

**Innovation Fund 2023 Net Zero Technologies – Projects that were invited to grant agreement preparation from the reserve list – March 2025**

Name	Sector	Location	Coordinator	Description
ARCaDe: Antwerp Refinery Carbon capture and DeNOx	Refineries (LSC)	Belgium	TOTALENERGIES REFINERY ANTWERP	<ul style="list-style-type: none"> <li>• The ARCaDe project aims to implement a carbon dioxide (CO<sub>2</sub>) emissions capture system on a Fluid Catalytic Cracking (FCC) unit of a refinery in Belgium.</li> <li>• The project is based on a novel combination of the first-of-a-kind commercial-scale deployment of the "Synthesised Air Combustion" process for refinery Fluid Catalytic Cracking (FCC) units, along with further development of existing technologies such as CO-boilers and Cryogenic Capture. The system will be fully integrated with the local CO<sub>2</sub> transport and storage value chain.</li> <li>• The project proposes a solution for a hard-to-abate sector, and it has the potential to up-scale the CCS value chain.</li> </ul>
CHO-WAVE: Energy Community for Hydrogen On-site Production from Wind and AgriVoltaics for Industry DEcarbonisation	Hydrogen (Pilot)	Luxembourg	GREEN POWER STORAGE SOLUTIONS(GPSS) S.A.	<ul style="list-style-type: none"> <li>• The project will demonstrate a first-of-its-kind green hydrogen facility in Luxembourg that covers the entire value chain, from production to distribution and local use in industries that are difficult to decarbonise.</li> <li>• Green hydrogen will be produced by connecting a Polymer Electrolyte Membrane (PEM) electrolyser to new Renewable Energy Sources (RES) at a local level. This system will feature a universal control unit that maximises RES use and manages the electrolyser using model predictive control software and neural network technologies. The project also facilitates electricity sharing at the medium-voltage level, paving the way for new business models.</li> <li>• In line with Luxembourg's national hydrogen strategy, the produced green hydrogen (estimated at 330 tons per year) will be integrated into local industrial processes, such as aluminium smelting, showcasing its potential to decarbonise key hard-to-abate sectors.</li> </ul>
GRHENA: Green heat generation hub at the Chemical Industrial Park of Tarragona	Solar energy (Large-scale)	Spain	IBERDROLA CLIENTES SOCIEDAD ANONIMA	<ul style="list-style-type: none"> <li>• The project aims to supply sustainable heat to industry by decoupling steam demand from power consumption, thereby achieving an energy efficiency of 104%.</li> <li>• It presents an integrated solution that combines renewable energy, thermal energy storage, and high-temperature heat pumps, significantly boosting the use of green heat in the Chemical Industrial Park of Tarragona, Spain.</li> </ul>

				<ul style="list-style-type: none"> <li>The project is expected to avoid more than 1.45 million tonnes of CO<sub>2</sub> equivalent over its first ten years of operation. As a pioneering initiative, it marks a crucial first step in an ambitious plan to expand and replicate the concept at regional, national, and European levels, driving the transition to a low-carbon industrial sector.</li> </ul>
H2M Eemshaven: Kick starting the EU hydrogen value chain by realizing a 1,000 MW low-carbon hydrogen production plant in the Eemshaven (NL) industrial area.	Hydrogen (Large-scale)	Nederlans	EQUINOR ASA	<ul style="list-style-type: none"> <li>The project aims to demonstrate Europe's largest low-carbon hydrogen production plant, with a capacity of 1000 MW, based on Carbon Capture and Storage (CCS) technology.</li> <li>The hydrogen plant will innovatively utilise established technology, reducing energy and resource consumption while enhancing replicability and supply security. Over 95% of CO<sub>2</sub> emissions will be captured and transported to a secure and permanent storage reservoir beneath the Norwegian seabed. The plant will be connected to the planned backbone hydrogen infrastructure in the Netherlands and Germany.</li> <li>The project is expected to become operational in 2029, producing approximately 210 000 tonnes of low-carbon hydrogen annually and capturing around 1.8 million tonnes of CO<sub>2</sub>. As a flagship project, it represents a significant step towards developing a European market for low-carbon hydrogen, advancing the EU's transition towards a climate-neutral future.</li> </ul>
LARS: First European large-scale integrated pre-treatment and chemical recycling plant for mixed plastic waste to generate pyrolysis oil as an alternative raw material for fossil-based raw materials	Chemicals (LSC)	Germany	Green Dot Advanced Recycling GmbH	<ul style="list-style-type: none"> <li>The LARS project aims to build a large-scale integrated pre-treatment and chemical recycling plant in Germany for mixed plastic waste to produce pyrolysis oil, as an alternative to fossil-based raw materials for the plastics industry.</li> <li>A key feature of the pre-treatment system is the exclusive use of dry mechanical processes, with no wastewater produced. In addition, the remaining sorting residues are minimized.</li> <li>By producing pyrolysis oil from plastic waste, the LARS project supports the EU's objectives for a more circular economy.</li> </ul>
VianaWave: Accelerating the transition to net zero with large-scale generation of clean electricity from ocean waves	Hydro/Ocean energy (Pilot)	Portugal, Sweden	CORPOWER OCEAN AB	<ul style="list-style-type: none"> <li>VianaWave aims to develop a 10 MW pre-commercial wave farm in Portugal, leveraging the existing operational infrastructure and existing marine license. This wave farm will expand on an initial full-scale Wave Energy Converter connected to the grid.</li> </ul>

				<ul style="list-style-type: none"><li>• The project aims to validate CorPower's wave cluster concept, demonstrating the potential of wave energy to contribute to a 100% carbon-free energy mix cost-effectively.</li><li>• The pilot will produce carbon-free energy uninterrupted, saving up to 46 600 tonnes of CO<sub>2</sub> equivalent over the first ten years of operation.</li></ul>
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