



# Resource Assessment Services

Understanding the full extent of the resource at a site is a difficult process as the physics behind waves, tides and their interaction is complex, and non-linear.

Nevertheless, this is a crucial step in any marine energy project, not only to predict long term energy yield from a site, but also to provide data to support design, construction and operation work.

A thorough understanding of waves, currents and their interactions at a site converts into a better understanding of loads on devices and energy conversion potential.

## HOW WE CAN HELP

Through our integrated approach to resource measurement, assessment and simulation, we can help to translate ocean waves and currents into energy output. This covers everything from resource measurement to assessment and analysis.

### RESOURCE MEASUREMENT & MODELLING:

- Site surveys and assessments
  - Current and turbulence measurements
  - Wave measurement
- Modelling of turbulence in tidal flows
- Tidal harmonic modelling for energy production calculations
- GIS mapping, offering user-friendly approach with complex spatial data

### RESOURCE ANALYSIS:

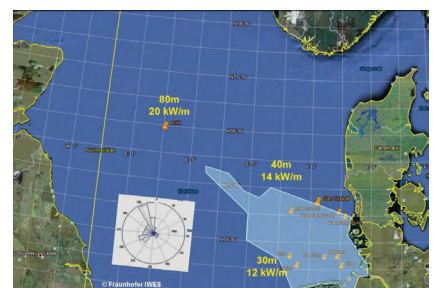
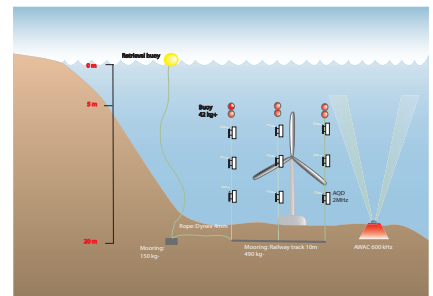
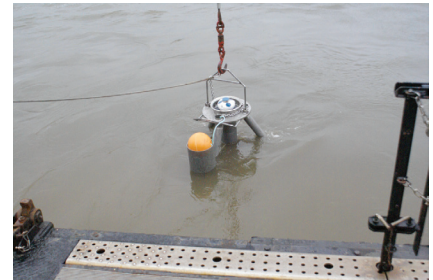
- Wave climate characterisation and spectral analysis
- Shallow water and ocean circulation modelling – Essential to understand the spatial distribution of the resource, and how it is affected by the position of an array

Our **Resource Assessment Services** help to translate real wave and current data into optimised device design and accurately predicted energy production for single units or tidal energy arrays. Our site measurement data is used to calibrate to our assessment and analysis models.

This analysis has benefits for technology development and also the economic value of a tidal energy array project.

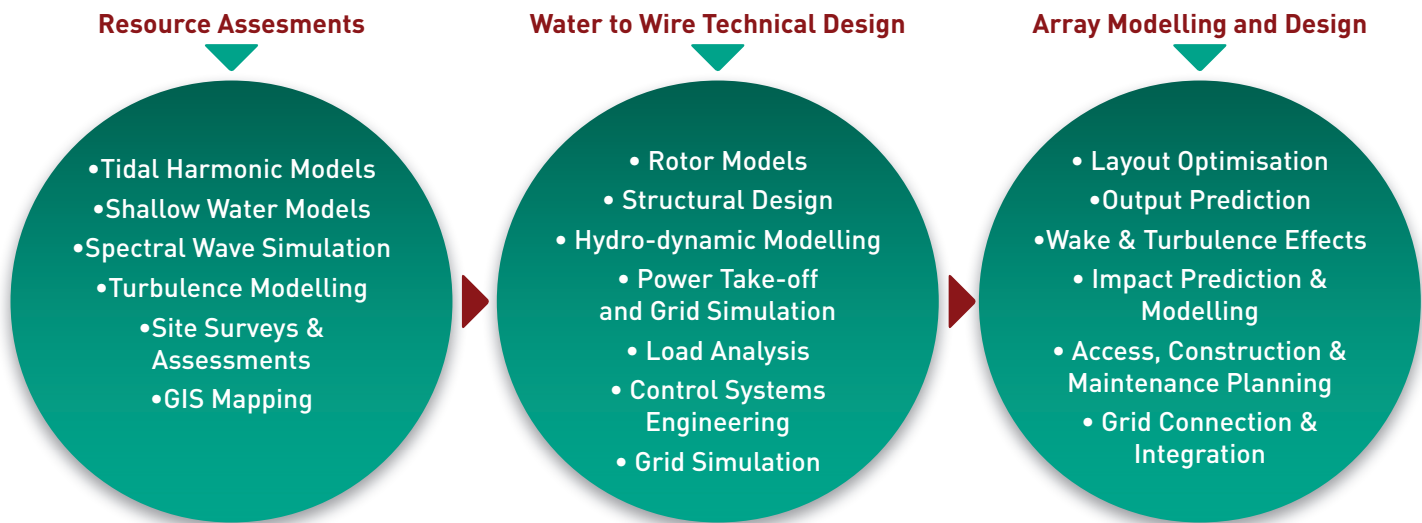
Our integrated approach to cutting edge data gathering from micro to macro scale ensures that we can offer valuable insight into this complicated issue.

This comprehensive and cutting edge application can make a substantial difference to your project. Get in touch to find out how IT Power and Fraunhofer IWES can customise our expertise to your project and site requirements.



# MARINE ENERGY SIMULATION SOLUTIONS

Our **Resource Assessments Services** form part of our **Simulation Design & Modelling Solutions** that we offer marine energy technology and project developers.



## WHO WE ARE

IT Power has provided independent consulting and engineering support to the marine energy sector since 1992. The Fraunhofer Institute for Wind Energy and Energy System Technology IWES is a world-renowned research and technology development facility. Together, we can provide you with the practical consulting experience and cutting edge research and design resources to deliver success for your technology and projects.

**We have already helped several companies develop full scale demonstration prototypes. Find out how we can help your marine energy development.**

## OUR PARTNERSHIP

The IT Power and Fraunhofer IWES partnership is built on a long standing collaboration between the two organisations that has spanned over 15 years. We have worked cooperatively on over a dozen major reach projects. Our partnership therefore offers you the very best engineering support and technical expertise for your marine energy project development. Our simulation solutions deliver expertise throughout the entire cycle of both technology and project development, from resource assessment, to device evolution and project commissioning.

## ENGINEERING EXPERTS FOR YOUR MARINE TECHNOLOGY SUCCESS

We can provide all of your modelling simulation support and project design services to solidify your place as a marine energy front-runner.

### OUR DEDICATED TEAM OF EXPERTS INCLUDE:

- Mechanical and Electrical Engineers
- Naval Architects
- Hydro-dynamists
- Oceanographers
- Environmental Scientists
- Numerical Modellers

## CONTACT US

To find out how we can provide simulation solutions for your marine energy project, get in touch.



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