

**Company: EDF**

**Project name: Provence Grand Large**

**Location: France**

**1. What are the technologies involved in this project (hydro, wind, grids, hybrid projects [e.g., agrisolar])?**

Provence Grand Large (PGL) is an innovative floating wind project of three 8.4 MW turbines, launched in 2011 by EDF Renewables and jointly sponsored by Mapple Power with the support of the European Commission, the French State and the regional council. It is located in the Mediterranean sea, at 16 km off the coast, on a 100m deep site. Its main purpose is to test a promising technology, known as tensioned leg platform (TLP). The electricity produced will be equivalent to the electricity consumption of 45.000 people. It should be commissioned in 2023 (subject to a court decision expected in the coming weeks - the project being actually under appeal).

**2. How did you take into account the relevant biodiversity and environmental protection legislation in this project? During which phase of the project were these considerations analysed and integrated into the project? Did you anticipate concerns around biodiversity and environmental protection for this project, and if so, what did that process look like and during which phase of the project did this occur ?**

As required by the French regulations a comprehensive set of environmental studies and campaigns at sea were carried out ahead of the project development, in consultation with the associations and experts concerned, to demonstrate that the project won't have major impacts on biodiversity. These studies have been conducted by several independent and specialised consulting engineers, under the steering of the project team on birds, marine mammals, fishes, habitats, etc.

The studies analyse the environment upfront the project implementation in order to anticipate its potential effects on biodiversity. After these analyses, several measures have been proposed by PGL to avoid, reduce, compensate or mitigate the impact and to better understand the marine environment, during the construction and operation phases.

To illustrate the effort, a very significant reduction measure will be applied during the operation phase and consists in shutting down the turbines for 500 hours on a yearly basis, and during the avifauna migration peaks (spring and fall). This pilot project should help answer some of the scientific community and local actors' questions by deploying *in situ* measurement. The three wind turbines will all be equipped with HD cameras to track the species that will pass near the machines and a bird deterrent system will also be put in place. It will be supplemented by conventional visual follow-ups, on a large scale (aircraft) and on a closer scale (boat).

At the same time, PGL has contributed to the emergence and the funding of major research programmes led by the Pôle Mer Méditerranée and the Office Français de la Biodiversité, in collaboration with the Parc Naturel Regional de Camargue, expert associations and scientists who are planning to deploy networks for observing birds and marine ecosystems on future floating wind turbines themselves. In addition, as part of the project's deployment, PGL has committed to participate in concrete actions to preserve biodiversity like financing species conservation measures or improvement of bird breeding conditions.

Provence Grand Large will significantly improve local environmental knowledge of commercial floating wind projects in the Mediterranean.

**3. What makes this project innovative?**

Provence Grand Large is innovative on two parts:

- Technically, with the utilisation of a floater with tension legs to anchor to the seabed. This will be the first time worldwide that wind turbines will be installed on floats of this type, with significant environmental advantages: no disturbance of the seabed since the anchors do not rub on the ground, and a footprint reduced to a few dozen metres around the wind turbine, compared with several hundred for existing technologies ;
- Environmentally, with several measures and surveys during the operation phase and with the deployment of birds deterrent system and observation system coupling radar and cameras by day and night. It will be the first offshore project in the world using this technology, not as a demonstrator, but as an operational system.

**4. Did you collaborate with stakeholders outside of your company (authorities, local communities, NGOs, etc.) and if yes, with whom? Can you describe your experiences with these external stakeholders? Were you able to integrate community concerns into this project?**

The Provence Grand Large team has paid particular attention to the inclusion of local stakeholders during the whole stage of development of the project, from its origin in 2010, to now (execution phase). Hundreds of meetings have been held to inform, discuss, and obtain advice from the stakeholders.

A “stakeholders committee” (“comité de liaison”, in French) has been created very soon in the life of the project and is still running (on February 2022 the 18<sup>th</sup> meeting of this committee was held). This committee is composed of fishermen, mayors, cities and metropole representatives, local wildlife protection associations, NGOs, managers of marine protected areas, employment agencies, etc. In 2014, a scientific committee has also been set up to identify the main issues and to develop a detailed environmental monitoring program for birds and marine wildlife.

As a symbolic example, the local fishermen's representative was recently interviewed by the media and answered that they support the project and were now waiting for its commissioning.

During the construction and operation phase, it is important to notice that the project is built on a local yard, with local suppliers and the environmental measures also involved local biological specialists to realize the surveys.

**5. How did data enable this project and what data did you collect? Of the collected data, what was provided to regulators and authorities as part of the permitting process?**

We collected data from surveys on each important compartment: birds, mammals, fishes, etc.

