

SPECIES

Interactions of subsea power cables with benthic environments and associated monitoring



© Olivier Dugommier / Ifremer

DURATION : 44 months (2017-2020) | BUDGET : 1 025 k€

CONTEXT

In the context of the calls for tender launched by the French government for the installation and operation of offshore wind farms, the question of the impact of subsea power cables is regularly raised during the consultation phases. It is also a point carefully examined by the environmental authority which evaluates the regulatory impact studies of wind energy projects. **Although the direct impacts of electromagnetic fields and temperature emitted by the cables are often considered low by the scientific community, there is a lack of data from environmental monitoring of existing projects to answer these questions.**



TECHNOLOGIES

STAGES OF THE VALUE CHAIN



OBJECTIVE

Improve knowledge of the potential impacts of subsea power cables of marine renewable energy projects on coastal benthic ecosystems

MAIN ACHIEVEMENTS

- *In situ* characterisation of changes in electromagnetic fields and temperature
- Experimental and *in situ* characterisation of the impact of power cables on the benthos
- Assessment of the reef effect of submarine cables and associated structures
- Recommendations for future impact assessments

CONCLUSION

During the project, no major negative impact of submarine power cables on benthic ecosystems was found. However, the research effort initiated must be continued as certain issues remain insufficiently documented. The project was a real opportunity to develop and test tools for measuring electromagnetic fields at sea. It has also permitted to propose sampling and experimentation protocols and to formulate clear and effective recommendations for studying the effect of power cables on the invertebrate communities living on soft or rocky seabeds. These are summarised in a public report that will enable the industry to adopt appropriate management measures.

RESOURCES GENERATED

- Stationary device for static measurements of electromagnetic fields, deployable down to -50 m with enough autonomy for continuous operation over several days
- Database (electric and magnetic fields, temperature, animal and plant biodiversity, photos and videos)
- Public report with recommendations for monitoring and studying the impact of subsea power cables on benthic ecosystems

PARTNERS



This project has received € 397K from French State funding managed by the National Research Agency under the Investments for the Future Programme (ANR-10-IEED-0006-17).

