



INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

AGGREGACO2: Fabrication of CO2 negative AGGREGates based on disruptive accelerated carbonation processes fuelled by carbon capture in refineries

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

| Project Factsheet

AGGREGACO2 project targets the aggregates industry for a revolution through the successful commercial deployment of a sustainable aggregate as a solid alternative of conventional aggregates not fully environment-friendly. The AGGREGACO2 proposes a FOAK innovation through the introduction of CO2 captured of refinery processes in an Accelerated Carbonation Technology (ACT), that revalorise Air Pollution Control residues (APCr), which are hazardous residue nowadays stored after treatment, for the fabrication of carbon negative aggregates. The AGGREGACO2 project will demonstrate the industrial feasibility and cost-effectiveness of the first carbon negative aggregate that can compete face-to-face in the market while reduce drastically the GHG emissions emitted by refineries, the carbon footprint of the fuels and APCr in landfills.

ALBA and OCO INT together with the Repsol Group, will become the first companies in the world in introducing industrial ACT processes perfectly connected with refinery plants, paving the way

COORDINATOR

ALBA EMISSION FREE ENERGY SA

LOCATION

Spain

CATEGORY

Energy intensive industries (EII)

SECTOR

Glass, ceramics construction material

AMOUNT OF INNOVATION FUND GRANT

EUR 3,168,000

EXPECTED GHG EMISSIONS AVOIDANCE

28,364 tonnes CO2 equivalent

STARTING DATE

01 April, 2021

ENTRY INTO OPERATION DATE

31 January, 2026

FINANCIAL CLOSE DATE

30 September, 2024

** 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.*

towards the transformation of the traditional oil gas plants in places where fabricate derivative sustainable products with high added- value. This joint research produced attractive and promising results at high TRL-levels that make the AGGREGACO2 industrial concept profitable at mass fabrication level. A perfect symbiosis scenario is achievable because the ACT process can be 100% fuelled using the CO2 captured in a refinery as resource. Therefore, the main objective of the project

is to design, implement and validate the first commercial production plant of carbon negative aggregates (in EU) with a capacity of 56,000 Tn/years, with adequate stability (>7,000 h) and capable to revalorise 22,000 Tn APCr/year and use 2,200 Tn CO2 captured. This project will avoid 2,836.44 TonCO2eq/year (i.e. 28,364 TonCO2eq considering 10 years of project operation) and, besides that, REPSOL will produce around 400 Ton/year of low carbon hydrogen.

| Participants

ALBA EMISSION FREE ENERGY SA

Spain

O C O TECHNOLOGY LIMITED

United Kingdom

REPSOL SA

Spain

PETROLEOS DEL NORTE SA

Spain

REPSOL PETROLEO SA

Spain

O.C.O International Limited

United Kingdom