

Call for the identification of a PHD research project

1. GENERAL BACKGROUND

Fincantieri is one of the world's largest shipbuilding groups and number one for diversification and innovation. It is leader in cruise ship design and construction and a reference player in all high-tech shipbuilding industry sectors, from naval to offshore vessels, from high-complexity special vessels and ferries to mega yachts, as well as in ship repairs and conversions, production of systems and mechanical and electrical component equipment and after-sales services.

In our vision, the sustainability of processes and products needs to be evaluated with a **holistic approach**, having in mind the whole **life cycle**, taking into account the relevant approaches informed by the circular-economy paradigm.

Circular economy means an economic model in which the value of products, materials and resources is maintained as long as possible, and the waste production is minimized.

Recently, this approach has become more and more important, overhauling entire industries, and becoming essential in several areas:

- **Design:** by developing eco-designed and modular solutions, for increasing circularity and limiting the single-use use of materials and products. This aimed at extending the lifetime of the products, also allowing their upgrading, refurbishment or regeneration and an increasing use of recycled materials. This includes also the efficient and sustainable management of end-of-life / dismantling of ships.
- **Production:** by introducing innovative models for procurement of recycled and reusable resources including materials to be used in production.
- **Waste management:** by developing industrial innovative solutions specifically designed for managing and re-using waste products and materials. This entails developing new solutions and products producing a limited quantity of waste, enhancing efficient waste materials sorting and recycling processes and reverse logistic approaches in order to increase the volume of reusable materials at the end-of-life.
- **End of life management:** by devising strategies and technical solutions to maximize the reuse of materials obtained from dismantling vessels at their end of life.

2. AIMS OF THE CALL

In the marine sector, replicating this approach is very challenging due to the peculiar complexity of ships, which are built by billions of different parts and components. This is the reason why we are now looking for establishing new partnerships aiming at developing coherent and robust methodologies for evaluating and assessing models and approaches, which will allow us to evaluate how to better translate circularity in our products and processes, by blending the way in which we operate when designing and building our products.

To set our sails towards this important goal, we plan to **fund a PhD project**, which we will be co-supervising in partnership with **academic institutions and/or research centres**, with the goal of helping us assessing the status quo in our sector and decide where and how to act by e.g.:

- **Assessing the current level of maturity and experience of the most relevant players** involved in the whole merchant-ship building-process value chain (e.g. designers, suppliers, equipment manufacturers and technology providers, shipyards, classification societies, etc.).
- **Identifying the most relevant and high-value areas** to be investigated monitored and developed in order to increase the sustainability and recyclability of materials and components used along the whole life cycle of the ship, and when it reaches its end-of-life and/or undergoes any major refitting.
- **Proposing a simple and reliable methodology** for conducting life cycle and carbon footprint analysis applicable to both existing ships and new buildings in order to establish easily base line for monitoring future developments. The methodology should be applicable to several kind of merchant ships (e.g. cargo, passenger, etc.) built in the last 40 years.
- **Suggesting the most relevant tools supporting the analysis** and the implementation of circular economy logics to the cruise-ship sector.
- **Pinpointing the most relevant tools** a shipbuilding company should have in order to increase the level of **recycled and reusable materials** through the entire product's life cycle
- **Defining cost-effective scenarios** concerning the current status quo and the future developments in the maritime sector.

3. INDICATIONS, TERMS AND PROCEDURES FOR SUBMITTING APPLICATIONS

We call to any prospective PhD student who are interested in the topic of circular economy applied to the shipbuilding industry to submit a short project proposal abstract (400 words maximum, written in English, excluding references to relevant literature) and a detailed project proposal abstract (6000 words maximum, written in English, excluding references to relevant literature).

Abstracts should be sent, accompanied by a CV, the application duly filled and signed and a statement of research interests from the PI that would supervise the project, at this address: innovation@fincantieri.it, by May 7th at 23:59 CET.

The applicant must adhere to the schedule and submit their application on time. Late submission will not be considered.

4. EVALUATION CRITERIA FOR PROJECT PROPOSALS

Fincantieri will select the best [10] abstracts, by evaluating:

- the relevance of the project for our sector,
- the capability of linking it with the value creation process in the shipbuilding industry, and
- the academic record of the applicant.

Selected applicants will have to submit a detailed description of their project (including inter alia a justification as to why their project would practically help our industry in adopting a circular economy approach) and present it to our team.

It is understood that all the materials submitted by any applicant cannot be returned in any case.

The perspective supervisor will be invited to submit a statement on the terms that would be proposed by the hosting institution (with specific reference to intellectual property, confidentiality, funds required, diversity and social responsibility), to attend the presentation and present their opinion.

5. RECIPIENTS AND TERMS OF CONTRIBUTION

Fincantieri will fund the winning project, provided that mutually agreeable terms will be found between the company, the candidate, and the hosting institution.

In issuing this call, there is no implied obligation whatsoever for Fincantieri to award and/or enter into any relationship with any applicant whether in relation to this call or otherwise. Fincantieri will be entitled at its sole discretion to select any project submitted by any applicant to this call.

6. DECLARATIONS AND UNDERTAKINGS BY THE APPLICANT

The applicant must ensure that the application, including all design and work submitted, does not infringe the intellectual property rights of any third party. In any case Fincantieri will not be responsible for any such infringement and any applicant found to have infringed third party intellectual property rights will be disqualified immediately.

The applicant undertakes to comply with the principles of the Code of Conduct and the Organisational, Management and Control Model pursuant to Italian Legislative Decree no. 231/2001 adopted by Fincantieri, published and publicly available on the website www.fincantieri.com. Any applicant found to have breached the abovementioned documents will be disqualified immediately.

The applicant acknowledges and agrees that the final decision about which project will be chosen will remain in any case under Fincantieri's sole discretion, that Fincantieri will not have any duty to explain its reasoning.

All matters and disputes arising out of or relating to the call are subject to the final decision of Fincantieri.

The applicant agrees not to make any claim or bring any action against Fincantieri and members of the judging panel for any reason whatsoever, or otherwise seek to recover from Fincantieri and members of the judging panel, any costs incurred in relation to the call or any lost expectation of opportunities or any other benefits which the applicant may expect to accrue from participating to the call.

7. INFORMATION AND ADVERTISING

Fincantieri reserves the right to revise the rules of the call without prior announcement and to withdraw at any time the call. This document is available on Fincantieri website: <http://www.fincantieri.com/>.

8. APPLICABLE LAW AND JURISDICTION

This call shall be governed and construed in accordance with the Italian law.

All matters, disputes, controversies and claims arising out of or relating to these call shall be settled through the Court of Trieste.