



ARPEGE



A realistic approach for generic fishing vessel

SHIPS OF THE FUTURE

Context

In a context of increasing global demand for seafood, the French fishing industry is facing major challenges, in particular the growing cost of energy, the large number of accidents, fishing quotas, the obligation to minimize the impact on fish stocks and difficulties in recruiting qualified staff.

Fishing boat architectures and technologies are over 30 years old and have shown their limits, in particular with the increases in the cost of fuel or the more restrictive regulatory framework (tonnage, length, installed power).

It is necessary therefore to now design and build new fishing boat concepts and validate them in real-life operating conditions so as to offer new opportunities to the sector and enable it to hold its own in what is a highly competitive European and global environment.

Objectives

The ARPEGE project provides for the industrial development of an innovative trawler concept (about 24 metres long), the construction of a full-scale demonstrator and its qualification in real operations over a period of 6 months.

It should become the new trawler standard for at least the next two decades.

This is a pre-industrial experimental project, based on a realistic and practical approach using technologies available in the short term.

As soon as this project is completed, this demonstrator must enable the development of a range of generic trawlers in the 20 to 25 metre segment. It will contribute to the renewal of an ageing fleet and the adaptation of this fleet to regulatory developments.

Implementation

The project is planned to be rolled out over 24 months, including 6 months of experimentation in real-life fishing conditions. The various stages in the project are:

- The design and development of the integrated energy management system;
- The development and integration of electrical fishing gear;
- The design and development of a system to prevent risks from undersea obstacles;
- The construction, fitting out and commissioning of the demonstrator

PROJECT SUPPORTED BY ADEME AS PART OF THE FUTURE VEHICLE PROJECT IN THE INVESTMENTS FOR THE FUTURE PROGRAMME

Duration: 2 years
Launch: October 2012
Total cost of the project: €8.2 M
Including PIA support: €2.0 M
Form of PIA support: subsidies and refundables grants
Location: Boulogne-sur-Mer (62)

Coordinator



Technical coordinator



Partners



Digital mockup of the boat

■ Expected results

ARPEGE is seeking to reduce energy consumption and lessen the environmental impact of fishing vessels.

Innovation

- Thanks in particular to the new hull shape, the diesel-electric propulsion system and integrated energy management, reduce consumption by at least 15% compared to the latest boats built (for seabed trawling) and by more than 40% compared to vessels using alternative fishing techniques such as the Danish seine technique;
- Acquire a technological leadership position, with the "sea-proven" concept of an electric diesel trawler, eventually enabling access to certain low carbon energies such as hydrogen.

Environment

- Make best use of fish stocks by offering a better quality and more sustainable fishing system.

Savings

- Keep French shipyards busy with a potential renewal market of 10 ships / year (in the 20 to 25 metre range);
- Improve fishing boat profitability.

Social

- Help keep the numbers of fishermen in the fishing industry stable and encourage new vocations among fishing crews by offering them easier and safer working conditions through access to the latest technologies;
- Reduce the number of accidents on ships.
- ARPEGE is positioned in France as the first electric diesel trawler concept in the less than 24 metre range. It also includes an architecture based on two propulsion shafts-lines and will be equipped with electrical fishing gear.

■ Applications and markets

The innovations in this trawler demonstrator project concerns the entire French fishing industry and should also be of interest to other European countries, in particular Spain and Ireland, but also countries South Mediterranean countries .

This project will enable shipyards, naval architects and equipment manufacturers in the sector to offer integrated, innovative, finalised and reliable solutions in what is a highly conservative environment.

It is planned to put new generation fishing boats on the market based on the ARPEGE demonstrator as soon as the project validation phase is completed.

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