

full scale

prototype testing



The European Marine Energy Centre provides internationally recognised and independently accredited purpose-built, open sea test facilities for wave and tidal marine energy converters in the world class wave and tidal conditions of Orkney, Scotland.

Established in 2003 EMEC is the only centre of its kind to offer developers the opportunity to test full scale grid connected prototype devices harnessing the power of the sea.

To date more full-scale devices have been tested at EMEC than at any other single site in the world.



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Full scale prototype testing

EMEC's operations are spread over several sites. The wave test site is at Billia Croo, on the Mainland of Orkney, and the tidal test site is in the Fall of Warness off the island of Eday. More sheltered scale test sites are situated in Scapa Flow and Shapinsay Sound. EMEC's offices and data facilities are sited in Stromness.

Provision of full-scale wave and tidal device testing (UKAS Accredited (ISO 17025))

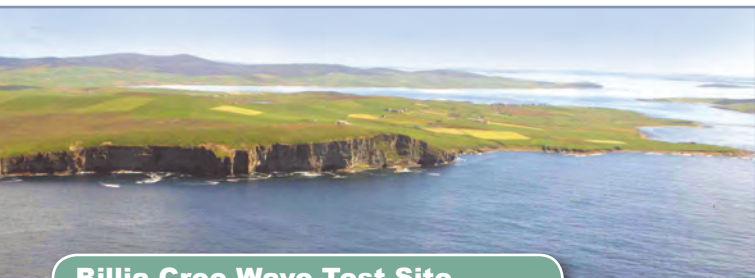
- Independent assessment of devices' energy conversion capabilities
- Realtime technology, resource and environmental monitoring
- Assistance with Grid connection, Power Purchase Agreement and ROCs accreditation
- Extensive assistance with consent & regulatory issues
- Extensive local research and engineering support
- Nearby access to sheltered water and harbours
- Office and data centre support

Accreditation

EMEC operates within a UKAS accredited integrated management system, which incorporates Quality Health & Safety standards. UKAS accreditation - a world first - means we can offer independent, internationally recognised verification of the performance of devices which come to test at EMEC.

Infrastructure

- Coastal 11kV control and switching stations
- All berths UK grid connected
- Metered power output from test devices
- Comprehensive SCADA system (system control and data acquisition)
- Data transfer by fibre optic cables to allow remote access
- Wave, tidal and environmental baseline data collection
- MET stations calibrated to national standards
- Full confidentiality of data
- CCTV monitoring



Billia Croo Wave Test Site

- Full oceanic regime with uninterrupted Atlantic waves of up to 17m
- 5 cabled test berths in up to 70m water, 2 km offshore
- Near shore berth for shallow water projects
- CCTV monitoring of test site berths from Black Craig observation point

EMEC's wave test facility is ideally placed on the western edge of the Orkney mainland, Billia Croo, Stromness. Subjected to the powerful dynamic forces of the North Atlantic Ocean, it is an area with one of the highest wave energy potentials in Europe. Shallow water test facilities situated close to the substation are also available.

EMEC office and data facilities

Stromness

Kirkwall

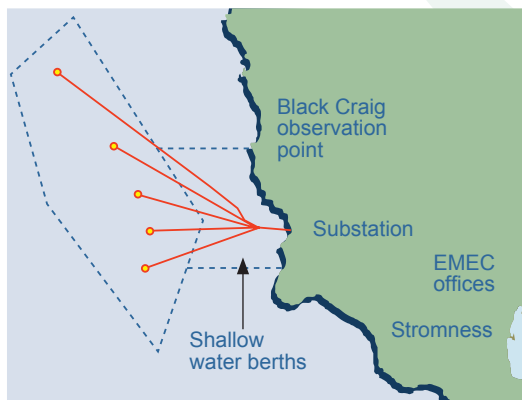
Fall of Warness Tidal Test Site

- Full tidal regime with 8 test berths in 12m-50m water in an area 2km across and approximately 4km in length

The tidal test site at the Fall of Warness, to the west of the island of Eday, was chosen for its high velocity marine currents which reach almost 4m/sec (7.8 knots) at spring tides.

Tidal scale site (Shapinsay Sound)

Wave scale site (Scapa Flow)



Billia Croo Wave Test Site

Pentland Firth

Fall of Warness Tidal Test Site

