



MARINE ENERGY HAS THE POTENTIAL TO GENERATE 300GW AND POWER 350 MILLION HOUSEHOLDS BY 2050

The full potential to exploit offshore wind energy is only now becoming apparent. And marine energy has the potential to deliver 10% of electricity demand while unlocking a 100bn business. That was heard during a well-attended Masterclass at Europort 2019 in Rotterdam Ahoy.

Industrialised scale will be key if the innovative technologies currently developing at the margins of the offshore renewables sector are to help convert its still massive growth potential into reality, the 'Maritime solutions for offshore renewable energy' Masterclass at Rotterdam Ahoy heard in November. The session saw some of the leading innovators in offshore wind, wave power, tidal and other marine sources offer candid views on the real progress being made to reclaim more renewable energy. Chairman Reinder Jorritsma, Project developer at DOT BV, kicked off the masterclass by pointing to an EU working assumption that up to 10% of demand for electricity could in the future be satisfied by wave and tidal energy.

EARMARKED

Last September, the Minister of Economic Affairs has announced that they will develop a roadmap for marine energy to unlock its potential as a renewable energy source for the Netherlands. Next to contributing to generating clean electricity, marine energy can play a very important role in balancing the grid making the transition to a carbon free energy system possible. Moreover, the offshore and maritime sector can benefit from its large export potential. Britta Schaffmeister, Director at the Dutch Marine Energy Centre (DIMEC) offered an overview of up-and-running installations using not only wave and tidal energy, but salinity gradient technology and Ocean Thermal Energy Conversion. Marine energy should be closely considered for remote locations, while some solutions also doubled as protective barriers against rising sea levels, she

added. Schaffmeister said the sector has the potential to develop into a €100bn a year business, powering 350 million households by 2050 and generating 300GW of power.

DRAMATIC REDUCTION

The full potential to exploit offshore wind energy is also only now becoming apparent, meanwhile, according to Wouter Dirks, Manager R&D and Offshore, Van Oord Offshore Wind. "There has been a dramatic reduction in LCOE [Levelized Cost of Energy Calculation] in offshore wind," said Dirks. "Costs have come down from the equivalent of around €180 per MW/hr for a windfarm built in North Europe in 2010 to around €50 today, due to upscaling and to development of the supply chain. Will further upscaling reduce costs further? We think so." Turbines capable of generating 9.5MW of power per year were already being installed, with units that would generate 12MW not far behind. Dirks said the prospect of the 15MW offshore wind turbine was not far over the horizon. However, fast-approaching challenges included the capacity of cranes to lift turbine towers into position at sea, he added.

IN REALITY

Offshore wind installations often needed to prove themselves 'in reality' before they could expect backer buy-in, observed Clemens van der Nat, Manager Strategic Developments at Bluewater Energy Services, where other projects got the nod at the FEED stage. Nevertheless, Van der Nat also offered insights into the company's fast-developing TLP (tension leg platform) floating offshore wind turbine solution. New moves by the Scottish government to push forward with a consenting process for the BlueTEC Bluewater/Environmental Research Institute (University of the Highlands and Islands) consortium suggested a demonstration Bluewater TLP could be in position off north east Scotland by 2024.