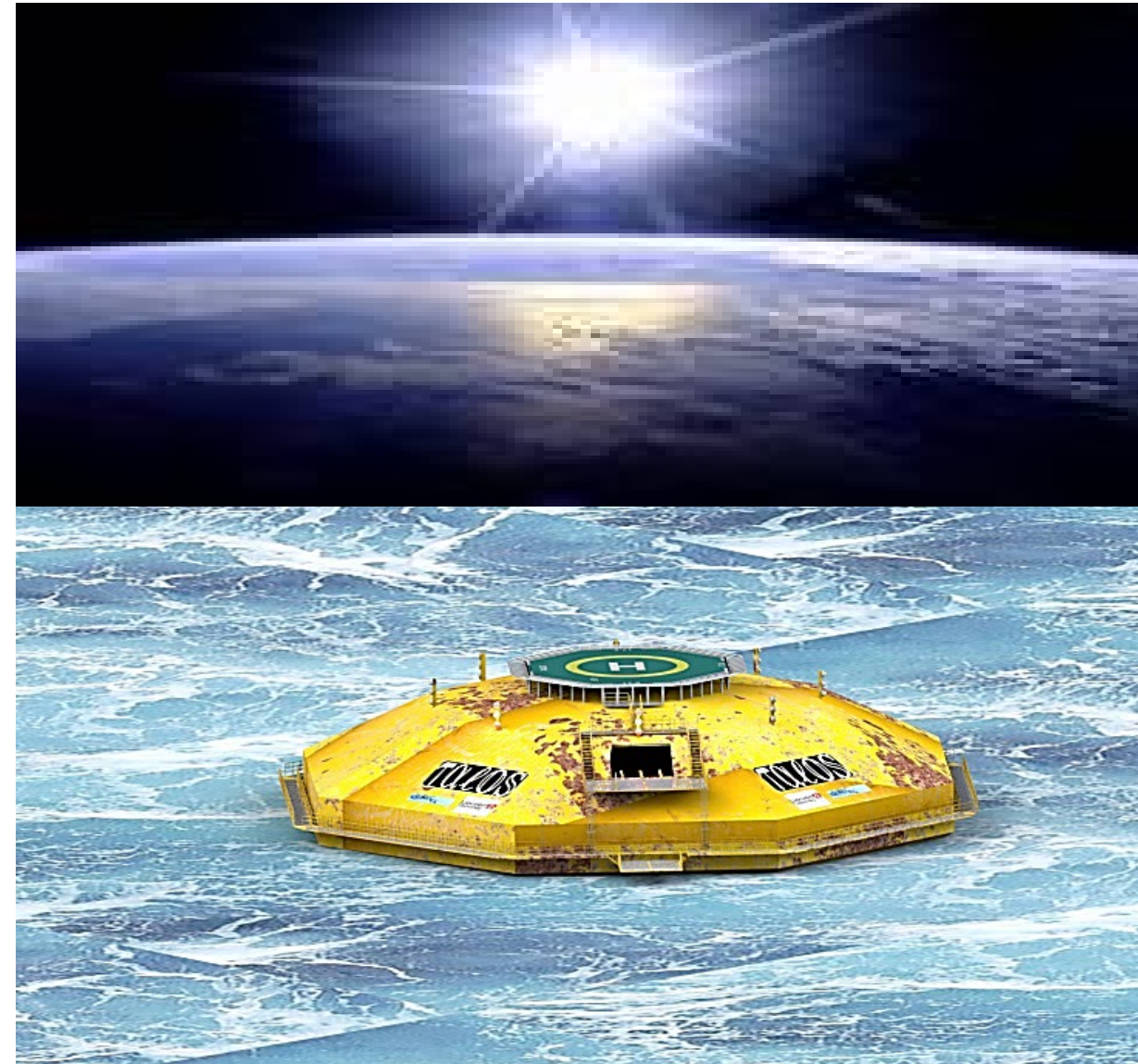


# NHP-WEC

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1. Who is involved
2. Project Aim & Objectives
3. WP structure
4. Conclusions



# Who is involved?

- Lancaster University
- University of Hull
- Advisory Board
  1. European Marine Energy Centre (EMEC)
  2. Offshore Renewable Energy Catapult (OREC)
  3. DNV
  4. AURA
  5. Advanced Manufacturing Research Centre (AMRC)
  6. The Deep



