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Data Collection and site survey for tidal energy developments: Best practice and lessons learnt

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INTRODUCTION

Tidal energy deployments are moving from demonstrator installations and pre-commercial projects towards commercial project developments

Detailed resource assessment and site survey required to enable consenting, engineering design and energy yield estimates

AIMS

- Review existing standards and best-practice guidelines for setting up a tidal energy resource assessment
- Define the parameters required for site characterisation and engineering design
- Specify site and design parameters necessary for use in simulations of tidal turbine performance and loading.
- Describe data collection practices, necessary to gather these data sets

METHOD

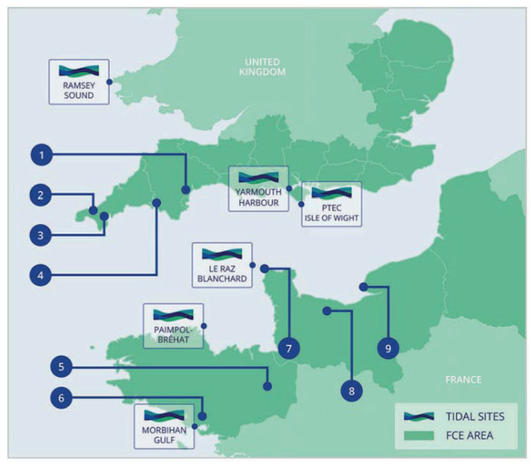
The Tidal Stream Industry Energiser project established a Data Survey Network Group:

- Expert representatives from all partners and external stakeholders.
- The group met formally 12 times since April 2020
- Capturing discussions, expertise and lessons learnt from this forum

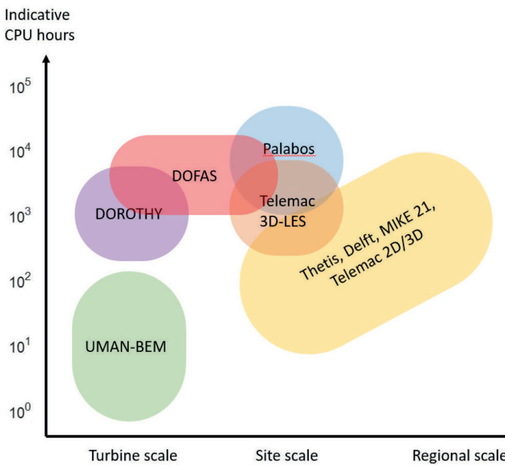
CONCLUSION

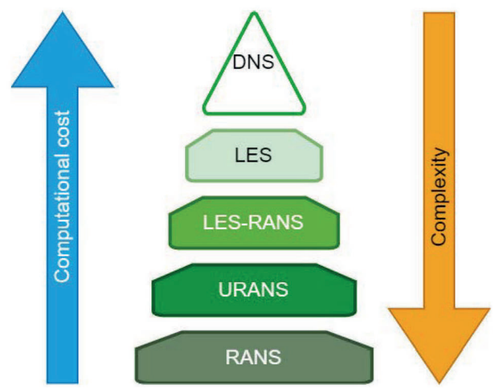
- Every site is different - no 'one size fits all' approach to site assessment.
- Expert knowledge of site & careful planning is needed to ensure high quality data
- Uncertainties, should be considered for key project parameters (AEP, LCOE)
- Data sharing would benefit future projects.
- Cost of data collection must be balanced with data scope

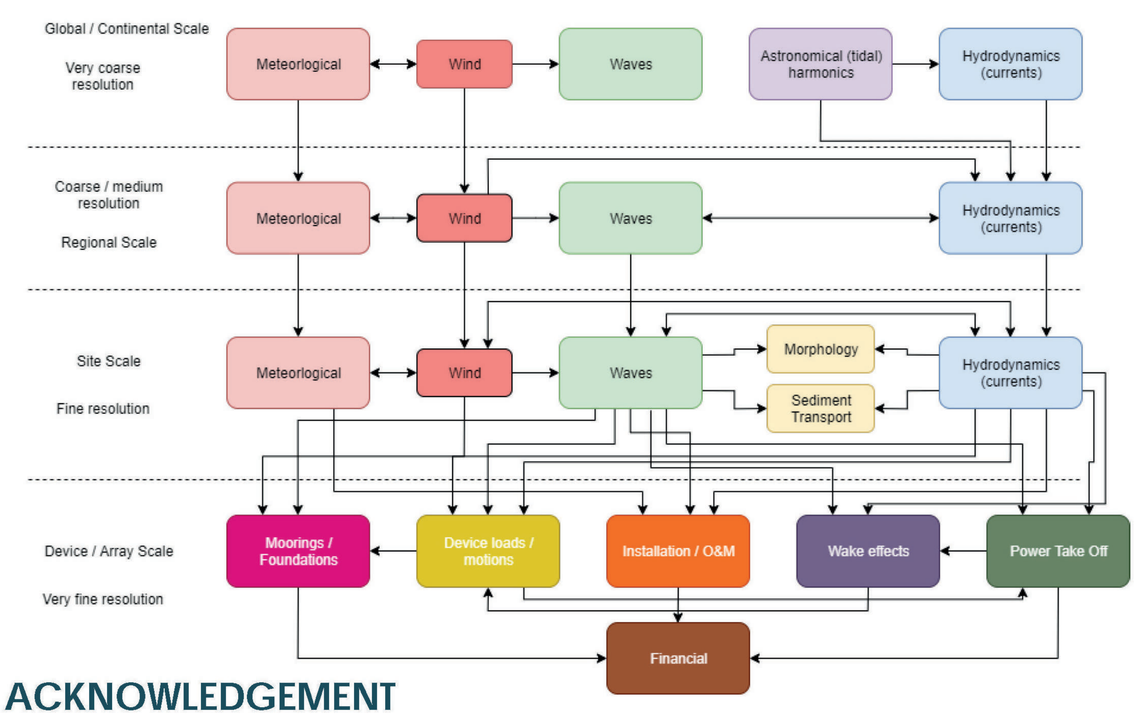
RESULTS



Data Type	Collection Equipment
Currents	ADCP, ADV
Water Level	ADCP, Tide gauge
Waves	ADCP, Wave buoy
Turbulence	ADV, High frequency flow meter
Bathymetry	Single / multibeam sonar, side scan echo
Geotechnics	Sample collection and testing, sonar







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