Low -environmental impact technologies aimed to energy production on board of naval vessels

Reduction of environmental impact and decarbonisation are two of the most complex technological challenges that our industry faces, but they are crucial topics for future global sustainability. Fincantieri has always been focused on these topics and continues to study innovative solutions to generate and distribute energy on board of cruise vessels, ferries and mega-yachts. For this reason, several projects aim at promoting the systems' electrification and at finding new sustainable energy vectors.

The most relevant project focusing on these topics carries out investigation and prototyping activities to target enabling technologies towards a more efficient and cleaner way to produce energy. Such technologies will be tested on an *ad hoc* laboratory ship of approximately 25 meters long that will be built in our Castellammare's shipyard. The vessel will be equipped with electric propellers, powered by a Fuel Cell plant of about 120kW and a battery system able to guarantee about six hours of zero-emission navigation. Tanks with metal hydrides will be used to stock about 50kg of hydrogen. Zeus ship will be the first unity exclusively propelled by Fuel Cell. This project represents a first step towards large-scale industrial applications and futuristic on-board installations on cruise vessels.

The project is being run in co-operation between Fincantieri and Isotta Fraschini Motori, CNR, ENR, RINa, Universities of Genoa, Naples and Palermo. Moreover, partners are engaged in an active and constant dialogue with the Italian Ministry of Infrastructures and Transport to check that, during each phase of the project, the laboratory ship is compliant with minimum safety requirements for national navigation.