

INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

IFESTOS: IFESTOS – one of the largest carbon capture projects in Europe to enable the production of zero carbon cement concrete and create decarbonization synergies with regional industries

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

Project Factsheet

The IFESTOS project aims to set up one of Europe's largest carbon capture and storage (CCS) value chains. TITAN Cement Group will retrofit its existing cement kilns at the Kamari plant near Athens, Greece, with an innovative carbon capture configuration. First- and second-generation oxyfuel technology will be combined with cryogenic capture. This will result in capturing 98.5% of the plant's carbon dioxide (CO₂) emissions that would otherwise be released during its cement production process, thus supplying the market with approximately 3 million tons per year of zero-carbon cement to serve the growing needs for green construction materials in the metropolitan area of Athens and beyond. Captured CO₂ will be liquified and transported to a permanent storage site in the Mediterranean.

The project will apply a hybrid carbon capture configuration by combining first- and second-generation oxyfuel and post-combustion cryogenic capture technologies. Exhaust gases from the cement kilns will be enriched to more than 70% CO₂,

COORDINATOR

ANONYMI ETAIREIA TSIMENTON TITAN

LOCATION

Greece

CATEGORY

Energy intensive industries (EII)

SECTOR

Cement & lime

AMOUNT OF INNOVATION FUND GRANT

EUR 234,000,000

EXPECTED GHG EMISSIONS AVOIDANCE

20,227,227 tonnes CO₂ equivalent

STARTING DATE

01 January, 2024

FINANCIAL CLOSE DATE

30 June, 2026

ENTRY INTO OPERATION DATE

31 December, 2029

CALL NAME

InnovFund-2022-LSC

* 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.

allowing for high capture efficiency. The project will be the first double-inlet post-combustion system, which will capture emissions from two kilns with different CO₂ content. This approach will enable the avoidance of more than 1.9 million tonnes of CO₂ annually which represents around 12% of the annual emissions of all Greek industrial installations (based on data from the 2022 Climate Action Progress Report) and will make IFESTOS one of the largest carbon capture facilities in Europe. This will kickstart the CCS value chain in Southern Europe and encourage the rest of the industry to apply similar models. IFESTOS will be powered by 100% clean energy and will significantly increase the use of alternative fuels at the Kamari cement plant, while capturing all related biogenic CO₂ emissions.

By tackling greenhouse gas (GHG) emissions in a hard-to-abate sector, IFESTOS is contributing to the

aim of EU carbon neutrality by 2050, in line with the European Green Deal. The project's scale, and the value chain that comes with it, will enhance the EU's sustainable growth in line with the Circular Economy Action Plan, while supporting Europe's competitiveness and strategic autonomy. In addition, in view of its demand for renewable energy, IFESTOS will create a viable business platform for large renewable energy projects, in line with RePowerEU guidelines.

IFESTOS will be the steppingstone for a regional CCS cluster, acting as a key enabler for local CO₂ shipping and storage infrastructure. In addition, the project will boost the local economy with an estimated job creation of approximately 115 direct and 800 indirect full-time equivalent jobs.

| Participants

ANONYMI ETAIREIA TSIMENTON TITAN

Greece

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