These data were used to estimate the impacts in the environmental impact assessment study and were also deposited on a governmental site dedicated to collecting this raw data. This project is thus a unique opportunity for scientists and environmental associations to improve their knowledge of the marine environment.

**6. Please describe the experiences surrounding the permitting process for this project, including any bottlenecks you faced:**

As a pilot project, and with no wind turbines previously installed in the Mediterranean sea, Provence Grand Large has been and is still scrutinised by all stakeholders, and the State’s services were very demanding during the instruction phase.

Despite the efforts made by PGL in order to design an “environmental friendly project”, and the strong support provided by most local stakeholders a local association decided to challenge one of the project

authorization, claiming that the 3 turbines will have an impact on birds. After almost 3 years of procedure to regularise our authorisations, a positive decision from the Court is expected soon.

**7. Please describe any permitting bottlenecks this project faced specific to land use change:**

We didn't face any permitting bottlenecks specific to land-use change.

**8. Did you receive public funding for this project? If so, please describe from which funding source (local, national, EU-level, international) and the application process you faced in attempting to secure this funding (including any special requirements conditional to the funding programme):**

The project indeed won 3 major calls for projects launched at the European, national and regional levels, and is *de facto* supported by French Government with specific public funds ("Programme d'Investissement d'Avenir – PIA"), by the NER300 European funds as well as the regional FEDER (structural funds).

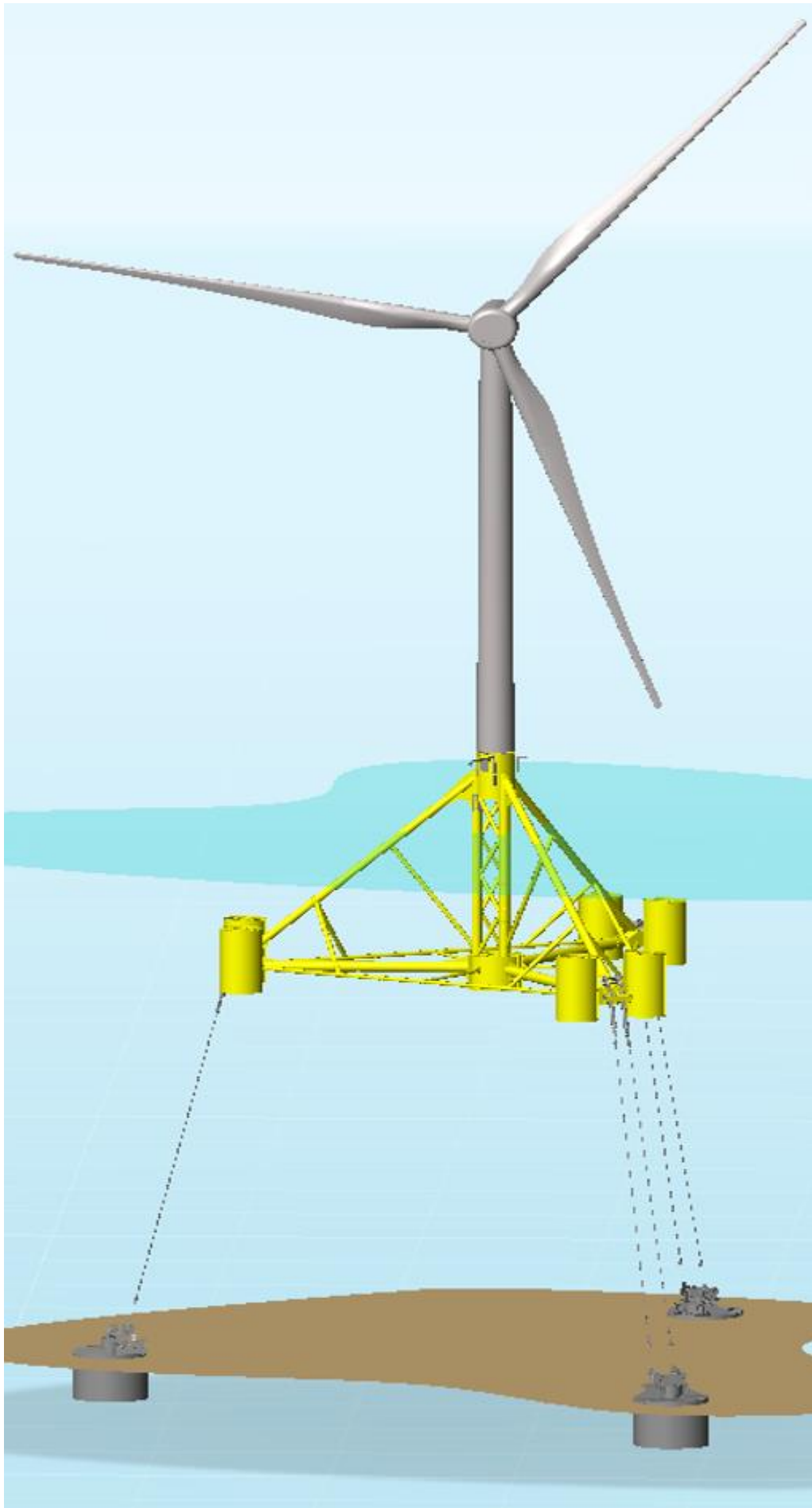
**9. Does this project regenerate previously degraded natural habitats or ecosystems? If so, how was this achieved or how did your company integrate this restoration into the project?**

