
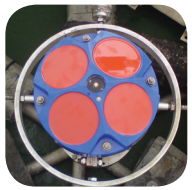
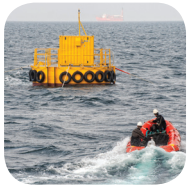

SCALE TEST SITES

We also provide two smaller scale test sites – one for wave in Scapa Flow and one for tide in Shapinsay Sound – where developers can test prototype devices and components, or try out different techniques, in less challenging sea conditions.

Unlike the full-scale test sites, these sites are not connected to the national grid. Specially designed buoys dissipate any electricity generated safely, whilst also providing a means to monitor and communicate with devices.

RESEARCH AND CONSULTANCY

We have helped develop international guidelines for wave and tidal testing and also undertake a wide range of consultancy and research work to support the marine energy industry.

Our knowledge and expertise is sought around the world and we continue to work closely with a number of countries and regions, helping them develop their own marine energy test facilities.

We are currently assisting the development of marine energy test centres across the Americas, Asia, Australasia and Europe.

ORKNEY – AN INTERNATIONAL CENTRE OF EXCELLENCE

Orkney is regarded as an international centre of excellence for marine energy research and development, with EMEC a global focal point for the industry.

Due to the unprecedented level of marine energy activity taking place in Orkney, a substantial local industry has developed.

Marine energy supports around 300 jobs in Orkney across a wide range of sectors, from manufacturing and engineering, to marine work, research and consultancy services, with more posts being created every year.

EMEC clients have estimated they spend approximately £1m in the local economy per single prototype device, working with a large number of local contractors and businesses. Since 2011, EMEC itself has injected over £1m a year into the local supply chain.



FIND OUT MORE

For more information on EMEC, please visit our website at **www.emec.org.uk**.

KEEP UPDATED

Check out our blog for the latest developments in the marine energy sector.

We are also on Facebook and Twitter - @emec_orkney.

CONTACT US

EMEC Ltd
Old Academy Business Centre,
Stromness,
Orkney Islands KW16 3AW
T: 01856 852060
E: info@emec.org.uk

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EMEC ORKNEY

THE EUROPEAN MARINE ENERGY CENTRE LTD

A GLOBAL CENTRE OF EXCELLENCE IN MARINE ENERGY TESTING AND RESEARCH

THE EUROPEAN MARINE ENERGY CENTRE – A WORLD FIRST FOR ORKNEY

Welcome to the European Marine Energy Centre (EMEC), the world's first and leading real sea test centre for marine energy converters – machines that generate electricity by harnessing the power of waves and tidal streams.

We operate wave and tidal test sites in Orkney, where marine energy developers can try out devices in real sea conditions.

Orkney is the ideal location for a marine energy test centre, with some of the harshest wave and tidal conditions in the world, situated close to more sheltered inshore waters and excellent harbour facilities. What's more, a breadth of renewable, environmental and maritime skill exists within the Orkney community, with this expertise essential for the development of the marine energy industry.

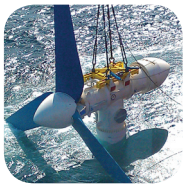
More grid connected marine energy devices have been tested at EMEC than at any other single location in the world.

FROM VISION TO REALITY – THE EMEC STORY

EMEC was set up in 2003, with over £30 million of public funding invested to date from Highlands and Islands Enterprise, Scottish Enterprise, the Scottish and UK governments, Orkney Islands Council, the European Union and the Carbon Trust.

We operate on a not-for-profit basis and remain fully independent and self-financing.

Since opening, EMEC has grown considerably. We now have over 20 members of staff based locally, six wave test berths, an eight-berth tidal test site, and two smaller-scale test sites situated in gentler conditions. Our facilities attract developers from around the world, with some of the most innovative marine energy technologies on the planet being tested in Orkney.



ABOUT OUR WORK

Wave and tidal energy technologies are still in their infancy, and testing is essential to develop devices to a point where they can be deployed on a large-scale. The developers trialling technologies at EMEC are not only testing how to generate electricity – this has already been done – but also exploring how devices can best be installed, operated and maintained in harsh sea conditions, while generating power more efficiently.

With some of the most challenging near-shore marine and weather conditions in the world, devices trialled at EMEC are truly put to the test.

If these technologies can survive and operate in Orkney, they can work anywhere in the world!

Simply put, EMEC is a 'plug and play' facility, providing the infrastructure and support services necessary to test wave and tidal energy converters. We don't design or build the marine energy devices ourselves.

BILLIA CROO WAVE SITE

Our full-scale wave test site is situated at Billia Croo, on Orkney's west mainland. The site is open to the large, powerful waves of the Atlantic Ocean, but is also close to the harbour facilities at Stromness and Lyness. Waves at Billia Croo average between two and three metres, though seas as high as 19 metres have been recorded at the site.

The wave site has five grid-connected test berths, situated around two kilometres offshore in water up to 70m in depth, with an additional near-shore berth in shallower waters.

FALL OF WARNESS TIDAL SITE

Our full-scale tidal test site is located at the Fall of Warness, off the island of Eday, in a narrow channel between the Westray Firth and the Stronsay Firth which concentrates the tide as it flows between the Atlantic Ocean and North Sea. This area has a very strong tidal current, which can travel up to four metres per second, or eight knots.

The tidal site has eight grid-connected test berths at depths of between 12m and 50m, and has close access to Hatston Pier, in Kirkwall.

HARVESTING THE OCEAN'S ENERGY – OUR INFRASTRUCTURE

Our full-scale test berths are connected to onshore substations by 11Kv sub-sea cables, which subsequently connect to the national grid. Therefore, any electricity generated by device testing is used to power homes. The sub-sea cables also contain fibre optics, which transmit information back to our data centre in Stromness and allow developers to communicate with their devices.

Observation points allow us to monitor marine life activity at each site. Specialist instrumentation and purpose built weather stations measure wave, tidal and weather conditions on site and provide real-time data to developers.

Live streams of site data can be viewed on the EMEC website.