



PRESS RELEASE

24 JANUARY 2014

ENGINEERING MODELLING BEGINS ON SWANSEA BAY TIDAL LAGOON

Tidal Lagoon Power Limited, the development company behind the proposed Swansea Bay Tidal Lagoon, has successfully completed two-dimensional physical model testing.

With planning applications due to be submitted shortly, a section of bund wall has been constructed to scale in a 1.2 metre deep flume at HR Wallingford in Oxfordshire. Tests included the stability of rock armour under various design conditions with different combinations of water levels and wave heights including wave overtopping and sea level rises resulting from climate change. The impact of storm waters was also be measured to ensure that the final design structure is optimised for long-term stability and safety.

As the world's first, man-made, energy-generating lagoon, with 240MW nominal rated capacity averaging 16 hours of generation every day, Swansea Bay Tidal Lagoon will provide clean, renewable, reliable and predictable power for over 120,000 homes (enough to power 70% of Swansea Bay's annual domestic electricity use) for over 120 years. It could be connected to the National Grid by 2018.

The development comprises a breakwater wall, concrete turbine housing similar to those found in many maritime structures, sluices and hydro turbines (whose reliability has been established for 50 years) as well as a visitor centre and associated onshore amenities. The hydro turbines will be installed in a single section of the outer reaches of the breakwater wall, through which estuarine water can flow four times daily to generate power. Although the Lagoon is the first of its kind, all component parts of the project have been proven elsewhere in the world, keeping technology risk low.

Ton Fijen, Engineering Director for Tidal Lagoon Power Limited explains: "The Severn Estuary holds the second highest tidal range in the world and within this Swansea Bay benefits from an average tidal range during spring tides of 8.5m. This tidal range offers significant potential for the extraction of renewable energy through the construction of tidal lagoons and is an exciting opportunity for Wales and the UK with the potential for over 10,000 MW of power from a series of five coastal tidal lagoons."

“Physical modelling remains the most reliable way to test conditions and that is why we are working with HR Wallingford as one of the world’s leading providers of analysis, advice and support for engineering and environmental hydraulics and the management of water.”

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Notes to editors:

Key Lagoon Statistics:

○ Rated capacity	240 MW*	○ Height of wall	5-20 m
○ Annual output (net)	420 GWh	○ Wall above low water	12 m
○ Design life	120 years	○ Wall above high water	3.5 m
○ Area enclosed	11.5 km ²	○ Tidal range Neaps	4.1 m
○ Length of wall	9.5 km	○ Tidal range Springs	8.5 m
*at 4.5m head			

Project Team

We have assembled a strong consortium of world leading providers to design and build the Lagoon and the project team has grown considerably in the last six months as both the planning and construction expertise has deepened:

ATKINS

Engineering
Turnover: £1.7bn

ALSTOM

Turbines & Engineering
Turnover: €21bn

Marine dredging
Turnover: €1.7bn

Van Oord

Marine ingenuity



Turbines & Engineering
Turnover: €5.7bn

VOITH



Construction
Turnover: £0.8bn

Electrical Engineers



Geotubes
Turnover: €1.1bn

TENCATE

materials that make a difference



Tidal renewable energy
developer founded by Mark
Shorrocks who has overseen
21 successful renewable
consents.

LD&DESIGN

Masterplanning and design

mace

Project Management

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