

MK3PC

Name of person filing the form

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Project name: Mk3 Pre-Commercial.

Company: Oceanlinx Ltd.

Project description:

Project Developer: Oceanlinx Ltd.

Technology type: Floating device, Oscillating Water Column

Project scale: single device

Installed capacity (MW): 2.5MW at full scale

Additional Description: The Mk3 Pre-Commercial, or Mk3PC for short, was a 1/3 scale demonstration device of the fully commercial blueWAVE design, but was designed to be limited in its life, operations, and scale to suit both the environment at Port Kembla and its purpose as a demonstration of the technology. The Mk3PC was installed at Port Kembla on 26 February 2010, about 100 metres off the eastern breakwater of Port Kembla Harbour. It was connected to the grid and provided electricity from 19 March to May 14 2010 to customers of local retailer, Integral Energy. The Mk3PC is believed to have been the first of its size in Australia to be grid connected, and one of the first in the world. While the MK3PC was designed for a shorter than normal life, it served the very important and specific function of verifying the performance of the Oceanlinx blueWAVE product in open ocean conditions, as well as its ability to provide acceptable grid-quality power to an established electricity retailer. The MK3PC immediately proved successful in achieving these aims, and validated the ability of the full scale blueWAVE design to be rated at 2.5 MW. Performance of test unit was certified by DNV.

Location: The device was located at Port Kembla Harbour, approximately 100km south of Sydney, Australia.
34°27'S 150°54'E

Process status: Test Completed and successfully connected to the grid for two months. Full scale commercial products developed from Mk3: blueWAVE, greenWAVE, airWAVE and ogWAVE.

Licensing information:

Since the installation of the Mk1 in Port Kembla in 2004, the State Government of NSW introduced a new planning approval process. Due to the location of the installation and the value of the project, assessment of the planning process was conducted under Part 5 of the Environmental Planning and Assessment Act, in conjunction with existing approvals from NSW Fisheries, Department of Lands Licence, and NSW Maritime Authority.

Environmental survey issues:

Baseline and project effects studies: Wave Dragon pre-commercial demonstration project				
General description		Environmental Statement		
Receptor	Study description	Design and methods	Results	Status
Physical environment	Water and sediment quality		Was not affected by the installation of the device.	
	Coastal processes (sediment fluxes, waves and tidal currents)		No perceptible effect as the site is a low energy environment (10kW/m) and the device is positioned just in front of the breakwater.	
	Onshore physical environment		Onshore physical environment consists of several breakwaters surrounding a large industrial site.	
Biological environment	Impact on designated sites		No designated sites in the area	
	Marine ecology		Low fish and fauna count on seabed, increasing amongst blocks that form breakwater.	
	Fish		Low fish and fauna count on seabed, increasing amongst blocks that form breakwater.	
	Electromagnetic fields		N/A	
	Marine mammals		Low fish and fauna count on seabed, increasing amongst blocks that form breakwater.	
	Onshore and intertidal ecology		the site is on the edge of a large industrial port, N/A	
	Birds		the site is on the edge of a large industrial port, N/A	
Human environment	Landscape and seascape		the site is on the edge of a large industrial port, N/A	
	Archaeology and cultural heritage		It was determined that there was no effect on archaeology and cultural heritage	
	Socio-economics		As a test platform this was N/A	
	Noise			
	Commercial fisheries		No commercial fishing in the area, some coastal angling from the adjacent breakwater.	
	Navigation:		The floating device had the	
	detailed navigation risk assessment		necessary aids to navigation and was positioned out of the navigation channel into the harbour. It was deemed that there would be no risk to local navigation.	

	Other relevant projects			
Reports or papers				
Research projects				
