Wave and Tidal Energy Services

About

The UK has amongst the highest levels of marine renewable energy resources in the world, and has the potential to become a global leader in both engineering development and energy production.

ABPmer has a strong portfolio of expertise in marine renewable projects and can provide the following support to your project:

Site Selection

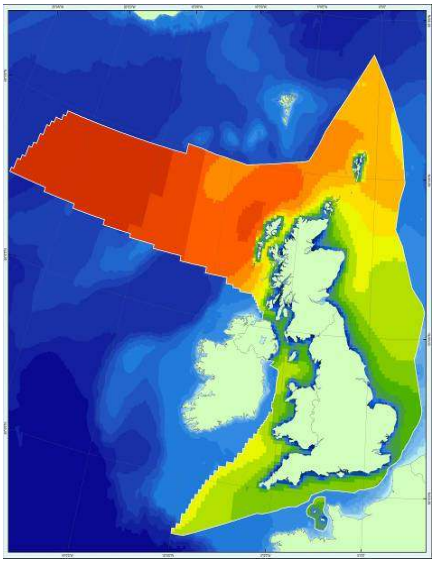
Environmental Impact Assessment (EIA)

License and consent support

Design support and metocean data analysis

Operational forecasting

Typically, studies require a combination of specialist skills ranging from desktop assessment to environmental evaluation and numerical modelling. All benefit from the depth of our experience and understanding of the dynamics of coastal resources and ecological processes and draw on our active research interests



Site Selection

In 2004, ABPmer conceived the Atlas of the UK Marine Renewable Energy Resources which was updated in 2008 for a Strategic Environmental Assessment (SEA). The large-scale assessment identified wave resources towards the north and south west approaches and tidal stream resources focused around headlands and in sounds.

Recently more detailed local assessments have been completed for developers investigating resource distribution in specific areas. Using our extensive background in marine spatial planning we are able to support detailed site selection, based on resource characterization and evaluation of both hard and soft constraints.

Our expert understanding of the potential interaction between marine renewable energy devices and natural heritage interests enables us to provide clear advice on the likely acceptability of proposals to regulators and statutory nature conservation advisors.

Design and Operational Support

ABPmer's modelling and process teams can offer analysis of a range of metocean parameters to support developers and determine the meteorological constraints on construction, operation and maintenance periods.

We recognise the importance of applying thorough metocean understanding throughout the development cycle and initiated the development of the industry CIRIA guidance and standard to support the renewables industry. The guidelines are structured so that as each phase of project development is advanced the further requirements of using metocean data are clearly identified, with recognition to what currently represents good practice within the marine renewables industry.

We also maintain an advisory role in developing marine renewable standards including involvement in the BSI technical committee on Wave and Tidal Energy Convertors (PEL/114).

Further Information

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Operational Forecasting

One key operational requirement for wave and tidal energy schemes is good knowledge of the likely power outputs available to the market. To address this issue ABPmer has launched **SEASTATES,** which is a metocean forecasting tool designed to predict future power generation potential with a rolling 5-day horizon

All wave data | Export

Date	Day	Time	Height (m)	Tpeak (s)		Direction (Deg)
25/03/2009	Wednesday	00:00	3.28	349	↑	10.6
25/03/2009	Wednesday	01:00	3.53	354	↑	8.5
25/03/2009	Wednesday	02:00	3.53	349	↑	9.8
25/03/2009	Wednesday	03:00	3.28	349	↑	9.4
25/03/2009	Wednesday	04:00	3.40	354	↑	9.1
25/03/2009	Wednesday	05:00	3.53	343	↑	9.0
25/03/2009	Wednesday	06:00	3.53	354	↑	9.1
25/03/2009	Wednesday	07:00	3.28	0	↑	9.6

Understanding Environmental Impacts

ABPmer provides a range of conservation advice to industries operating in the marine environment. We also have particular skills in developing practical options for mitigation under the EIA Directive and/or compensation requirements under the Habitats and the Birds Directives. We are practiced in helping to secure agreements with stakeholders for the development of legally-agreeable mitigation and monitoring programmes.

ABPmer has been closely involved in developing plans for designated sites of natural and cultural heritage value. We provided a review, funded by Npower Juice, of the environmental impacts from devices and interactions with nature conservation features as a guideline for regulators and industry. We are therefore well placed to advise on likely issues that will need to be investigated and assessed to achieve consent. We have recently developed and applied a collision Risk Assessment Tool (AutoCRAT) to assess collision risks for fish, birds and marine mammals with marine renewable energy devices. We also have particular expertise in the assessment of underwater noise risks for marine mammals and fish.

Coastal Process Studies

As the leading supplier of coastal process assessments and numerical modeling studies to the offshore renewables industry, ABPmer offers proven and established capability in the provision of the coastal process aspects of EIA. We offer expertise in the areas of seabed studies (morphology, stability and mobility), metocean data analysis, numerical modeling and interpretation, impact assessment and ES preparation.

Our services in relation to coastal process EIA cover the scoping and identification; baseline characterization (drawing on existing data and analysis of new survey data); impact assessment (for example, assessing the downstream effects of energy extraction on hydrodynamic processes and sediments) and mitigation and monitoring. ABPmer is able to integrate predictions of changes to the physical environment with changes to the biological environment enabling completion of the benthic ecology component of EIA.

Underwater Noise

The planning and development of commercial scale arrays is subject to a number of environmental laws and regulations. To remain compliant with legislation, it is important to fully understand the risks associated with a project.

There is increasing recognition by regulators that underwater noise associated with the construction, operation and maintenance of structures in the marine environment can be significant; especially in areas that historically have not experienced major anthropogenic disturbance. The resulting manmade underwater noise has the potential to disrupt communications and impact the hearing of marine animals.

ABPmer works with leading sub-acoustic consultancies to offer a complete underwater noise service that integrates their measurement and assessment expertise with our significant experience in understanding and mitigating environmental risks in the marine environment.

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