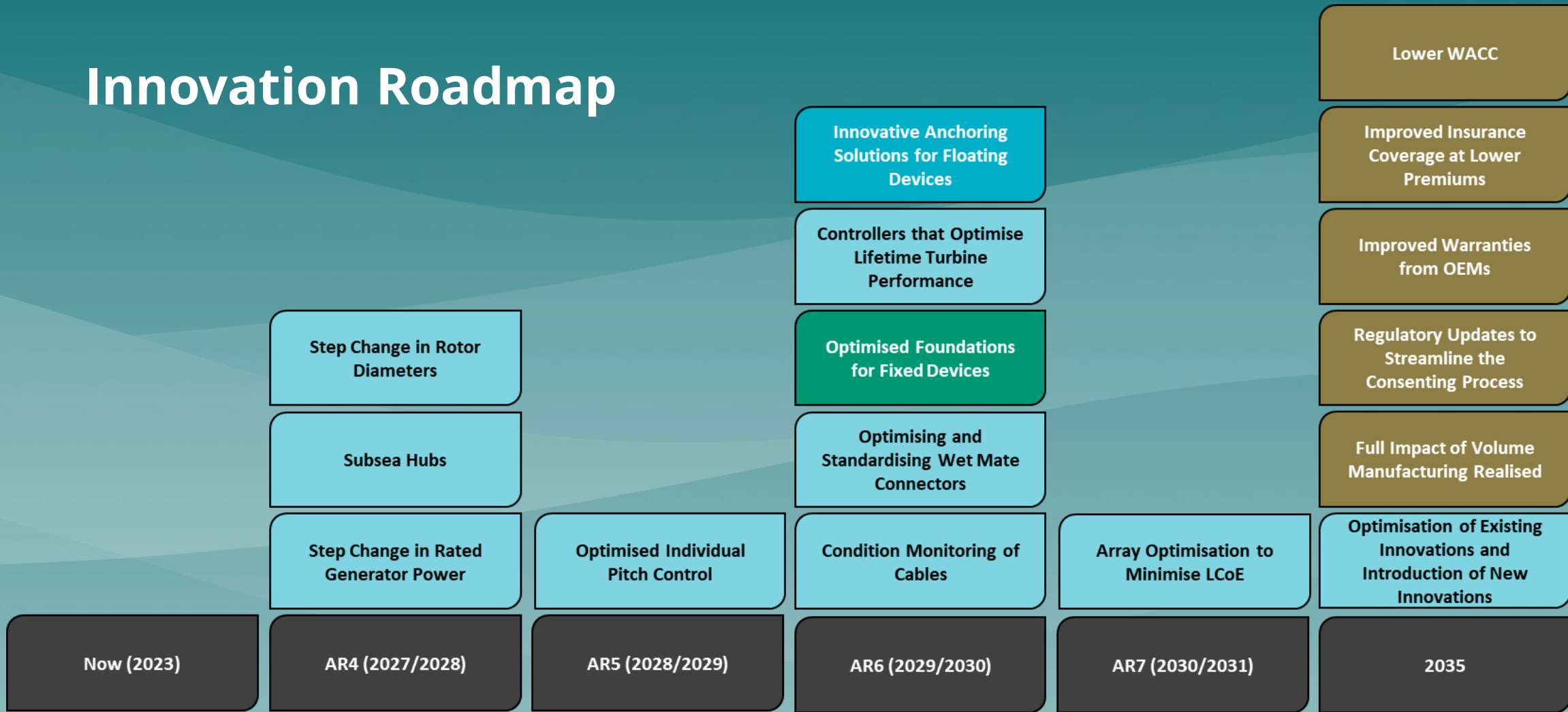
TIGER quantified the energy system benefits

- OREC led study examined 2050 net-zero energy system
- Modelling by Imperial College London (IWES model)
- Study found that:
 - **10.5GW of TSE could provide £2bn of gross cost savings (excluding subsidy)**
 - Including cost of TSE, **TSE could provide net savings of £100-600M** depending on scenario
 - **Low wind year: cost savings increase by ~50%**
 - **40% reduction in CCGT (gas)** for net-zero system
- Results in agreement with other studies (e.g. EVOLVE project, modelling led by University of Edinburgh)



TSE displaces both renewable and non-renewable sources

Innovation Roadmap



Thank You

Contact

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TIGER TIDAL STREAM
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