

INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

INDIGO: Pioneering Passenger Ship Decarbonisation Platform: Retrofitting for Enhanced Operational Efficiency and Emissions Reduction

The Innovation Fund is 100% funded by the EU Emissions Trading System

| Project Factsheet

The project will retrofit a large passenger cruise ship, Enchanted Princess®, with a safe and cost-effective energy system tailored for medium-speed engines that enable the flexible use of Renewable Fuels of Non-Biological Origin (RFNBO), such as e-methanol. The platform is expected to improve engine load management, optimise engine configuration, and significantly reduce emissions by integrating battery storage and an electric start system. The combination of e-methanol, hybridisation, energy efficiency and shore power is projected to lead to an overall reduction in greenhouse gas (GHG) emissions of 74% compared to the use of traditional marine fuels. It is also projected to reduce key air pollutants by up to 99% for sulfur oxides, 70% for nitrogen oxides, and 85% for particulates.

INDIGO sets a new standard in the maritime industry by integrating electrification, renewable energy, and low-carbon fuels in large passenger vessels. This approach extends ship lifecycles and supports the flexible adoption of sustainable fuel systems and

COORDINATOR

PRINCESS CRUISE LINES LTD

LOCATION

Italy

CATEGORY

Mobility (MOB)

SECTOR

Maritime

AMOUNT OF INNOVATION FUND GRANT

EUR 54,100,000

EXPECTED GHG EMISSIONS AVOIDANCE

564,341 tonnes CO₂ equivalent

STARTING DATE

01 May, 2024

FINANCIAL CLOSE DATE

30 November, 2025

ENTRY INTO OPERATION DATE

31 December, 2026

CALL NAME

InnovFund-2023-NZT

* Calculated vs. the 2021-2025 ETS benchmark of 6.84 tCO₂e/tH₂, not taking into account additional carbon abatement due to substitution effects in the H₂ end use application, i.e. conservative estimate.

hybrid energy management. This platform is designed to be replicable, fostering the broader adoption of RFNBO fuels across the maritime sector.

The project will help reach the targets of the FuelEU Maritime regulation by enabling the uptake of alternative fuels like e-methanol and next-generation hybrid technologies as they become commercially available. It is also in line with the European Green Deal and REPowerEU initiatives, each requiring the transition to sustainable energy sources.

INDIGO provides a scalable emissions reduction model applicable to over 300 in-service cruise passenger ships and other vessel types. By 2035, the combined GHG emissions reduction is projected to be over 7.5 million tonnes. The initiative also creates a steady demand for RFNBO fuels and supports shipyards, technology providers, and investments in bunkering infrastructure. The project is expected to create over 85 direct and 160 indirect jobs, strengthening the European industrial ecosystem, fostering economic growth, and advancing low-carbon maritime technologies.

| Participants

PRINCESS CRUISE LINES LTD

United States

Additional information on the [EU Funding and Tenders Portal](#).