

## ENVIRONMENTAL EFFECTS METADATA SURVEY FORM

Name of person updating the form

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Project name: Oceanlinx MK3

Planned  In Operation  Completed

Project description:

*Project Developer:* Oceanlinx Ltd.

*Technology Developer:* Oceanlinx Ltd.

*Technology type:* Floating device, Oscillating Water Column

*Resource (wave, tidal):* Wave

*Project scale (test site, prototype, array, commercial):* Single device, full-scale

*Installed capacity (MW):* 2.5 MW

*Project Website:* <http://www.oceanlinx.com/projects/past-projects/mk3-2010>

*Launch Date:* February 26, 2010

*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 certified by DNV.

Location:

*Ocean/Water body:*

*Closest city:* Port Kembla, approximately 100km south of Sydney, Australia.

*Country:* Australia

*Depth:*

*Coordinates:* -34.45°, 150.9°

**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 (brief description):** 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.

**Key Environmental issues:** *brief description on the most important environmental issues raised by the project (e.g. Sensitive species/habitats/areas that were of particular concern and/or received special protection) and how they were addressed.*

**Environmental webpage:** *link to project official environmental webpage (if available)*

Baseline studies and project effects studies: Oceanlinx MK3				
General description				
Receptor	Study description including question and/or objective (several can be listed per receptor)	Design and methods (brief description)	Results (brief description)	Status (planned, underway, completed, with dates)
Physical environment				
Benthos				
Fish and fisheries				
Large vertebrates				
Birds				
Marine uses / users				
Other* (can be named)				
<b>Reports or Papers</b>	(Key papers on the areas addressed should be listed here; when possible the files themselves can be made available in downloadable PDF format, alternatively links to the files or project website can be provided when available e.g. SeaGen.)			

<b>Research Projects</b>	(past or on-going environmental research projects at the site)
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<b>Monitoring and adaptive management: Oceanlinx MK3</b>				
<b>General description</b>		Environmental statement.		
<b>Receptor</b>	<b>Monitoring program description including question and/or objective</b> (several can be listed per receptor)	<b>Design and methods</b> (brief description)	<b>Results</b> (brief description)	<b>Status</b>
Physical Environment	Water and sediment quality	N/A	Was not affected by the installation of the device.	N/A
	Coastal processes (sediment fluxes, waves and tidal currents)	N/A	No perceptible effect as the site is a low energy environment (10kW/m) and the device is positioned in front of the breakwater.	N/A
	Onshore physical environment	N/A	Onshore physical environment consists of several breakwaters surrounding a large industrial site.	N/A
Biological environment	Impact on designated sites	N/A	No designated sites in the area.	N/A
	Marine ecology	N/A	Low fish and fauna count on seabed, increasing amongst blocks that form breakwater.	N/A
	Fish	N/A	Low fish and fauna count on seabed, increasing amongst blocks that form breakwater.	N/A
	Electromagnetic fields	N/A	N/A	N/A
	Marine mammals	N/A	Low fish and fauna count on seabed, increasing amongst blocks that form breakwater.	N/A
	Onshore and intertidal ecology	N/A	The site is on the edge of a large industrial port, N/A.	N/A
	Birds	N/A	The site is on the edge of a large industrial port, N/A.	N/A
Human environment	Landscape and seascape	N/A	The site is on the edge of a large industrial port, N/A.	N/A
	Archaeology and cultural heritage	N/A	It was determined that there was no effect on archaeology and cultural heritage.	N/A
	Socio-economics	N/A	As a test platform this was N/A.	N/A
	Noise	N/A	Acoustic tests determined that there were low noise levels with no predominant tone. Positioned in front of a large industrial port with a	N/A

			Coal hopper in the background, so the device was located in an existing high acoustic industrial environment.	
	Commercial fisheries	N/A	No commercial fishing in the area, some coastal angling from the adjacent breakwater.	N/A
	Navigation: detailed navigation risk assessment	N/A	The device sits on the seabed very close to the breakwater and in relatively shallow water, it was deemed that there would be no risk to local navigation.	N/A
<b>Reports or Papers</b>	N/A			
<b>Research Projects</b>	N/A			