Eco innovative refitting technologies and processes for shipbuilding industry

"THE EUROPEAN SHIP REPAIR AND CONVERSION SECTOR: FOR A SAFER AND CLEANER MARITIME TRANSPORT"

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Outlook
Environmental impact of shipping and shipbuilding industry has been becoming more visible.

European Shipyards facing the big challenge of continually reducing the environmental footprint of waterborne transport and operations.
Meeting new requirements of environmental protection, resulting from tightening of the law, is a great challenge for the shipyards.

Retrofitting options and environmental upgrades of existing vessels are expected to form an increasingly significant component of additional work within repair shipyards. Repair market is optimistic.
Europe is well positioned in the ship repair segment but competition is fierce and not fair.

Ship repair Industry is harmed by the lack of clear criteria for best available techniques. Supervisory authorities have difficulties in taking a decision about the use of the best available techniques by operators.
To meet the future needs of the shipping industry the ship-repair sector must be prepared to carry out a **new range of environmental related enhancement work.**

**Urge to optimize management** and **enhance technical innovation** to secure a safer position.
Enhance retrofitting shipyard process through eco-innovation to strengthen the competitiveness of the European maritime industry, and in particular of the repair shipyards.
Eco-REFITEC is a 3 year collaborative R&D project, which started on the 1st January 2011.

Funded under the European Commission’s Seventh Framework Programme (up to 2.5 million €)

to Strength European competitiveness of the Shipbuilding Industry and to reduce the environmental footprint of waterborne transport and operations

through innovative and cost effective processes. Especially in the area on Green technologies.
13 partners/9 countries
Objectives

- Evaluate the introduction of **eco-innovative processes, materials and modules** in the repair and conversion and retrofit of ships.

- **Support implementation** of current and impending regulatory emission and pollution reduction measures in existing vessels

- Develop a **life cycle view**: including assessment of cost, safety, and environmental impact

- **Emission assessment** through IT tools on the planning stage of particular ship repair, retrofit, and conversion

- to develop a **specialized package tools** for enabling the involvement of SMEs in eco-innovation.
Strengthening European competitiveness through exploitation of the potential of eco-innovation.

In summary the Goal is to support repair shipyards and ship operators in performing a refitting of existing vessels through technological development and new tools, helping shipping benchmark their performance, improving the retrofit processes and products, and assessing environmental and life cycle cost impact.
WP1. Shipyards opportunities & challenges regarding “greening” existing fleet.

Setting technical and environmental objectives for different cases studies

WP2: Development of eco-innovation retrofitting practices & Data Base

WP3. Design tools for evaluation and management of eco-innovation retrofit processes and life-cycle analysis.

WP4. Shipyards Management of Eco innovative retrofitting process.

Eco innovative retrofitting process selection for different cases studies: Technical, economical, and environmental viability analysis

WP5. Life cycle cost impact of “greening” of existing vessels.

Validation for different cases studies

WP6. Dissemination and exploitation of the project results.
A set of **case studies** shall be applied across ship repair activities in order to develop eco-innovative technologies with a neutral environmental impact to comply with the new IMO regulations.

Development of **cost effective solutions** at least in the following areas:

- Emission control and
- Ballast water management
Eco-REFITEC expects to provide a significant progress in application of Information Technologies in the Repair Shipyards and SMEs, enabling the following novel methods, tools, and products:

- An innovative method to analyze and optimize retrofit process, materials and equipments to be used in repair shipyards with respect to environmental pollution and availability;

- the development of innovative software/frameworks: a Data base of eco-innovative retrofitting practices, a Life cycle cost performance model for existing ships after a retrofit, and a Retrofit Management performance model.
Eco-REFITEC intends to "map" the eco-innovation knowledge. A data base of eco-innovation retrofitting practices, embedded in a web based application, is being developed within the project.
Another benefit of the project will come from providing ship repairers, operators and SMEs with a tool to aid in the keen selection of a process or product, in order to favor the least environmental burdensome alternative, while additionally being able to assess the cost-effectiveness of each option.
Finally, As a regulatory framework has to be developed stimulating the application of green technology, this project will try to provide “policy-makers” with information base, tools and guidelines to support the development of new requirements for existing fleet based on ship life cycle improvement. This project try to provide as well, a breakthrough for existing fleet in meeting current and future IMO requirements.
THANK YOU FOR YOUR ATTENTION

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