



# Floating offshore wind combining cost-competitiveness and high local content

Demonstration and benchmarking  
of a floating wind turbine system  
for power generation in Atlantic deep waters



This project has received funding from the European Union's Seventh Programme for research, technological development and demonstration under grant agreement No 295977.

# FLOATGEN's objectives

- Proving the technical, economic and environmental feasibility of an EU technology floating system in deep waters
- Bringing wind energy applications closer to market in diverse European deep offshore areas
- Assessing the expected global generation cost per MWh in a 15-year perspective

## A Europe-wide industry-led partnership

FLOATGEN brings together 4 industry partners and 3 research partners.

**IDEOL** (Coordinator - FR): Design and engineering of the complete system (mooring, hull, umbilical) and supply of the wind turbine.

**ÉCOLE CENTRALE DE NANTES** (FR): Ocean engineering expertise and supply & monitoring of the test site (SEM-REV, located on the French Atlantic Coast) for the floating demonstrator.

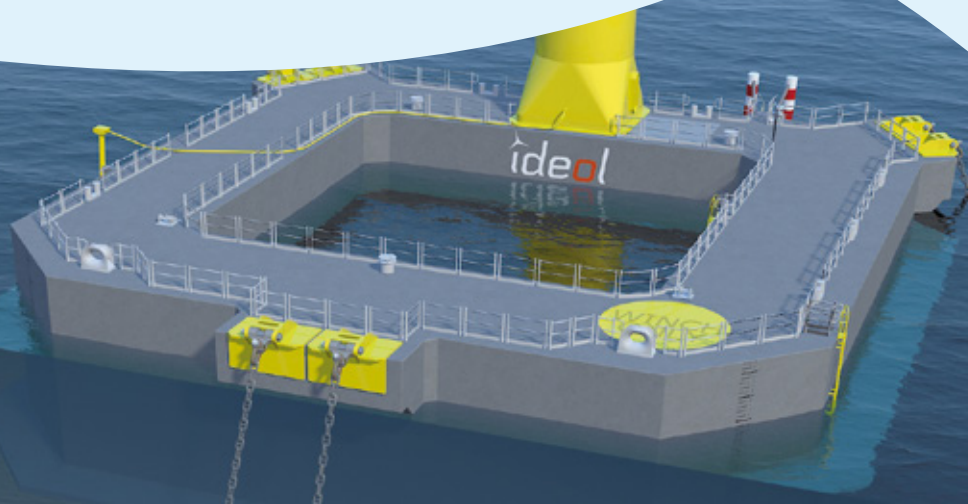
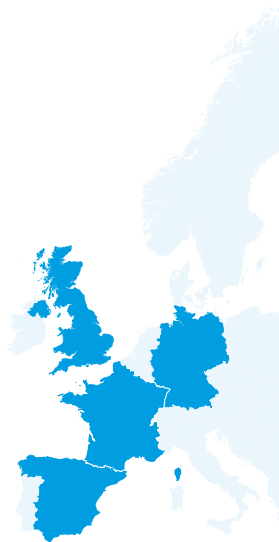
**BOUYGUES TRAVAUX PUBLICS** (FR): Construction of the floating foundation.

**UNIVERSITY OF STUTTGART** (DE): Contribution on coupled loads simulations and evaluation of measurement campaign.

**RSK GROUP** (UK): Analysis of the environmental impact of the floating system.

**ZABALA** (ES): Proper management and dissemination of the project.

**FRAUNHOFER-IWES** (DE): Benchmarking analysis between the proposed Floatgen system and other comparable floating solutions.



# FLOATGEN in operation



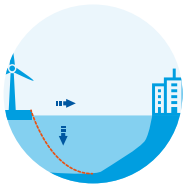
## ■ Floating foundation and wind turbine:

Ideol's Damping Pool® ring-shaped surface-floating platform and 2MW wind turbine



## ■ Installation site:

Installation on the world's 1<sup>st</sup> multiple MRE technology test site connected to the grid : SEM-REV, operated by Centrale Nantes at Le Croisic



## ■ Water depth and distance from the shore:

33 metres, 12 nautical miles from the shore (22 kilometers)



## ■ Environmental conditions:

Particularly challenging conditions with a maximum wave height ( $H_{max}$ ) of 16 meters

## ■ Timetable:

### 2013 > 2015

Design and engineering of the complete system (mooring, hull, umbilical)

### 2015

Implementation, in the offshore area, of a 1300-meter-long umbilical cable to export the electricity

### 2016 > 2017

Construction of the concrete floating foundation in Saint-Nazaire harbour by Bouygues Travaux Publics (80 workers on site)

Erection of the wind turbine onto the floater at quayside

Offshore pre-installation of the mooring system

Tugging of the floater/wind turbine assembly to the offshore installation site

Commissioning and connection to the grid

### 2017 > 2018

Demonstration period : monitoring, testing and validation of the outstanding performance of the entire floating system

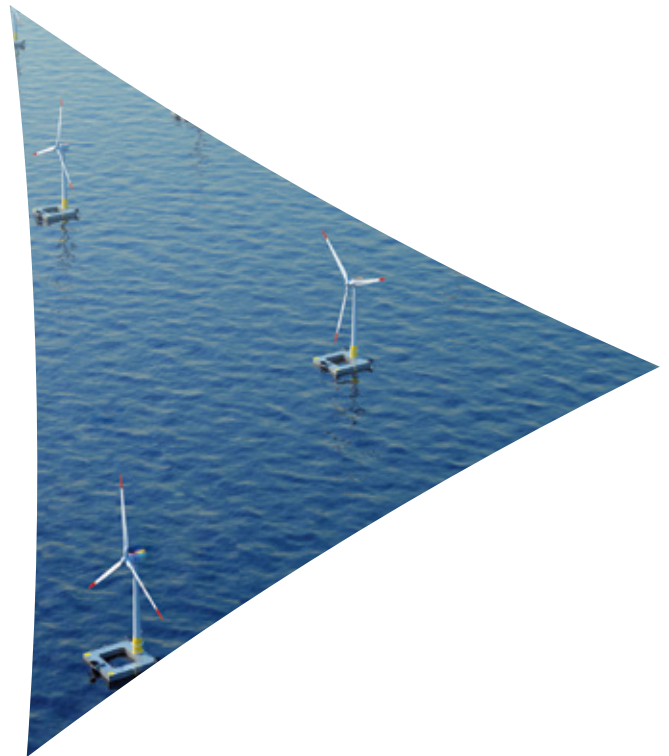
## FLOATGEN

*will be France's  
first offshore wind turbine*

# FLOATGEN *prefigures commercial floating offshore wind farms to be installed in the coming years*

## Applications:

- Demonstrate an innovative solution of multi-MW offshore wind turbine combined with a floating structure performing at deep waters over 33 m depth
- Define and validate appropriate methods and processes for the construction, installation, operation and access of the floating system
- Assess and validate its environmental impact
- Validate performance and cost of operation and maintenance
- Model a pathway for the reduction of energy cost from floating offshore WT system until cost values are comparable with fixed offshore wind structures and develop a roadmap
- Ensure replicability in other deep offshore locations and transfer knowledge through benchmarking activities.



[floatgen.eu](http://floatgen.eu)

 ideol

  
Centrale  
Nantes

 BOYGMES  
TRAVAUX PUBLICS



University of Stuttgart  
Germany

 RSK

 zabala  
Innovation consulting

 Fraunhofer  
IWES