



PELAMIS WAVE POWER is widely recognised as the world's most advanced wave energy developer.



Founded in 1998, Pelamis Wave Power is based in Leith Docks, Edinburgh. Our dedicated engineering team are focused on reducing the cost of Pelamis energy.

PWP has a track record of significant achievements including:

- the world's **first** export of electricity from an offshore wave energy converter into an onshore grid network
- supply and commissioning of the world's **first** wave farm
- securing the UK's **first** and **only** commercial orders for wave energy converters from customers E.ON and ScottishPower Renewables
- an unrivalled pipeline of commercial projects, including customer led developments for Crown Estate leased sites

With experience at every stage of the project cycle, Pelamis Wave Power can carry out a range of services including resource assessment, project development, engineering design, manufacture & assembly and operations & maintenance.

For energy companies, utilities and their customers, Pelamis machines offer the ability to unlock an immense clean energy resource.



[www.pelamiswave.com](http://www.pelamiswave.com)

Pelamis Wave Power . 31 Bath Road . Edinburgh . EH6 7AH

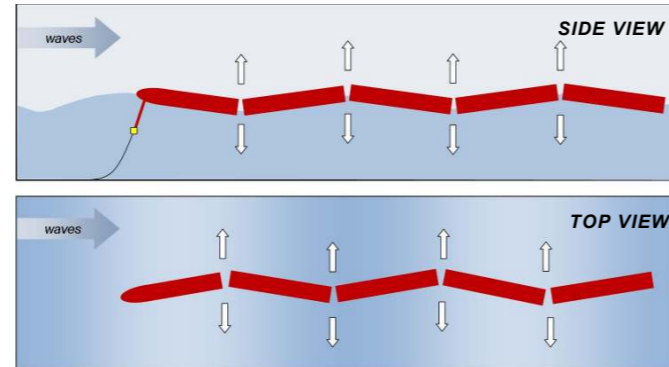


Tel: 0131 554 8444 Fax: 0131 554 8544 [enquiries@pelamiswave.com](mailto:enquiries@pelamiswave.com)



## THE PELAMIS absorbs the energy of ocean waves and converts it into clean, green electricity.

The Pelamis has five tube sections linked by hinged joints. Floating on the sea surface, incoming waves cause the tube sections to move relative to one another, causing bending movements at the joints of the machine. This movement is resisted by hydraulic cylinders which pump fluid into high pressure storage accumulators allowing electricity generation to be smooth and continuous. Hydraulic motors drive generators to produce electricity. All equipment is housed inside the machine and power is transmitted to shore using standard subsea cables. Several machines can be connected together and linked to shore through a single subsea cable.



### KEY FEATURES

- SURVIVABILITY**

The long, thin shape of the Pelamis means that as waves get higher, the small cross-sectional area and low drag profile allows it to progressively dive under the wave crests – much like a surfer dives through a wave. Pelamis responds to wave curvature, not height. Since waves naturally get longer as they get higher, this inherently limits the range of motion the machine must move through.

- POWER CAPTURE EFFICIENCY**

The patented joint configuration allows the response to be tuned to incoming waves to maximise generation in small seas while defaulting to minimised response in heavy seas. The Pelamis sections interact with each other to give a focussed beam of radiated waves that can capture the incidence waves much more effectively than a single body.

- DESIGN INDEPENDENTLY VERIFIED**

The design of the Pelamis and its anchoring systems are independently verified to meet relevant offshore oil & gas codes and standards.

- MODULAR MANUFACTURE USING 100% AVAILABLE TECHNOLOGY**

The Pelamis is an assembly of proven technology, supported by a scalable supply chain with capability to deliver components to specification, quality and time.

