

# INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

## Re-Tyre CO2: Sustainable Recycling of waste tyres through a CO2-saving pyrolytic process: production of new alternative fuel, carbon black and circular gas utilization

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

### | Project Factsheet

Re-Tyre CO2 introduces an innovative, low-carbon technology to recycle end-of-life tyres. The new facility will be a state-of-the-art pyrolysis plant able to transform such tyres into aviation fuel, recycled carbon black, and gas (used to power the plant itself). Re-Tyre CO2 is expected to achieve a 117% relative greenhouse gas (GHG) emissions avoidance compared to the conventional production and combustion of aviation kerosene and the traditional virgin carbon black production methods.

The project employs an optimised low-temperature pyrolysis method to maximise tyre-derived oil yields and produce alternative aviation kerosene, desulphurised diesel and recovered carbon black. Unlike conventional facilities that primarily produce raw oil, Re-Tyre CO2 integrates all processing and refining steps into one location, delivering a streamlined and efficient operation. Operating at lower temperatures improves oil yields and enhances product quality. The project is set to produce 2 631 840 kilograms of kerosene annually, enough to power approximately

#### COORDINATOR

SARAS SPA - RAFFINERIE SARDE

#### LOCATION

Italy

#### CATEGORY

Energy intensive industries (EII)

#### SECTOR

Refineries

#### AMOUNT OF INNOVATION FUND GRANT

EUR 9,309,027

#### EXPECTED GHG EMISSIONS AVOIDANCE

104,077 tonnes CO2 equivalent

#### STARTING DATE

01 April, 2025

#### FINANCIAL CLOSE DATE

30 September, 2027

#### ENTRY INTO OPERATION DATE

31 March, 2029

#### 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.

260 000 kilometres of flights—or 6.5 trips around the world along the equator. The project's GHG savings arise from diverting end-of-life tyres away from energy recovery applications and repurposing them into low-carbon fuels and recovered carbon black.

By converting waste tyres into valuable resources through a pyrolysis-based recycling process, the project supports European objectives for reducing industrial emissions, improving air quality, and advancing the circular economy. Additionally, it promotes the production of sustainable fuels, especially for the aviation sector, enhancing sustainable transportation and energy security in alignment with Europe's zero-pollution ambitions. The project also contributes to economic recovery and sustainable growth, complementing the goals of the NextGenerationEU package.

Situated in the Macchiareddu Industrial Area in Cagliari, Sardinia, Re-Tyre CO2 reinforces the local and regional economy by fostering business clusters focused on recycling and sustainable technologies. It enables the upcycling of over 10 000 tonnes of end-of-life tyres annually, avoiding costly and environmentally harmful waste exports off the island. The project generates local value through multiple channels: it engages local contractors, driving economic activity during the development and construction phase. It leverages local technological expertise and a skilled workforce for plant maintenance, monitoring, and management during operation. Additionally, the versatility of the pyrolysis process, coupled with the valorisation of the three output products, can be replicated in other plants.

## | Participants

**SARAS SPA - RAFFINERIE SARDE**

Italy

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