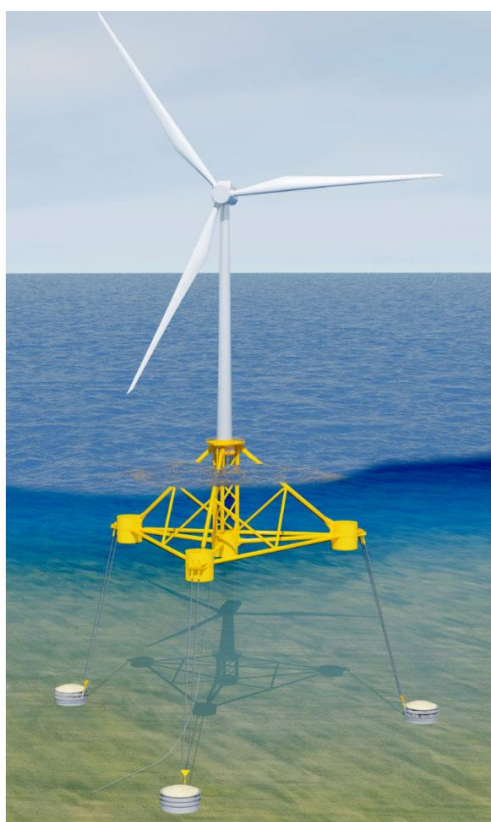
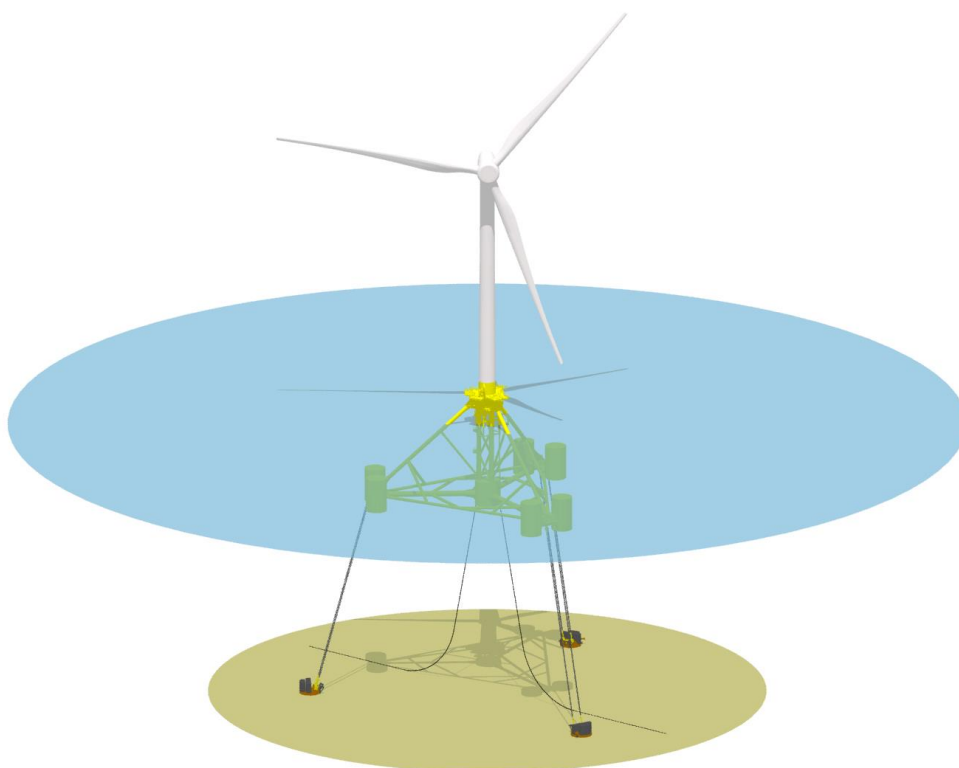
N/A

**10. If a previous project was found to be environmentally detrimental and your company was able to course correct to not only mitigate, but reverse the negative effects, how was this achieved?**

N/A

**17. Photos (if available):**





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