



MANUFACTURING OF COMPONENTS
FOR RENEWABLE ENERGY

INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

RESILIENCE: Revolutionizing Energy: Scaling manufacturing of Innovative, reversible, highly Efficient, Carbon-negative power plants

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

| Project Factsheet

The project aims to revolutionise biogas energy electricity production with containerised and modular reversible power plants using reversible Solid Oxide Cells (rSOC). The technology manufactured by German clean tech start-up Reverion delivers an unprecedented electrical efficiency of up to 80% during power generation. In addition, the units can switch from power generation to electrolysis in under a minute, storing excess energy for when the grid needs it. These plants can enhance existing biogas installations or establish new ones, significantly reducing greenhouse gas (GHG) emissions. RESILIENCE is expected to avoid 2.4 Mt CO₂e by 2035, reducing emissions by approximately 131% in its first ten years of operation compared to the reference scenario, thus supporting decarbonisation goals in the biogas sector, a traditionally hard-to-abate industry.

Reverion's power plants are designed to address the inefficiencies of conventional biogas systems utilising Internal Combustion Engines (ICEs), which achieve

COORDINATOR

REVERION GMBH

LOCATION

Germany

CATEGORY

Renewable Energy (RES)

SECTOR

Manufacturing of components for renewable energy

AMOUNT OF INNOVATION FUND GRANT

EUR 19,458,418

EXPECTED GHG EMISSIONS AVOIDANCE

2,407,379 tonnes CO₂ equivalent

STARTING DATE

01 May, 2024

ENTRY INTO OPERATION DATE

31 March, 2026

FINANCIAL CLOSE DATE

30 June, 2025

* 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.

around 40% efficiency. Their reversible system design enables a swift transition between fuel cell and electrolysis modes, allowing the plant to operate continuously according to the grid's supply-demand dynamics. The unit captures the CO₂ from the biogas during power generation, allowing for Carbon Capture and Utilisation (CCU) or Storage (CCS) and thus negative CO₂ emissions.

RESILIENCE will scale up the production of these reversible power plants by expanding the current production facility in Eresing, Germany, including specialised assembly lines for main modules. The expanded site will feature a variety of buildings with dedicated spaces for component preparation, final assembly, and factory acceptance testing. By the end

of March 2026, Reverion aims to achieve an annual production capacity of 50 units with a projected yearly power output reaching 13 megawatts (MW), meeting pre-existing customer demand and supporting the market roll-out of these innovative, high-efficiency power plants. The facility's growth will contribute to the local supply chain and create jobs for Reverion and its partners. RESILIENCE's scalable production model promises cost reductions and efficiency gains, ensuring broader European deployment potential. Roughly 20 000 biogas plants are currently operational and thus candidates for retrofitting. This project supports Europe's goal of reducing net GHG emissions by 55% by 2030 and achieving climate neutrality by 2050.

| Participants

REVERION GMBH

Germany