



MANUFACTURING OF COMPONENTS
FOR ENERGY INTENSIVE INDUSTRIES

INNOVATION FUND

Deploying innovative net-zero technologies for climate neutrality

ELCOI: ELCO I: Solid Oxide Cell and Stack Manufacturing facility

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

| Project Factsheet

ELCO I: Solid Oxide Cell and Stack Pilot Manufacturing facility

The project, located in Estonia, aims to establish a state-of-the-art manufacturing plant for solid oxide electrolyser cells (SOEC) with a production capacity of 360 MW. The project aims a 100% GHG relative emission avoidance compared with the reference scenario.

ELCO I project incorporates several advanced manufacturing innovations. The plant's design includes an automated large batch mixer for paste preparation, roll-to-roll printing and continuous pusher furnaces for sintering, which optimise energy consumption during high-temperature firing processes. The plant also implements automated quality control using 3D microscopic scanning and AI-driven algorithms to detect and classify defects as small as 10 µm. The project plans to have an absolute GHG emissions avoidance of approximately

COORDINATOR

AKTSIASELTS ELCOGEN

LOCATION

Estonia

CATEGORY

Energy intensive industries (EII)

SECTOR

Manufacturing of components for energy intensive industries

AMOUNT OF INNOVATION FUND GRANT

EUR 24,932,000

EXPECTED GHG EMISSIONS AVOIDANCE

2,011,842 tonnes CO₂ equivalent

STARTING DATE

01 May, 2024

ENTRY INTO OPERATION DATE

31 May, 2026

FINANCIAL CLOSE DATE

30 November, 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.*

2 million tons of CO₂e during its first 10 years of operation.

The plant will be a critical step in achieving electrolyser gigawatt-scale production in Europe by 2030, significantly contributing to reducing the costs of green hydrogen production. As such, the project contributes to European renewable hydrogen production goals under RePowerEU and the Europe's Hydrogen Strategy, also contributes considerably to achieving energy security and climate neutrality goals as ELCO I's technology facilitates renewable hydrogen production and is pivotal in decarbonising

hard-to-abate sectors like steel, fertiliser, and methanol production. It also contributes to strengthening European industrial manufacturing capacity under the Net-Zero Industry Act by supporting manufacturing capacity of electrolyzers.

ELCO I's manufacturing facility aims to create approximately 300 new jobs, contributing to local employment and economic growth. The project's emphasis on cutting-edge automation, quality control, and production efficiency will foster a strong and competitive clean-tech industry in the region.

| Participants

AKTSIASELTS ELCOGEN

Estonia