

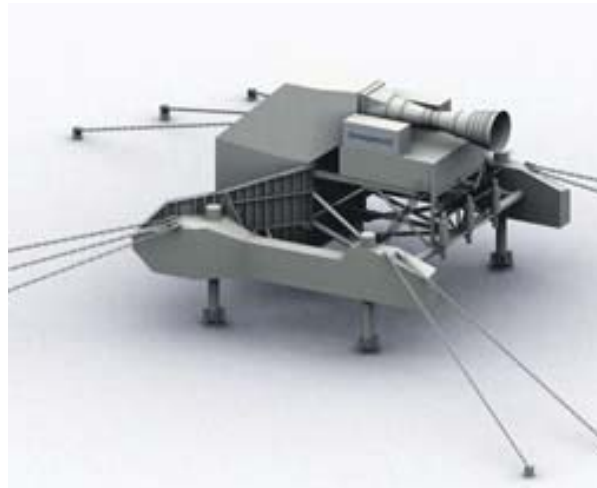
## port kembla project **faqs**

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### FACTS ABOUT THE PORT KEMBLA WAVE ENERGY PLANT

Weight:	485 tonnes
Size:	36 metres long 35 metres wide
Materials Used:	Structural steel
Position:	200 metres from Port Kembla Harbour breakwater
Noise:	73 decibels
Carbon/sulphur dioxide emissions:	nil



### WHAT DEVICE WILL BE INSTALLED AT THE PORT KEMBLA SITE AND HOW WILL IT WORK?

Energetech has worked collaboratively with **JP Kenny Pty Ltd** to successfully design a moored structure made of structural steel. The device and accompanying structure is designed to withstand a 1 in 100 year storm. [Click here to see an image \(located at the bottom of this page\)](#) which will give you an idea of what the plant will look like at the Port Kembla Site.

In brief, the system employs a parabolic wall to focus wave energy on to an Oscillating Water Column (OWC) chamber. The rising and falling motion of the waves causes an oscillatory water motion within the chamber, which in turn forces a high-speed airflow past a unique controllable turbine. The turbine drives an induction generator to produce electrical power.

System components are computer controlled to optimize energy conversion in a range of conditions and to automatically protect system components and ensure safety.

For more information about how the technology works, go the technology section of the [www.energetech.com.au](http://www.energetech.com.au) website

For more information about the research and development the company undertakes to optimise it's technology, go the research section of the [www.energetech.com.au](http://www.energetech.com.au) website

### **WHAT SORTS OF WAVE CONDITIONS ARE TYPICAL AT PORT KEMBLA?**

Typically waves at Port Kembla exceed 1m in height 63% of the time (producing greater than 110kW on these occasions), and exceed 2m in height 5.5% of the time (producing greater than 400 kW on these occasions).

### **HOW MUCH POWER WILL THE PORT KEMBLA WAVE ENERGY CONVERTER PRODUCE?**

The plant will be connected to the local power grid by an 11kV cable. After commissioning, the plant will supply useful power to up to 500 homes and serve as a valuable test facility for further technology development. 100% of energy produced is "clean" energy.

The energy will be purchased by local power utility – **Integral Energy** and sold to residents in the local community.

### **WHAT IS THE ENVIRONMENTAL BENEFIT TO THE LOCAL COMMUNITY?**

Energetech's Port Kembla Wave Energy plant alone is expected to result in the production of almost 1 GWh of clean electricity per year. Using the emissions factor of 0.95 kg CO<sub>2</sub> per kWh, the Port Kembla project will result in a reduction of greenhouse gas emissions in NSW (associated with the offset of electricity) of slightly less than 1000 tonnes per year.

The Australian Government MRET (Mandatory Renewable Energy Target) aims to provide Australian's with 9,500 gigawatthours of extra renewable electricity per year by 2010, enough power to meet the residential electricity needs of four million people.

Although the contribution of the Port Kembla Wave Energy plant to MRET seems minor, we should not underestimate the enormous benefit of this demonstration plant in relation to the future application of wave energy technology in other parts of NSW and Australia.

### **WHEN IS CONSTRUCTION EXPECTED TO BE COMPLETE?**

Construction is now complete. Most of the system components were manufactured and assembled off-site. They were then transported to the site and installed. The scheduled installation date of the Port Kembla Wave Energy Plant in to the ocean is April or May 2005, depending on weather conditions.

### **WHERE IS PORT KEMBLA?**

Port Kembla is part of the NSW Illawarra Region, approximately 100km south of Sydney, Australia.

### **ACKNOWLEDGEMENTS**

We wish to acknowledge the support of project partners. Each has provided invaluable assistance to the development and success of the Energetech project.

- Port Kembla Port Corporation
- NSW Department of Lands
- Wollongong City Council
- NSW Fisheries
- Integral Energy
- Australian Greenhouse Office