



European Commission

Innovation Fund Programme



Overview of ongoing projects in Croatia

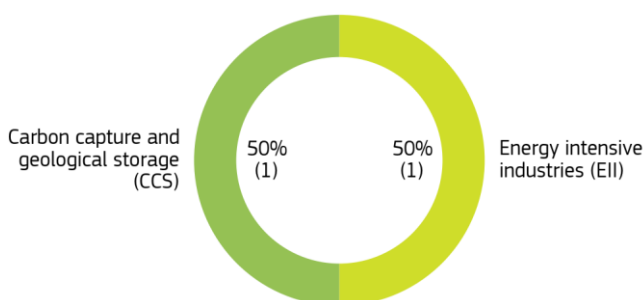
Funded by the revenue of the EU Emissions Trading System, the Innovation Fund's goal is to help businesses investing in innovative low-carbon technologies with significant GHG emissions reduction potential.

The Innovation Fund currently supports **2 projects** located in Croatia, which will contribute to the decarbonisation of European industries with a total expected GHG emission reduction of **3.7 Mt CO₂ equivalent in the first 10 years of operation**.

The total **Innovation Fund grant in Croatia is of EUR 121.4 million**, out of the **total relevant costs of EUR 195.9 million**, as defined in Art 5 of the Delegated Regulation 2019/856 on the Innovation Fund¹.

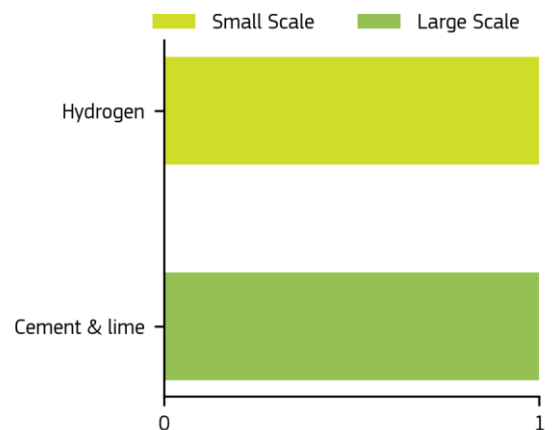
Projects per category

Number of projects and percentage of the total



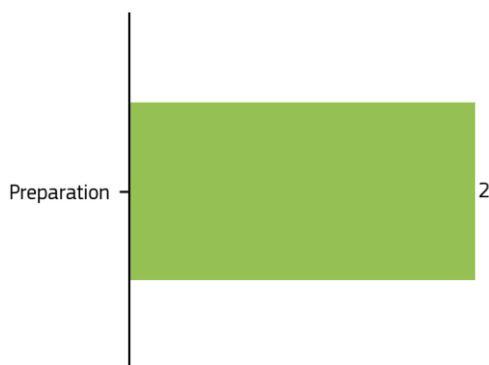
Projects per sector

Number of Small and Large-Scale projects



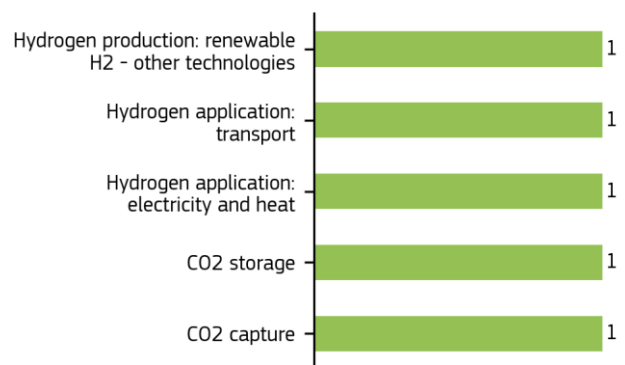
Projects per phase²

Number of projects



Top 5 technology pathways³

Number of projects



¹ OJ L 140, 28.5.2019, p. 9.

² Preparation means the period before financial close is reached; construction means the period between financial close and entry into operation; operation means that the construction is finished and the project has already started production.

³ Projects may employ several technological pathways, only the top 5 per country are kept in the graph.

