
Wavegen®

Synergy Workshop

Relevant Wave Energy Technologies in the EU

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Company Background

- Founded by Professor Alan Wells FRS
- Raised and invested over £8m for technical development
- World leading patented technology
- Long term research collaboration
- EU and UK Government support
- 500kW shore line plant
- Built 3MW of plant
- Sustained power cost improvements

Facilities

Offices and Wave Tank Test Facility

Wave Power

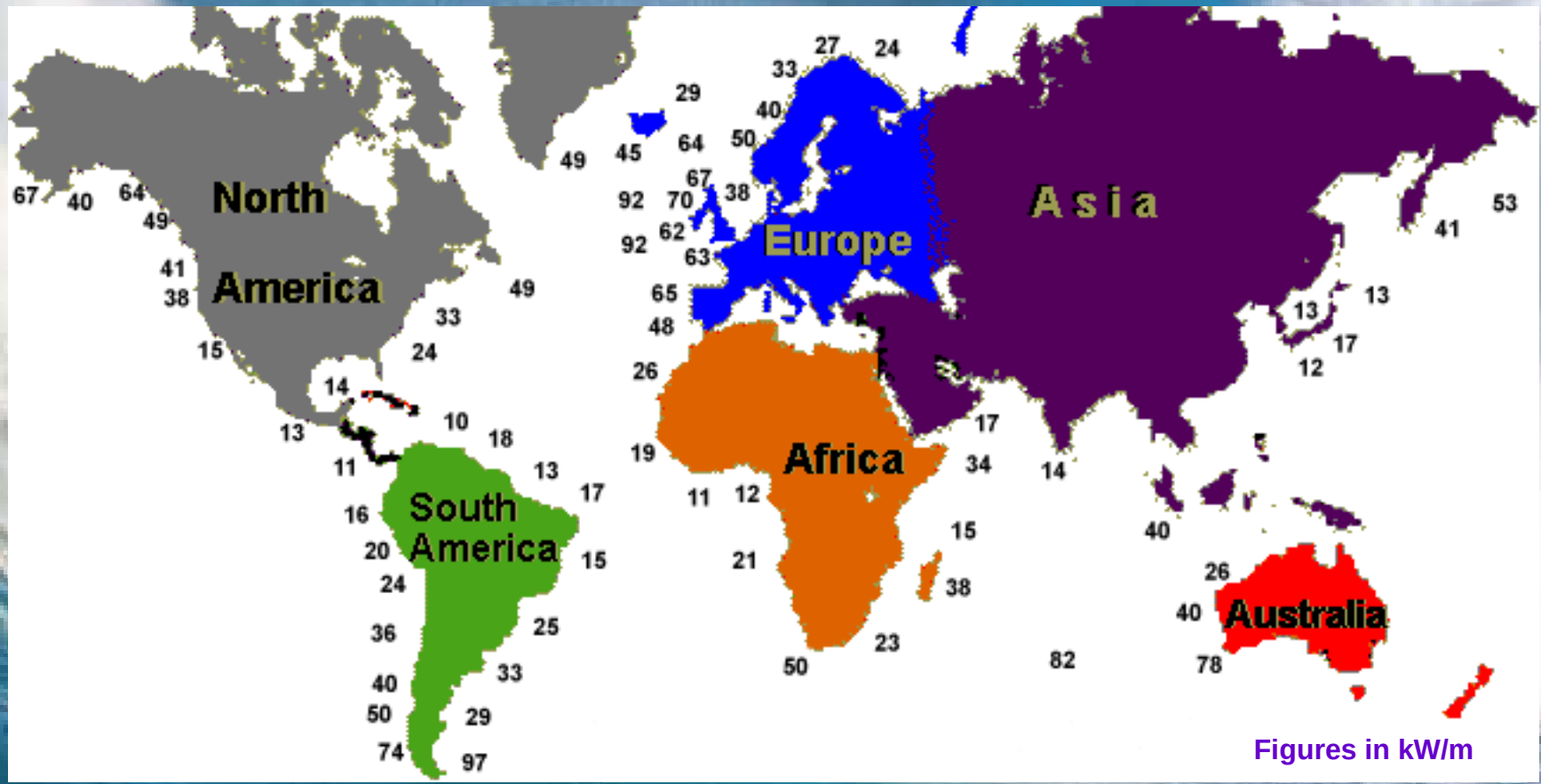
“It has been estimated that if less than 0.1% of the renewable energy available within the oceans could be converted to electricity it would satisfy the present world demand for energy more than 5 times over”.*