- MINIMAL OFFSHORE WORK**

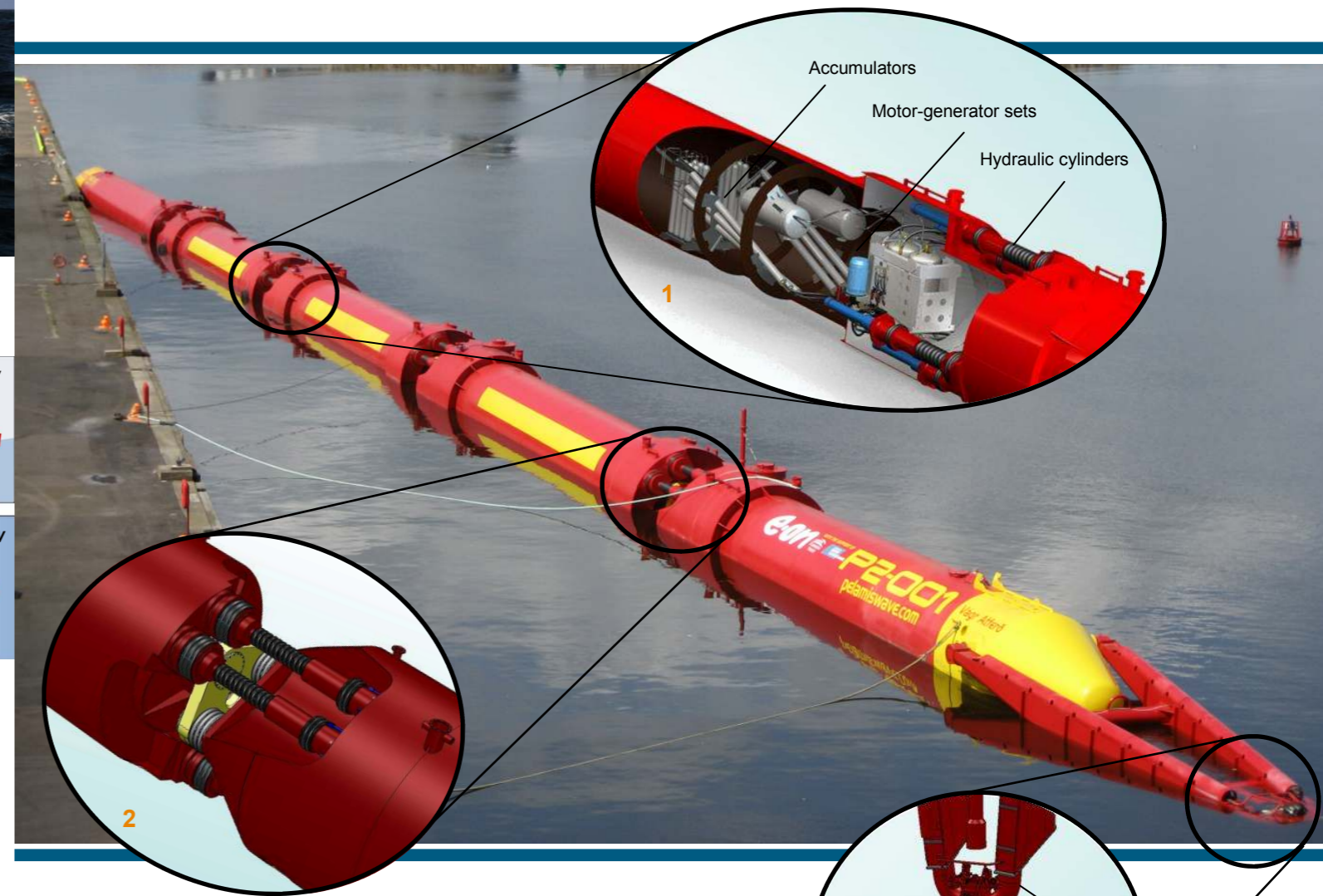
The Pelamis is manufactured, commissioned and maintained offsite in sheltered waters. A comprehensive remote monitoring and control system and patented rapid 'hands free' attachment and removal system is used to remove the need for manned access offshore.

- ENVIRONMENTALLY BENIGN**

The Pelamis is one of the most environmentally benign forms of electricity generation. The semi-submerged machine has a low visual profile.

## THE PELAMIS P2 is the second generation Pelamis Wave Energy Converter.

The P2 incorporates the extensive and unrivalled engineering, manufacturing and operational experience of the Pelamis Wave Power team accumulated over twelve years.



### SPECIFICATIONS

<b>Rated power:</b>	750kW
<b>Structure:</b>	180m long, 4m diameter, 1300te displacement (mostly ballast)
<b>Water depth:</b>	>50m
<b>Mooring type:</b>	Compliant, slack moored
<b>Conversion efficiency:</b>	~70%

#### 1. POWER MODULES

There are four independent power modules, one per joint. The power modules contain all the power take off and conversion equipment. All main components have inbuilt redundancy increasing fault tolerance.

#### 2. UNIVERSAL JOINTS

Each joint has two degrees of freedom with four hydraulic cylinders.

#### 3. MACHINE CONNECTION & ANCHORING SYSTEM

The machine is connected to its onsite anchoring and electrical systems via a rapid subsea attachment system located at the end of the yoke, which hangs vertically when the machine is installed. This allows the machine to be quickly and safely installed and removed on site in a range of sea states and using non-specialised vessels, enabling maintenance to be carried out at the quayside.

