



LAUNCH

FlanSea WAVE PIONEER
Wave energy converter

TUESDAY 23 APRIL 2013

VLIZ - Flanders Marine Institute
WANDELAARKAAI 7, B-8400 OOSTENDE
BELGIUM

PRESS RELEASE



Wave & Tidal Solutions



for food processing



Port Oostende



POWERED BY NATURE



E.ON



industrial automation solutions

FlanSea WAVE PIONEER | THE FORCE OF THE WAVES



FlanSea | Electricity from the Sea

FlanSea is a unique collaboration, set up with support from the Flemish Agency for Innovation by Science and Technology IWT, by the University of Ghent, the Ostend Port Authority "and a number of Flemish companies, including DEME Blue Energy, Cloostermans, Electrawinds, Spiromatic and Contec. Together they are developing the WAVE PIONEER, a wave energy converter. The WAVE PIONEER is a floating device generating energy from the swell of the waves. It was designed specifically for a moderate wave climate such as our Belgian coast.

On 23 April 2013, the FlanSea wave energy converter WAVE PIONEER will be launched at the Zeewezen Dock in the port of Ostend. After a few weeks the test device will be moved and installed at approximately 1 kilometre from the coast of Ostend. The WAVE PIONEER will be tested extensively until the end of 2013 in view of its further development.

Blue Energy

In order to meet the European objectives for 2020 with respect to renewable energy, Belgium needs to shift its electricity production towards renewable energy technology and, where possible, diversify its renewable energy portfolio.

Wave energy refers to the energy that can be tapped from the waves in the seas and oceans. This 'blue' energy technology perfectly complements the offshore wind projects already providing us with green energy today.



Countries enjoying substantial natural wave capacity (the United Kingdom, Portugal, Ireland, Japan, Australia, the US) are currently developing a different array of wave converters. Several test centres are operational in Europe: EMEC (UK), Wavehub (England), BIMEP (Spain), etc.

Various financing mechanisms are already in place to support this innovative, forward looking technology in these and other countries.



The FlanSea Consortium

Initiated by the University of Ghent a partnership was formed in 2010 with a number of Flemish enterprises (DEME Blue Energy, Electrawinds, Port of Ostend, Cloostermans, Spiromatic and Contec). Via DEME Blue Energy, on 31 March 2010 the consortium filed a project application with the IWT, who granted the FlanSea project a subsidy of EUR 2.4 million. The scheduled duration of the research project is three years.

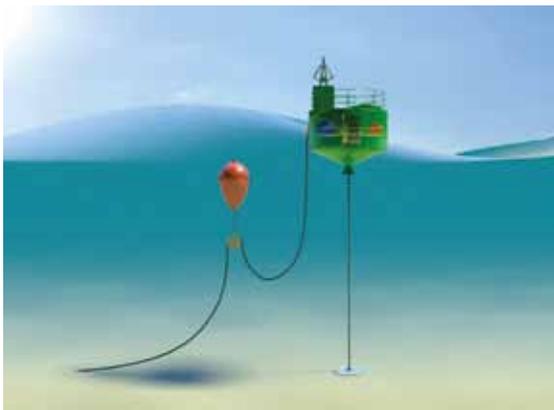
The WAVE PIONEER was built with efficient use of the diversity and knowledge of all the partners in the FlanSea project team.

Development and current status of the FlanSea project

During the first two years of the project, the expertise within the team has been directed towards conducting a thorough study (hydraulic, mechanical, electrical) of developing and building a wave energy converter, and conducting tests in laboratory and workshop conditions.

The WAVE PIONEER was completed in a step-by-step process, taking account of the usual phases of any complex product development programme. The first step involved the design of a concept, which was then tested at a scale of 1:10 (lab tests were performed at the Borgerhout Hydraulics Lab). The test set-up was then expanded and underwent a "dry" test at the assembly workshop.

Today we will be launching the first test device - scale 1:2 - of the current concept. In a few weeks' time, it will be moved and installed at 1 kilometre off the coast of Ostend, where it will be subject to a moderate wave climate. However, under stormy conditions the test site will act as a representative wave basin for a more offshore location at sea with rougher wave conditions. The test device will be equipped with ample measuring and recording tools to acquire better insight into production (efficiency) on the one hand and loads and strength on the other. In this context, survival potential of the wave energy converter is just as important as efficiency. The converter will not yet be connected to the electrical distribution grid in this phase.



Functionality (flexibility), materials used (sturdiness) and validation (measuring equipment) were focal points throughout the project. In view thereof additional tests were performed with a simplified float to gather information about certain mechanical components, such as the inlet piece (signs of wear), and all of the electrical components, including their driving mechanisms, were tested thoroughly in the lab and workshop before they were built into the buoy.

In the development of the wave energy converters, other designers and developers mainly concentrated their efforts on marine areas characterised by large waves, which produce a lot of wave energy. However, those marine zones are also breeding grounds for major violent storms. These storm waves bring large pressures to bear on the wave energy converters, thus placing high demands on structural strength and anchorage. FlanSea concentrates on more moderate wave climate zones, such as the southern part of the North Sea.

Operating Principle

The WAVE PIONEER is based on point absorber technology. A floating device that is anchored to the bottom of the sea by a cable follows the motion of the wave and converts the linear up- and downward movement into a rotational movement of the winch. Coupled to two separate engines that are fixed to the buoy and which also act as generators, the device thus converts the mechanical energy into electricity.

The future is green and blue

FlanSea aims at developing and producing robust and efficient wave energy converters for regions with a moderate wave climate.

In the long term it also intends to position these wave energy converters in the existing offshore wind farms. This would allow for optimum use of the scarce area at sea, enhance the production of electricity of the farms and enable the use of the infrastructure already in place for bringing the electricity to the shore. In all, it would result in useful synergies between both sources of renewable energy from wind and water.

The project also offers excellent opportunities for the development, production and exploitation of Flemish technology in our own and foreign waters, as well as for creating employment in the growing sector of renewable energy.

CONTACT

Ann Wittemans
Wittemans.ann@deme.be
03/210 67 94
0470/88 04 71

PROGRAMME / TUESDAY 23 APRIL 2013

08.30 WELCOME & BREAKFAST

09.00 INTRODUCTION

PRESENTATION OF FLANSEA PROJECT
HISTORY – LEARNINGS – NEXT STEPS

Joury Van Gijsegem – General Manager DEME Blue Energy

Herman De Dycker – Project Manager Cloostermans

Prof. Dr. Ir. Julien De Rouck – Departement Chair AWW, UGent

CLOSING REMARKS

Johan Vande Lanotte – Minister of Economy,
Consumer Affairs and the North Sea

10.30 OFFICIAL LAUNCH WAVE PIONEER

COMPANY PROFILES

Flansea
DEME Blue Energy
Cloostermans
Electrawinds
Spiromatic
Contec