***Marine Foresight Panel.**

Wave Power

- No fuel
- Low noise
- Low visibility
- Large potential resource
- South Africa has excellent resource
- Local jobs

Wave Energy Distribution



Figures in kW/m

World Potential 400GW

Source: Wave Energy paper, IMechE, 1991

Classif.of Wave Power Systems

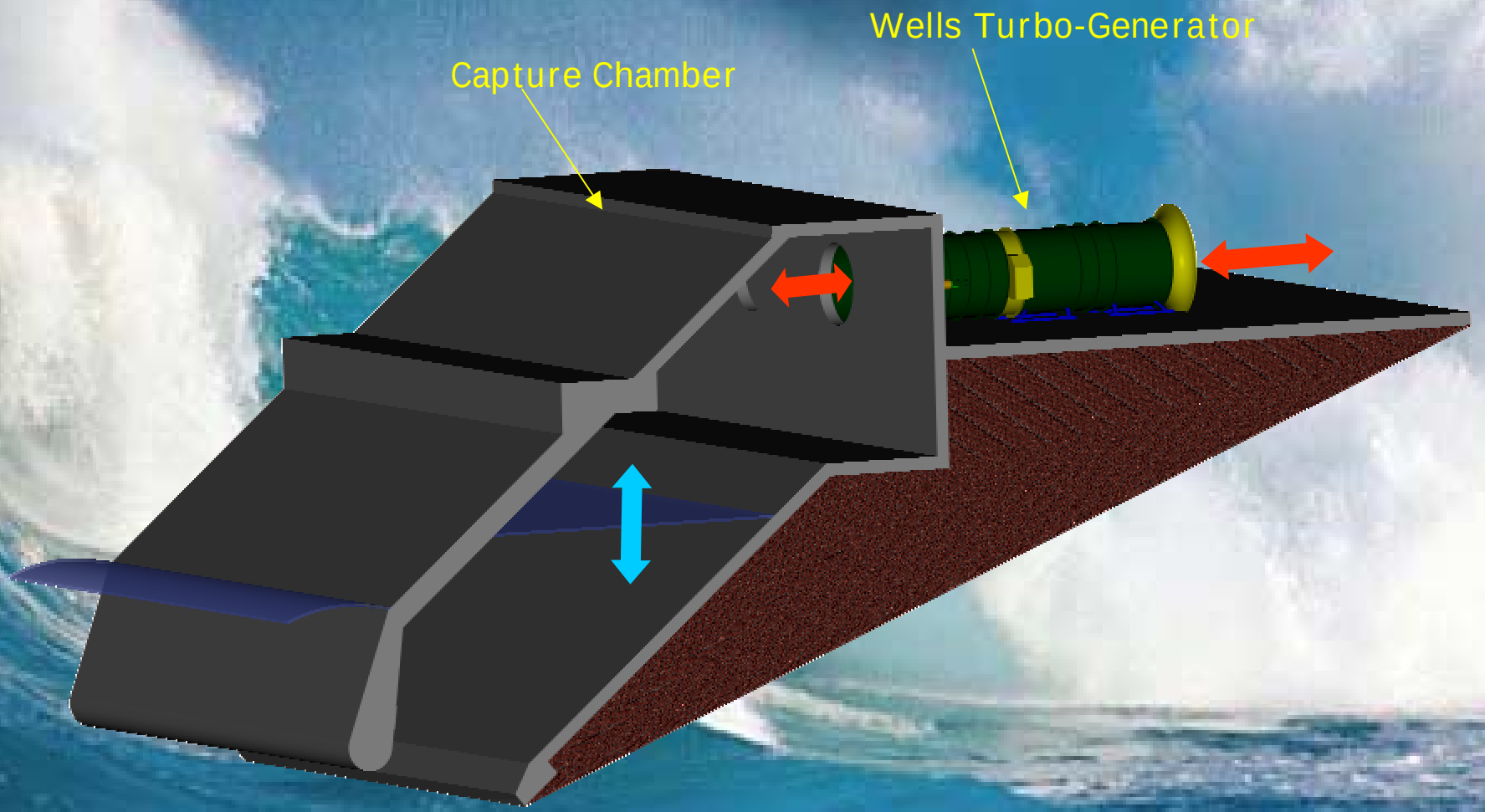
- A wide and diverse range of systems to convert wave energy into useable forms of energy exist.
- Mode of Response (e.g. heave, pitch & roll etc)
- Mooring System (tight, slack or fixed to shore etc)
- Geometry & Orientation

