

IPR analysis and strategy the developed system

Deliverable n° 8.14

EC-GA n°: 295977

Project full title: *Demonstration and benchmarking of a floating wind turbine system for power generation in Atlantic deep waters*

Deliverable N° 8.14

IPR analysis and strategy the developed system

WP: 8

WP leader: IDEOL

Task: 8.5 IPR management of new knowledge delivered by the project

Task leader: IDEOL

Due Date of Deliverable: 31/12/2017

Version: 1

Version date: 31/12/2017

Dissemination level: PU

Document history:

Version	Date	Main Modification	Written by	Checked by	Approved by
1	31/12/2017	First issue	BDU	BDU	PdIG

Brief Summary:

This document describes the management of Intellectual property rights of main Floatgen partners.

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	4
1.1 DOCUMENT REFERENCES.....	5
1.2 ACRONYMS	5
2. TASK: 8.5 IPR MANAGEMENT OF THE PROJECT	6
3. IDEOL	7
3.1 PROJECT RESULTS:	7
3.2 KNOW HOW BENEFITS	7
3.3 FUTURE REUSE	8
4. BOUYGUES	8
4.1 PROJECT RESULTS:	8
4.2 KNOW HOW BENEFITS	8
4.3 FUTURE REUSE	9
5. ECN.....	9
5.1 PROJECT RESULTS:	9
5.2 KNOW HOW BENEFITS	10
5.3 FUTURE REUSE	10
6. IP INTERFACE BETWEEN MAIN PARTNERS	11
APPENDICES	13

1. EXECUTIVE SUMMARY



FLOATGEN is co-financed by the European Commission's 7th Framework Programme for Research and Technological Innovation.

1.1 DOCUMENT REFERENCES

[D01] FLOATGEN_

[D02] FLOATGEN_

1.2 ACRONYMS

FWT	Floating Wind Turbine. The whole floating system producing power to the grid. In place it includes the wind turbine, the floating foundation, the mooring system and the umbilical system.
TRL	Technology Readiness Level

2. TASK: 8.5 IPR MANAGEMENT OF THE PROJECT

Work-Package 8 deals with two different types of activities, the dissemination issues (aiming at disseminating the project results and achieving the highest possible project impact and visibility) and the exploitation activities (aiming at paving the way for further industrialization and commercialization of the FLOATGEN results).

IDEOL coordinated the activities related to sorting out the IP situation related to the system solutions created for FLOATGEN.

The IP lawyers of the industrial partners will start with the assessment of pre-existing knowledge of the project partners, their potential contribution to the foreground project IP, and potential overlap of IP, a report shall be made to prepare the shaping of the IP strategy of the consortium. This will lead to an IP and exploitation agreement, as an amendment to the consortium agreement.

It will also be a relevant input for the exploitation roadmap. The document will be relevant in case of any conflict of interests.

Legal requirements for commercialisation :

This task covers in particular a “freedom to operate” analysis as well as individual patent filing strategies and drafting of patent applications for most promising project results. It also includes if necessary drafting of commercial agreements including joint venture, manufacturing, distribution and licensing agreements.

3. IDEOL

3.1 PROJECT RESULTS:

Floatgen is the 1st offshore wind turbine in France. All results achieved, know-how developed within this project and lesson learnt is going to be reuse by IDEOL to develop its technology and the industrialization of the solution.

Engineering, procurement, construction and installation of a real scale demonstrator certified by a class company.

3.2 KNOW HOW BENEFITS

- Coordination of the project
- Design complete loops
- Calculation models validation
- “Maitrise d’ouvrage” for floater construction
- Large procurement and logistics of equipment
- Procurement, transportation and refit of wind turbine
- Principal for offshore installation contractor
- As built dossier
- Certification of design and construction for floating foundation
- Certification of design for mooring system
- Budget and time schedule consolidation
- 1st offshore asset

3.3 FUTURE REUSE

4. BOUYGUES

4.1 PROJECT RESULTS:

- successful completion of the construction of the concrete floater, in accordance with the technical quality objectives (notably: validation of construction by the Certification authority; weight control targets and center of gravity position respected; quality of the interface floater / transition piece)
- validation of an innovative construction methodology (concrete structure built on a set of pre-assembled barges in floating condition; launching in a lock)
- validation of an innovative concrete formula (lightweight self-placing concrete)

4.2 KNOW HOW BENEFITS

- concrete floater construction in accordance with offshore standards,
- development of self-placing, lightweight concrete formula
- weight control processes during construction
- construction (on barge) and launching technique (in lock) for concrete caisson are now fully experienced and can be re-used on other projects

- development of a water tightness principle, validation of barriers by hydrotest prior to launching

4.3 FUTURE REUSE

- Project showcases the Damping Pool® technology, and BY intends to pursue the development in floating wind. Eolmed project undertaken by BY in association with Ideol and others is at development stage and involves 4 floaters to support 6MW turbines. The project builds upon the lessons learnt from Floatgen to improve the techniques and costs for concrete floater production. Beyond, commercial scale projects will also be of interest to deploy the technology and re-use the know-how developed on Floatgen.
- Several smaller-scale learnings from the construction of Floatgen, may be re-used by the company in the field of maritime works of marine concrete structures which is a significant part of the company portfolio of activity.

5. ECN

5.1 PROJECT RESULTS:

- Development, validation and use of Test Site Technical Specifications (in particular electrical connection)
- Development, validation and use of Test Site Environmental Management Plan
- Development, validation and use of Test Site Risk Management Plan (installation & operation procedures, state services interfaces)
- Development, validation and use of Test Site Control and Command System (hardware and software)

SEM-REV is fully operational and ready to welcome its 1st MRE Demonstrator on site.

5.2 KNOW HOW BENEFITS

- Supply of Mooring System: Specifications, VDB
- Mooring system pre-Installation: Specifications, VDB
- Innovative Subsea Connection System: Specifications, VDB
- 1st high power dynamic cable (5MW) in France: Specifications, VDB
- Electrical and optical testings

Through Floatgen project, ECN obtained an important feedback for targeting LCOE reduction (database) as well as to master contractual and legal framework for MRE Demonstration.

5.3 FUTURE REUSE

- Several locks for future offshore wind farms have already been identified
- Award winners of French floating pilot farms follow the path drawn by Floatgen
- Samples & Data for R&D projects (ABIOP, SPECIES, MHM-EMR, OMDYN)
- Initial / continuous training are being provided by ECN on many of these learnings
- Several topics have already been implemented in ECN strategy for supporting the MRE development and is already being applied within different calls for projects.
- Environmental & In service Monitoring
- Adaptation and validation of numerical design tools
- CAPEX (Technological bricks, performance optimization) & OPEX (Maintenance Methodology, prediction tools) Costs reduction

6. IP INTERFACE BETWEEN MAIN PARTNERS



FLOATGEN is co-financed by the European Commission's 7th Framework Programme for Research and Technological Innovation.

APPENDICES