

# COASTAL PROCESSES IMPACT ASSESSMENT FOR IRELAND'S 'WESTWAVE' WAVE ENERGY TEST SITE

**Location:** Co. Clare, Ireland

**Project Dates:** August 2016 – October 2017

**Clients:** Electricity Supply Board of Ireland

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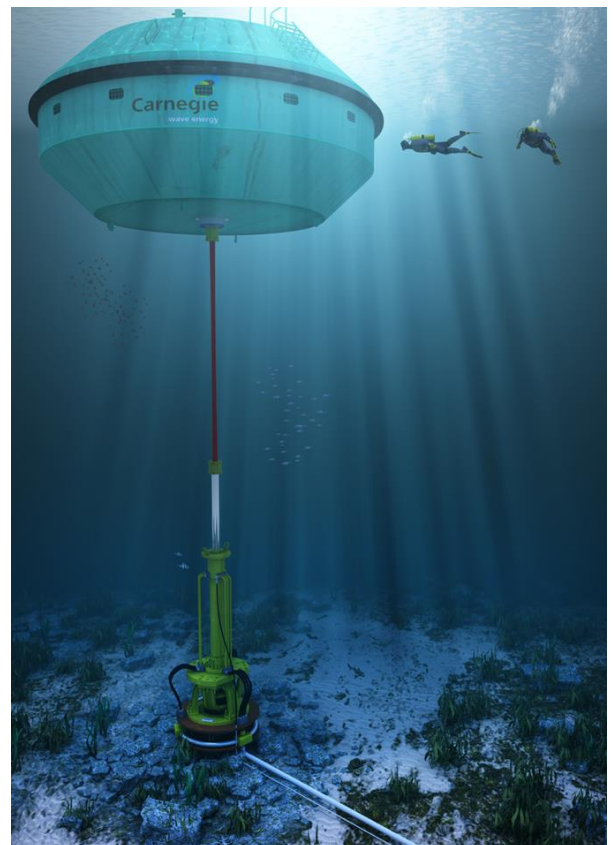
## Scope of work:

- Assessment of background wave climate and coastal processes
- Numerical modelling of nearshore wave conditions and tidal currents
- Numerical modelling of wave energy converters and potential wave shadow
- Numerical modelling of beach morphology under an altered wave climate

## PROJECT DESCRIPTION

Westwave aims to demonstrate that a pilot wave energy project can be designed, consented, developed and operated in Ireland using innovative wave energy conversion technologies. This study investigated the natural coastal processes at the Westwave site and provided an assessment of potential coastal impacts that may occur through the installation, operation, and decommissioning of Wave Energy Converters (WECs) at the site. A suite of models were used to simulate the effects of installation/decommissioning on sediment disturbance, and WEC operation on nearshore wave conditions, surfing wave quality, beach morphology, and profile response.

*Upper:* Example Wave Energy Converter technology that may be deployed at Westwave (image courtesy of Carnegie Wave Energy) *Lower:* A wave model scenario investigating potential wave shadowing from a WEC array at Westwave



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