Demonstration of a 1-MW wave energy converter integrated in an offshore wind turbine farm

Fact Sheet

Project Information

UPWAVE
Grant agreement ID: 691799

Status
Grant agreement terminated

Start date
1 February 2016
End date
31 January 2021

Funded under
H2020-EU.3.3.
H2020-EU.3.
H2020-EU.3.3.2.4.
H2020-EU.3.3.2.
H2020-EU.3.3.2.2.
H2020-EU.3.3.2.1.

Overall budget
€ 28 866 787.50

EU contribution
€ 20 722 489.88

Coordinated by
WAVE STAR AS
Denmark

Objective

The aim is to develop and install a pre-commercial wave energy converter (WEC) of 1MW power, the WAVESTAR C6-1000 device, with main targets the device industrialization and the demonstration of wind and wave energy applications. The utility company Parkwind, which develops, builds and operates wind farms in the North Sea, is committed to the achievement of WAVESTAR’s next development stage. Parkwind provides the installation site with grid connection for the first full-scale WAVESTAR WEC, located within a Belgian offshore wind farm. The UPWAVE project consortium has been developed through the establishment of strong
synergies and partnerships, by bringing together key European industrial players and European universities represented by wave energy experts whose overall objectives focus on:

1) Reduction of the device’s cost by introducing new design, components and materials. Cost optimization is achieved through new methods on deployment, installation, operation and maintenance.

2) Improvement of the energy efficiency by developing a more advanced Power Take Off based on a second generation digital hydraulic system and innovative control strategy.

3) Integration of wave energy converters in wind farms by considering the interaction between wave and wind devices in terms of operation, cost reduction and maximization of environmental benefits.

Public research programs, industrial cooperation and technology transfer from the offshore industry (offshore wind, oil and gas) ensure the development of manufacturing processes, automation and optimisation of the WAVESTAR C6-1000 WEC. New certificates and standards will be made available for the wave energy industry. After the completion of the UPWAVE project, the cost of wave energy will be significantly reduced to a level in line with the cost of offshore wind energy (around 15 c€/kWh). The WAVESTAR C6-1000 demonstrator device will lead to a commercial WEC and a hybrid renewable energy device (wind and wave).

Field of science

/ engineering and technology/environmental engineering/energy and fuels/fossil energy/gas
/ social sciences/sociology/industrial relations/automation
/ engineering and technology/environmental engineering/energy and fuels/renewable energy
/ engineering and technology/environmental engineering/energy and fuels/renewable energy/windpower
/ engineering and technology/environmental engineering/waste management/energy efficiency

Programme(s)

Topic(s)

Call for proposal

H2020-LCE-2015-2

Funding Scheme
## Funding Scheme

**IA - Innovation action**

### Coordinator

**WAVE STAR AS**

- **Address:** Alsion 2, 6400 Sonderborg, Denmark
- **Activity type:** Private for-profit entities (excluding Higher or Secondary Education Establishments)
- **EU contribution:** € 11 775 225

Contact the organisation

### Participants (8)

**AALBORG UNIVERSITET**

- **Address:** Fredrik Bajers Vej 7K, 9220 Aalborg, Denmark
- **Activity type:** Higher or Secondary Education Establishments
- **EU contribution:** € 359 246,25

Contact the organisation

**UNIVERSITEIT GENT**

- **Address:** Sint Pietersnieuwstraat 25, 9000 Gent, Belgium
- **Activity type:** Higher or Secondary Education Establishments
- **EU contribution:** € 394 577,50

Contact the organisation

**UNIVERSIDAD DE CANTABRIA**

- **Address:** Activity type
- **EU contribution:** € 277 305

Activity type
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<th>Country</th>
<th>EU Contribution</th>
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<tr>
<td>PARKWIND</td>
<td>Belgium</td>
<td>€ 1 277 640</td>
<td>Sint-maartenstraat 5 3000 Leuven</td>
<td>Private for-profit entities (excluding Higher or Secondary Education Establishments)</td>
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<td>CHANTIERS DE L'ATLANTIQUE</td>
<td>France</td>
<td>€ 706 183,63</td>
<td>Avenue Antoine Bourdelle 44600 Saint Nazaire</td>
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<td>IFP Energies nouvelles</td>
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<td>Avenue De Bois Preau 1 &amp; 4 92500 Rueil Malmaison</td>
<td>Research Organisations</td>
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<td>JAN DE NUL NV</td>
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<td>€ 4 917 150</td>
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DNV GL UK LIMITED
United Kingdom
€ 327 162,50

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30 Stamford Street 4Th Floor
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Contact the organisation

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Record number: 200258

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