 **SmartWave**

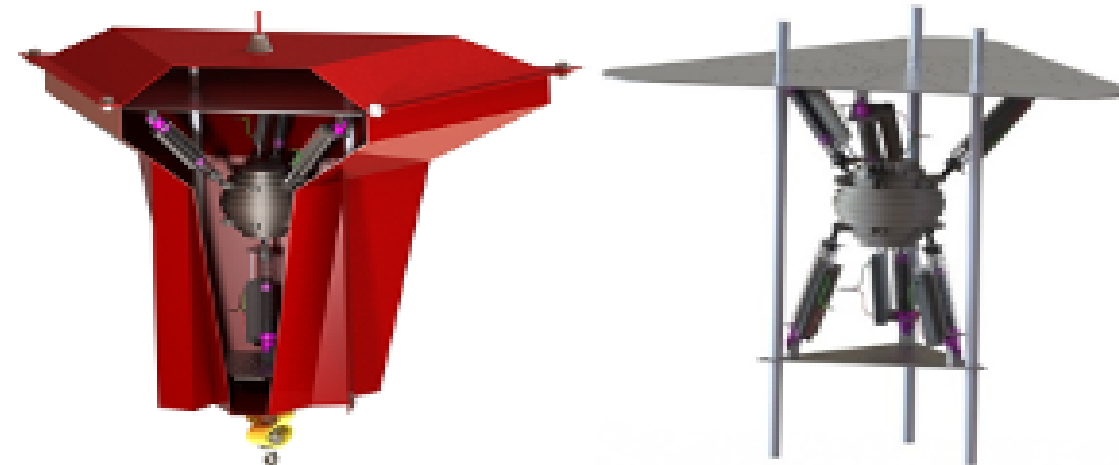
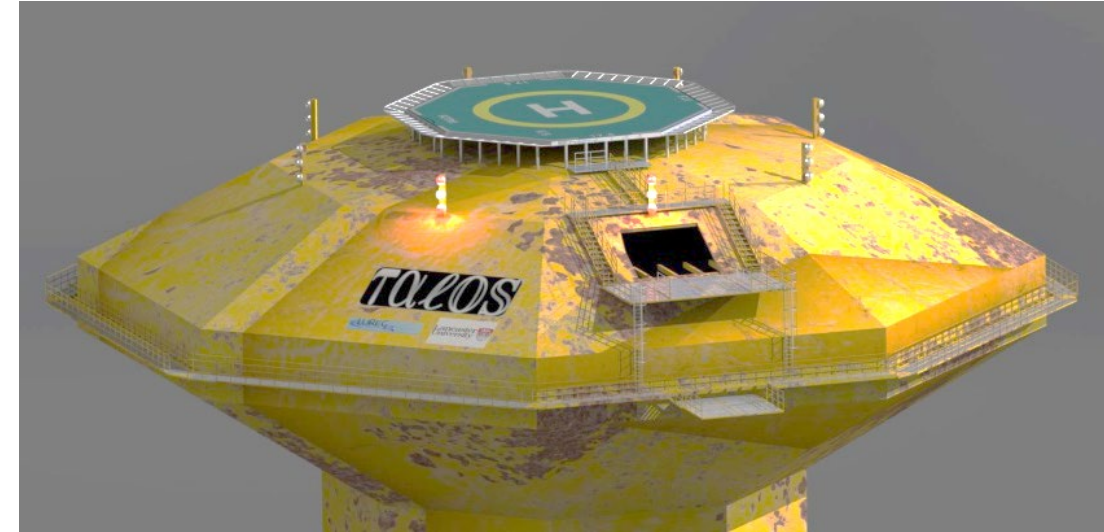
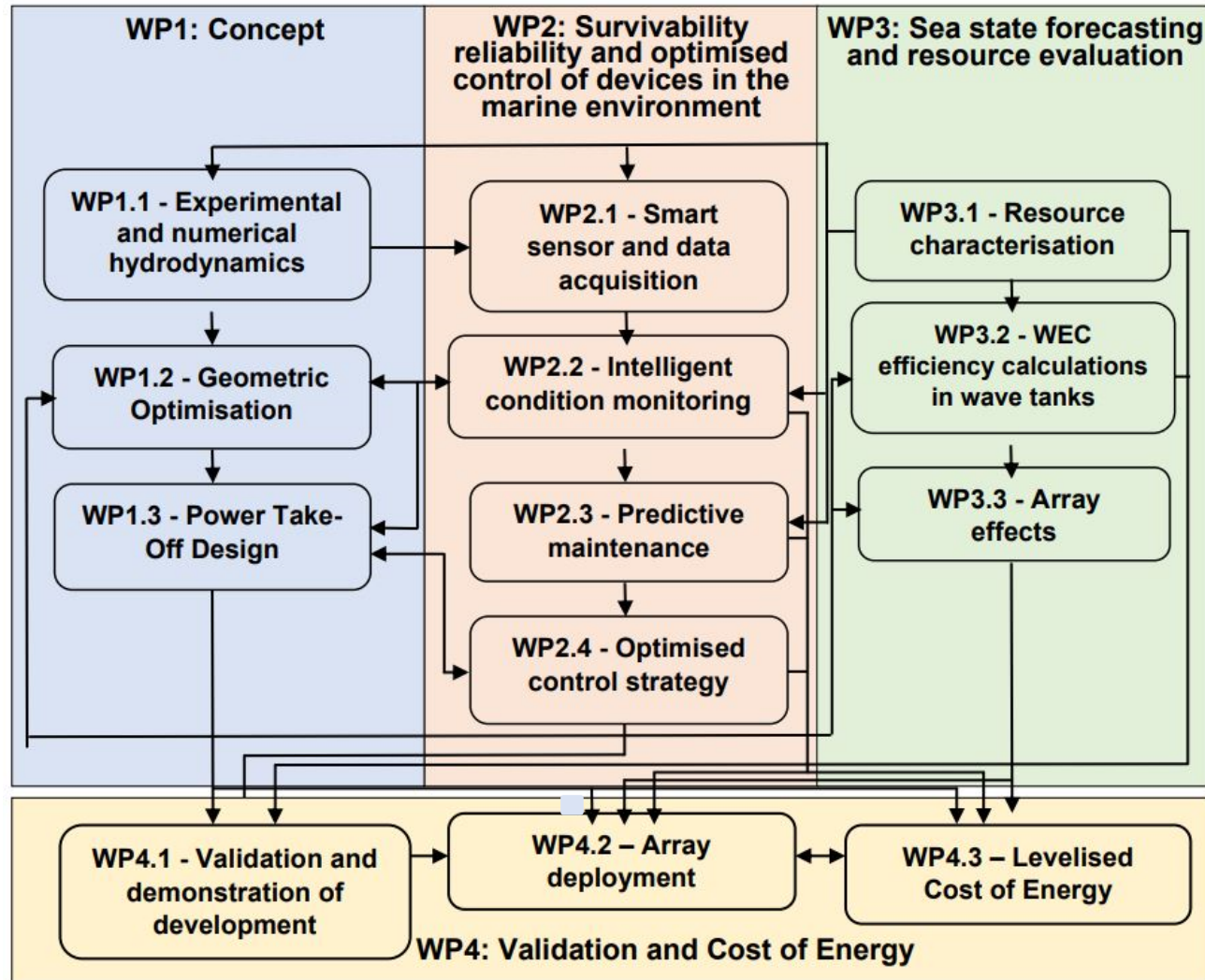
**The project aim:** *Advance WEC technology by developing essential device control and monitoring systems that are integrated with high-fidelity sea state forecasting.*

## Objectives:

1. **Concept optimisation** – *Parameterize hydrodynamic behaviour due to the WEC geometry and PTO design to refine, optimise and maximise performance.*
2. **Operational systems** – *Investigate and implement sensors and actuators required to develop a condition monitoring system that will improve reliability and survivability, and control methods for the multi-axis PTO system advancing overall conversion efficiency.*
3. **Resource forecasting** – *Develop machine-learning based forecasting tools to provide both short-term accurate predictions for the operational systems and long-term energy yield predictions for the device across various deployment sites.*
4. **Device deployment potential** – *Develop a wave-to-wire model to determine the Levelised Cost of Energy (LCOE) at given sites, for both standalone devices and arrays, quantifying the TRL financial baseline performance essential to stimulate commercialisation.*
5. **Marine wave energy development** – *Develop industrial input and research impact objective, including dissemination and showcasing of all the outputs, to ensure that not only one technology develops but that the solutions proposed will benefit the wider energy community.*



# Workflow schematic



# Conclusions



- We have just started
- We have a plan
- But, of course ...
- We are still interested in new ideas / collaborations etc...
- Thank you