- Terminators
- Attenuators
- Point Absorbers

Systems

- Tapchan
- Floating systems
- Offshore systems
- Internal reaction
- Shoreline

LIMPET

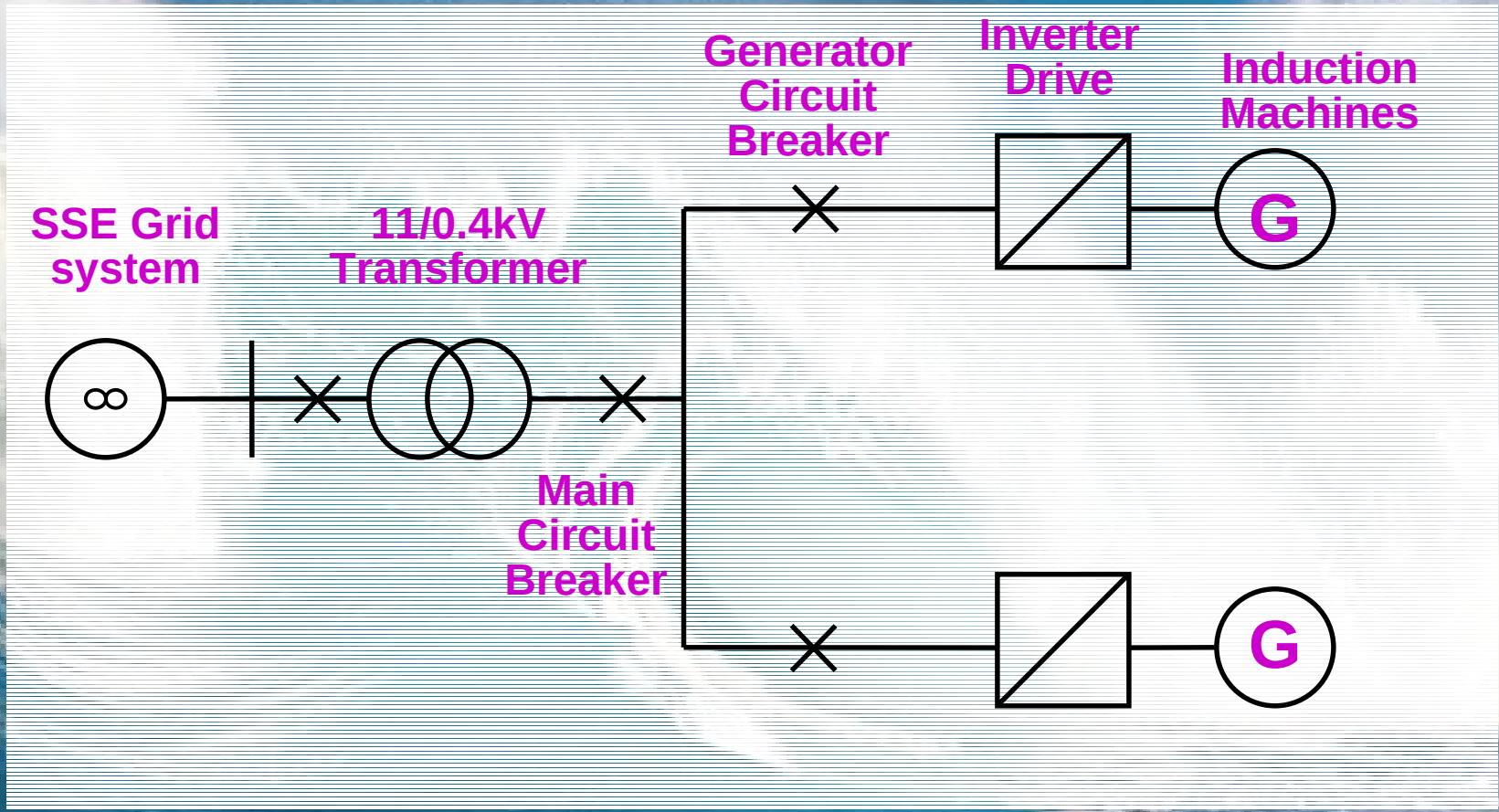


Experimental Device

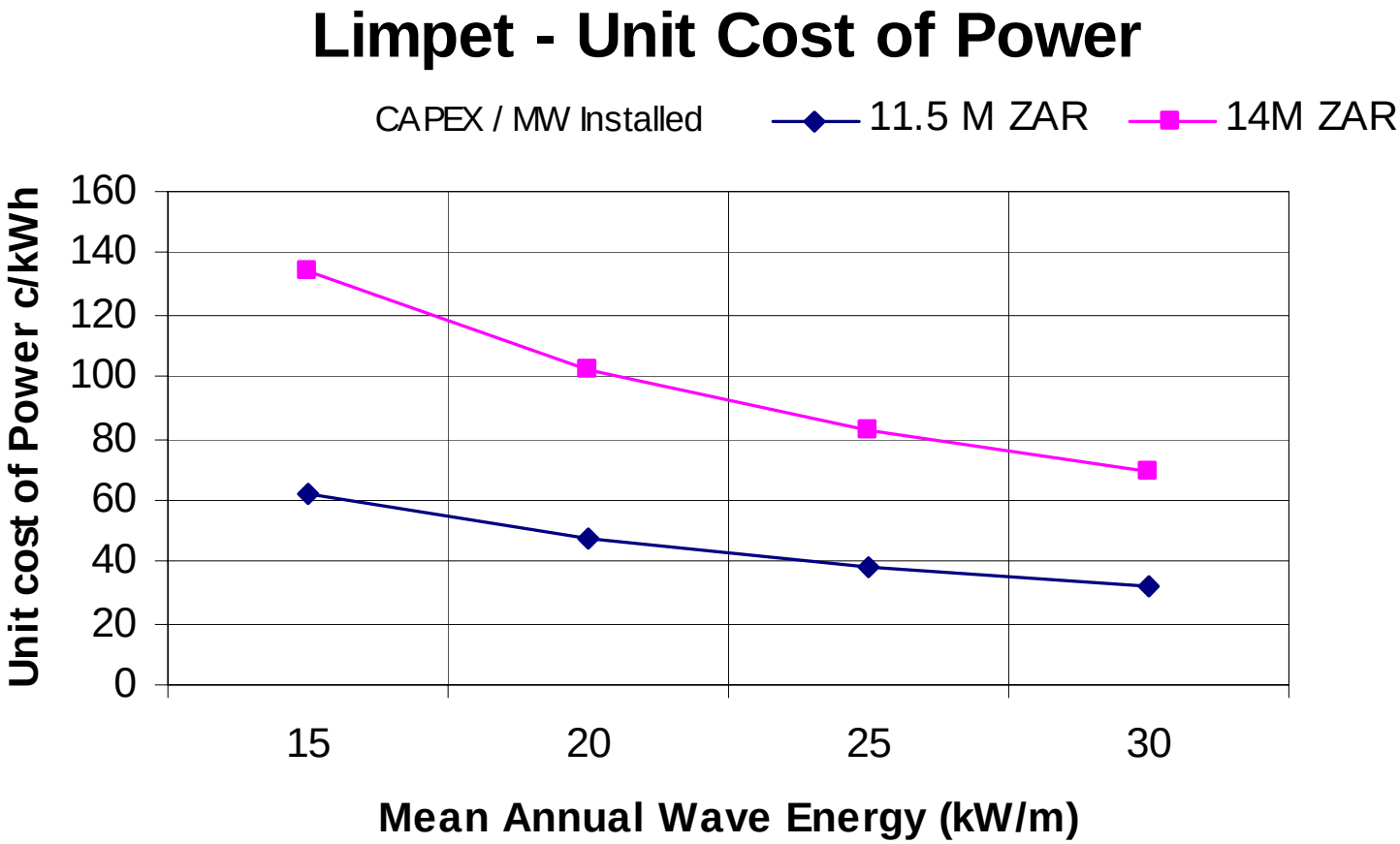
75 kW Device

LIMPET – Turbo-generation equipt

