

Title: Wave Energy and the Irish Construction Sector

Researcher: Paul O'Connor

Supervisor: Ken Thomas

Submission: August 2010

Purpose: The aim of this dissertation is to show how the Irish construction sector can benefit from diversifying into the wave energy market (WEM) in Ireland. Over the past twenty years, wind energy in Ireland has developed from a concept into a commercial entity and the same is anticipated for wave technology. With this renewable energy development, opportunities will arise with regard to the construction of infrastructure both on and offshore.

Methodology: A comprehensive literature review was carried out on the most up-to-date developments of the WEM both worldwide and particularly in relation to Ireland. The primary research was conducted through semi-structured interviews with the aim of establishing a clear link between the Irish construction sector and the WEM. In total, five interviews were undertaken with professionals from sustainable institutions, wave energy companies and electrical utility companies working within Ireland.

Findings: Ireland's greatest indigenous renewable resources are wind and wave energy which could prove to be more viable as offshore models. Therefore, all infrastructures such as roads, bridges, harbours, etc. need to be upgraded and developed to promote Ireland as a world leader in wave energy. However, a strong Government policy is required to support the current strategy. One of the major issues concerning Ireland's electrical generation is the country's dependency on foreign fuel imports such as gas and oil. To reduce capital spending and increase self-sufficiency, Ireland needs to avail of its indigenous natural resources. Wave energy will initially require Government support until the technologies are progressed sufficiently to generate electricity at a market rate. Such assistance will include Government grants and the revisiting of renewable energy feed-in tariff (REFIT) for devices. Tax reductions will need to be offered to construction or marine engineering companies developing any ocean energy infrastructure in Ireland. The national grid is a major issue and the development of Eirgrid's strategy Grid25 must be afforded both political and financial support.

Keywords: Wave Energy, Construction Sector, Ireland, Integration, Economical Benefits