List of ongoing Innovation Fund projects in Croatia

Acronym	Title	Sector	Start date	Project phase	Beneficiaries	Innovation Fund grant (EUR million)	Expected GHG emission avoidance (t CO2eq)
Large Scale						116.9	3,690,446
KOdeCO net zero	KOdeCO net zero	Cement & lime	01/01/2024	Preparation	HOL	116.9	3,690,446
Small Scale						4.5	29,356
S2H2	Sludge-to-Hydrogen for a Circular Economy	Hydrogen	01/07/2024	Preparation	DOK-ING E.ON Plin	4.5	29,356

Project overview

Acronym	Title	Description
K0deCO net zero	K0deCO net zero	<p>The K0deCO net zero project aims to achieve the first net zero cement plant in Croatia and in the Mediterranean. It will create a first-of-its-kind end-to-end carbon capture and storage (CCS) value chain from the Holcim cement plant in Koromačno to the first permanent storage site in the Mediterranean Sea. The project will result in a relative greenhouse gas (GHG) emissions avoidance of 107% compared to the reference scenario.</p> <p>Holcim's K0deCO net zero innovation builds on the 2nd generation disruptive integration of the Cryocap™ FG non-intrusive carbon capture and liquefaction technology, in an upgraded century old cement facility. The already disruptive solution, developed by Air Liquide, will be pushed further to significantly lower energy consumption, reduce water consumption, lower emissions of harmful products and increase circularity, while limiting risks on the brownfield cement plant's production reliability. In addition, the K0deCO net zero project, will integrate first-of-its-kind water treatment and desalination plants. This will further decrease the plant's environmental footprint, aiming to become a zero freshwater production site. The K0deCO net zero CCS chain will allow for the avoidance of 3.7 million tonnes of CO₂ equivalent (CO₂e) over the first ten years of operation.</p> <p>K0deCO net zero is highly strategic for the Croatian and European cement and construction industries as it will provide net zero cement for the first time in the region. This will contribute directly to the decarbonisation of the Croatian industry, and the achievement of the European Green Deal and New European Bauhaus goals, as well as the Low-Carbon Development Strategy of the Republic of Croatia. Located in Istra County, it will also contribute to the goals set within the Just Transition Mechanism.</p> <p>Through extensive stakeholder engagement activities, the project will advance knowledge and experience in CCS in the region, as well as create opportunities and programs for upskilling and reskilling the work force towards a successful transition to a sustainable competitive economy. The project will have a strong impact on job creation in the region, with up to 90 new direct jobs and 200 indirect jobs within different sectors. Also, by showcasing the highly scalable low-risk solution, the K0deCO net zero project will support deployment and replicability across the cement industry and other industrial sectors on a European and national scale. The project has the potential to become a key reference in the decarbonisation of the Mediterranean countries, as it will support the development of regional CO₂ storage solution for hard-to-abate industries across the south of Europe.</p>
S2H2	Sludge-to-Hydrogen for a Circular Economy	<p>The S2H2 project intends to produce renewable hydrogen fuel from wastewater sludge by using a novel and patentable technology. S2H2 transforms previously landfilled sludge into hydrogen to be used as fuel or feedstock with only by-products being ashes and carbon black. These by-products are then recovered and reused. By adopting circular economy principles, the project aims to lead the way in national sewage water treatment practices. Located in Zagreb, Croatia, the project's relative greenhouse gas (GHG) emissions avoided amounted to 108% compared to the reference scenario.</p> <p>Sewage sludge is the solid residue obtained after removing water from the slurry generated during the treatment of municipal wastewater. The S2H2 project employs a new approach to gasification through use of afterheater and syngas recirculation which emits zero carbon dioxide. The S2H2 unit takes 25 tonnes of sludge daily and processes it into one tonne of renewable hydrogen. Therefore, alternative and new renewable hydrogen production technologies, such as sludge to hydrogen, will play an important role in serving the fast growing renewable hydrogen demand. The hydrogen will be used for the decarbonisation of the local gas grid and a local technical gas distribution company.</p> <p>The ash and carbon black by-products are used in cement production and tyre manufacturing respectively. To illustrate the effectiveness of this project, the 28,9 tonnes of reduced CO₂ emissions are equivalent to circling the Earth 5,5 times by a fossil-fuel powered car.</p> <p>The project is expected to provide a solution for the problem of wastewater sludge, for which there is no alternative for ground reclamation (mixing with other materials and then landfilling) in Croatia. This technology constitutes one of the first steps towards the creation of a Croatian hydrogen industry, in line with the national hydrogen roadmap in alignment with the European goals. In addition, it will reduce the negative environmental impact of sewage sludge landfills.</p> <p>The solution can be scaled across multiple wastewater treatment plants in Croatia and in the European Union because of its flexibility and scalable design. The project directly affects energy value chains, providing carbon-free and affordable energy and feedstock, as well as material value chains in cement and tyre manufacturing industries.</p>