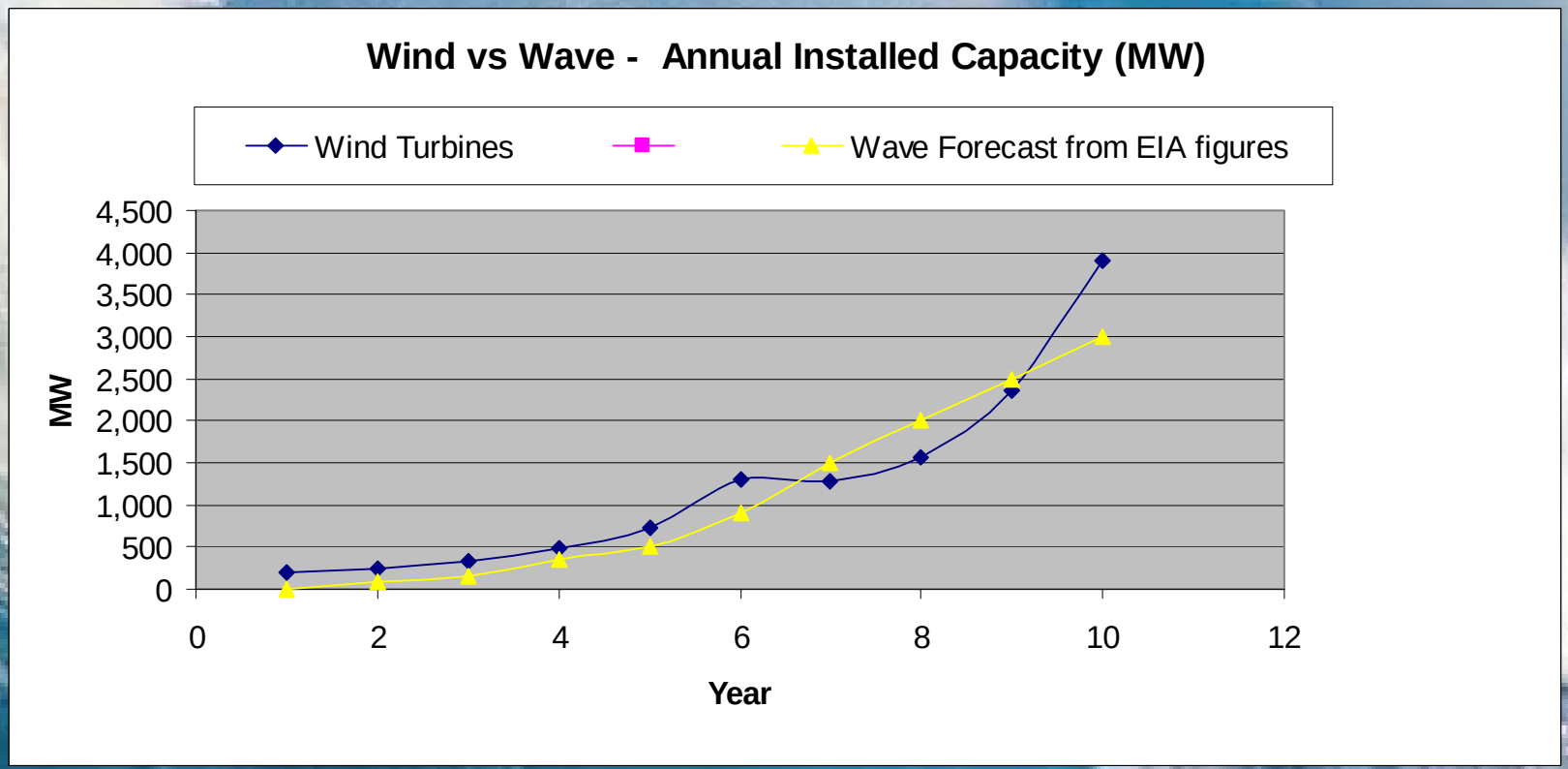
Electrical System



Power Costs


Limpet - Unit Cost of Power
CAPEX / MW Installed
11.5 M ZAR
14M ZAR
Unit cost of Power c/kWh
160
140
120
100
80
60
40
20
0
15
20
25
30
Mean Annual Wave Energy (kW/m)

Wave Power Market Growth



Overview

UK	- WAVEGEN LIMPET 500
	- Pelamis 375
	- Seapower Floating Pontoon
Portugal	- 400kW Shoreline OWC
	- Teamwork AWS
Denmark	- Danish float-pump
Sweden	- IPS Buoy - Hosepump
Eire	- McCabe Wave Pump
Norway	- Shoreline Tapered channel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