WAVE ENERGY PILOT

Eco Wave Power

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Efficient assessment of future sites for Wave Energy Converters

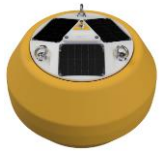
Problem statement:
There is a challenge of how to assess future sites of WEC's quickly and cheaply due to insufficient data between wave conditions and generated energy from WEC stations.

EWP's Iliad project:
Efficient assessment of future sites for Wave Energy Converters via wave sensor validation and correlating real-time sensor results with electricity generation.

Brief Description of the 100 kW Wave Energy Pilot

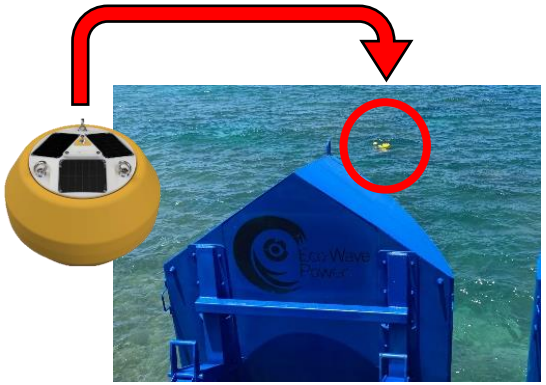
Location: Tel-Aviv Jaffa, Israel
System Capacity: 100 kW
Technology: Point absorbers with a hydraulic system.
Status: in-operation and sending electricity to the Israeli national electricity grid.

Data acquisition

On-site data acquisition	Remote data acquisition
Wave Buoy 	Satellite 
Wave Radar Module 	
Wave Radar Sensor 	
TalTech Hydromast 	

Data acquisition – On-site

WAVE BUOY	TalTech Hydromast V2.0 sensor	Wave radar module	Wave radar sensor
The buoy is deployed 15 m in front of the floaters above 4m deep water. The sensor is the 'Obscape OBS-*BUOY* 7W Wave Buoy' and can measure the directional wave spectrum, wave height, and period in real-time. It is a wireless sensor that sends the data via a cellular network.	The TalTech HydroMast sensor is a submerged sensor that is deployed 10 meters in front of the floaters at a depth of 2m. It is connected to the seafloor via a bolt and mounting assembly and provides real-time wave data to the site.	The wave radar delivers water level measurements and wave period data over periods of time. The sensor uses an ultrasonic sensor to measure the variations in the water levels which is then used by the wave energy station for its operational needs.	Wired radar sensor for real-time water level measurements. A cheap and reliable product.



Mounting frame design

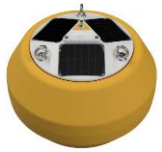
Data acquisition – Remote

Remote MetOcean data is available for purchase from across the globe however it has an error factor and doesn't correlate to production data from Wave Energy Converter stations.

Satellite data is being compared to on-site data measurements as well as production data.

Data infrastructure

Wave Buoy



Wave Radar Module

Wave Radar Sensor

TalTech Hydromast

Forecasting

OBSCAPE
ENVIRONMENTAL OBSERVATIONS

Iliad

Database

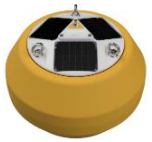
Data processing

Eco Wave Power

100 kW Wave Energy Converter:

- Automation system
- Storm Protection Mode Safety System

On-Site Data Acquisition

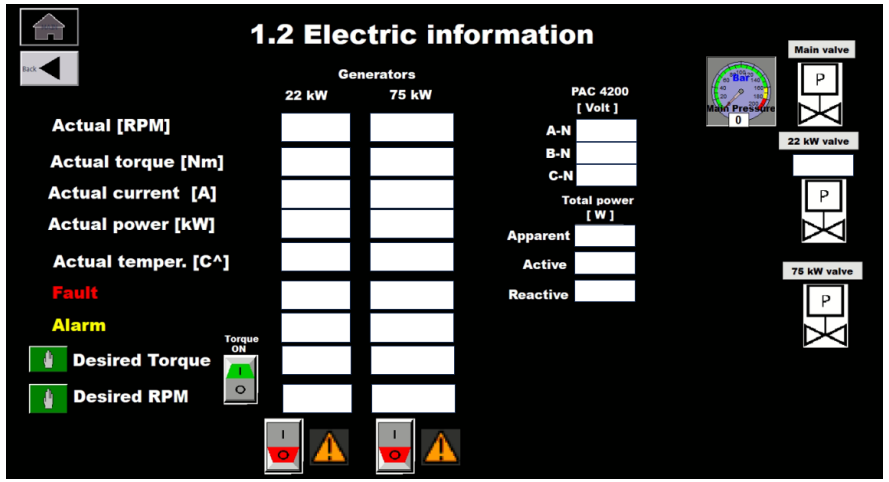
Wave Sensor	Results
Wave Radar Module 	✓
Wave Radar Sensor 	✓
Forecasting 	✓
TalTech Hydromast 	✗
Wave Buoy 	✗

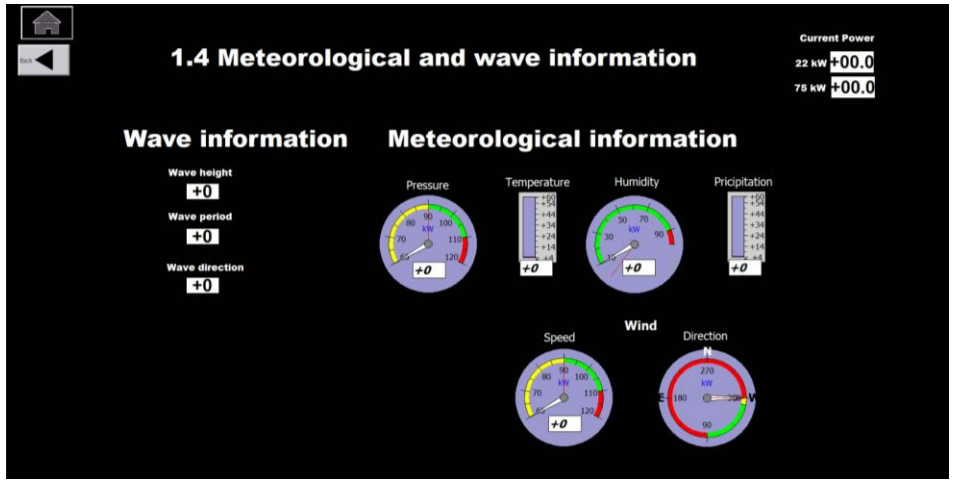
Visualization of the dashboard

Data for the Iliad Partners:

- EWP is developing a dashboard to process the on-site and remotely measured wave data and to match that with real production data.
- The wave data will be used to select future sites for the deployment of WEC systems.
- EWP will also use this data to control its 100kW Wave Energy Converter at Jaffa, Israel.

Dashboards of the 100kW WEC Pilot in Jaffa: The generated power will be recorded and matched with the data from the wave sensors.





End uses

Data for the Iliad Partners:

- Iliad partners can better determine future sites for wave energy converters by correlating remote and on-site measurements to potential energy production.
- The impact of this pilot is in developing novel renewable energy technologies and getting them closer to commercialization.
- The link to the UN Sustainable Goals are: