



Demonstrating sustainable value creation from industrial CO₂ by its thermophilic microbial conversion into acetone

Project type: IA – Innovation Action
Start date of the project: 01/10/2021
Duration: 60 months

CCUS PROJECT DATABASE



Foreword

In the face of accelerating climate change and the imperative to mitigate its impacts, the necessity for effective Carbon Capture, Utilization, and Storage (CCUS) solutions has never been more pressing. As nations worldwide commit to ambitious emissions reduction targets, CCUS stands as a critical tool in our arsenal for achieving a sustainable, low-carbon future.

This part of the Toolbox delves into the realm of CCUS databases, recognizing their pivotal role in facilitating informed decision-making, fostering collaboration, and driving innovation within the field. In particular, it draws upon the wealth of knowledge provided by the CO2 Value Europe database and the insights offered by the International Energy Agency (IEA), two stalwarts in the pursuit of carbon management excellence.

As we embark on this journey of exploration, it is paramount to acknowledge the collective effort and dedication of researchers, policymakers, industry stakeholders, and environmental advocates who contribute tirelessly to advancing CCUS technologies. Their commitment underscores the shared vision of a world where sustainable development harmonizes with environmental stewardship.

Through this report, we aim to shed light on the significance of CCUS databases, elucidating their role in facilitating informed decision-making, enhancing transparency, and fostering international collaboration. By leveraging the comprehensive datasets and analyses provided by esteemed institutions such as CO2 Value Europe and the IEA, we endeavor to equip stakeholders with the knowledge and tools necessary to navigate the complex landscape of carbon management effectively.

Ultimately, our collective efforts in harnessing the potential of CCUS technologies and leveraging the insights gleaned from authoritative databases will play a pivotal role in shaping a resilient, low-carbon future. As we confront the challenges posed by climate change, let us remain steadfast in our commitment to innovation, collaboration, and sustainability.

Do not hesitate to send us any comments to improve this document by writing or sharing information to cherif.morcos@axelera.org



1- CO2 Value Europe database

CO₂ Value Europe is the European association dedicated to Carbon Capture and Utilisation (CCU), bringing together stakeholders from the complete CCU value chain and across industries and sectors.

The Association brings together more than 90 organisations worldwide from diverse sectors (including industries, start-ups, universities, research and technology organisations, and regional clusters), and develops a large network of many more organisations and individuals who share the vision that CCU technologies are necessary to help the EU reach climate targets.

CO₂ Value Europe's mission is to promote the development and market deployment of sustainable industrial solutions that convert CO₂ into valuable products, in order to contribute to the net reduction of global CO₂ emissions and to the diversification of the carbon feedstock to move away from fossil carbon.

CCU project database

CO₂ value provides a worldwide database of all the existing CCU projects.

You can filter by:

- Project name
- Project status
- Activities
- Information on capture
- Location
- CCU Technology
- TRL
- Product category



By clicking on the project link, you will have a detailed description of project information including a brief description, but also technical and technological details and the link related to the project.

3D-Project DMX



Project Description

This project aims mainly at demonstrating DMXTM CO₂ Capture technology in AMAL's Dunkirk (FR) steel mill on an industrial pilot plant. Waste Heat Recovery well combined with DMXTM process will allow reaching unprecedented CO₂ Capture cost under 40 €/tCO₂. Downstream requirements and environmental, societal and stakeholder's expectations are dealt from the beginning and all-along the project. Moreover, DMXB solvent production will be optimised industrially and environmentally, through LCA.

Project Lead: IFPEN



Geographical Information

Region: Europe

Country: France

City/Town: Dunkirk



Project Boundaries

Timeline Start - End: 2019-05-01 - 2023-04-30

Project Status: Ongoing

Project Budget: 19239368.51 €

Funding source: 76% H2020



Websites

Website: <http://cordis.europa.eu/project/id/838031>



Technological Information

Activities:

- Life cycle assessment (LCA)
- CCU

CO₂ Source: Steel production

CCU Technology Category: Capture (Point sources)

Facility stage: Planning

Start TRL: 5

End TRL: 7



Technological Details

CO₂ capture/Utilization:

Production Volume: 0.5t CO₂/h



Product Information

Product Categories:

- Captured CO₂

Specific Product(s):



Partners

- TOTAL
- AMAL
- BREVIK
- CMI
- Axens
- UETIKON
- Gassco

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In order to access the CO₂ value Europe database, please click on this [link](#).

2- International Energy Agency (IEA)

The international energy agency is an international energy forum comprised of 29 industrialized countries under the organization for economic development and cooperation (oecd).

The IEA was established in 1974, in the wake of the 1973-1974 oil crisis, to help its members respond to major oil supply disruptions, a role it continues to fulfill today. IEA's mandate has expanded over time to include tracking and analyzing global key energy trends, promoting sound energy policy, and fostering multinational energy technology cooperation.

The IEA established a worldwide database of CCUS projects as part of its efforts to track advances in carbon capture, utilisation, and storage (CCUS). It covers all CO₂ capture, transport, storage, and utilisation projects worldwide that have been commissioned since the 1970s and have an announced capacity of more than 100 000 t per year (or 1 000 t per year for direct air capture facilities). It includes projects with a clear emissions reduction scope and excludes CO₂ capture for utilisation pathways which bring low climate benefits (e.g. food and beverages), or which are part of the conventional industrial process (e.g. internal use for urea production), as well as use of naturally occurring CO₂ for enhanced oil recovery. The database complements other technology-related tracking efforts, such as the Hydrogen Projects database and the Clean Energy Demonstration Projects Database.

In this database, you can find projects facilitating CO₂ transportation from capture to injection under unified operation. Capture-only initiatives, adaptable for integration within broader CCUS hubs. CO₂ transport-focused endeavors, encompassing shipping, pipelines, and storage terminals. Dedicated CO₂ storage projects, including standalone storage and enhanced oil recovery. Integrated CO₂ transport and storage initiatives addressing logistical needs comprehensively. Purposeful CO₂ capture for external applications, ensuring significant climate benefits and transparent CO₂ sourcing. These projects are classified depending on their status, country or region, and also on the sector (power and heat, biofuels, hydrogen/ammonia, cement, iron and steel...)

In order to access the IEA database, please click on this [link](#).

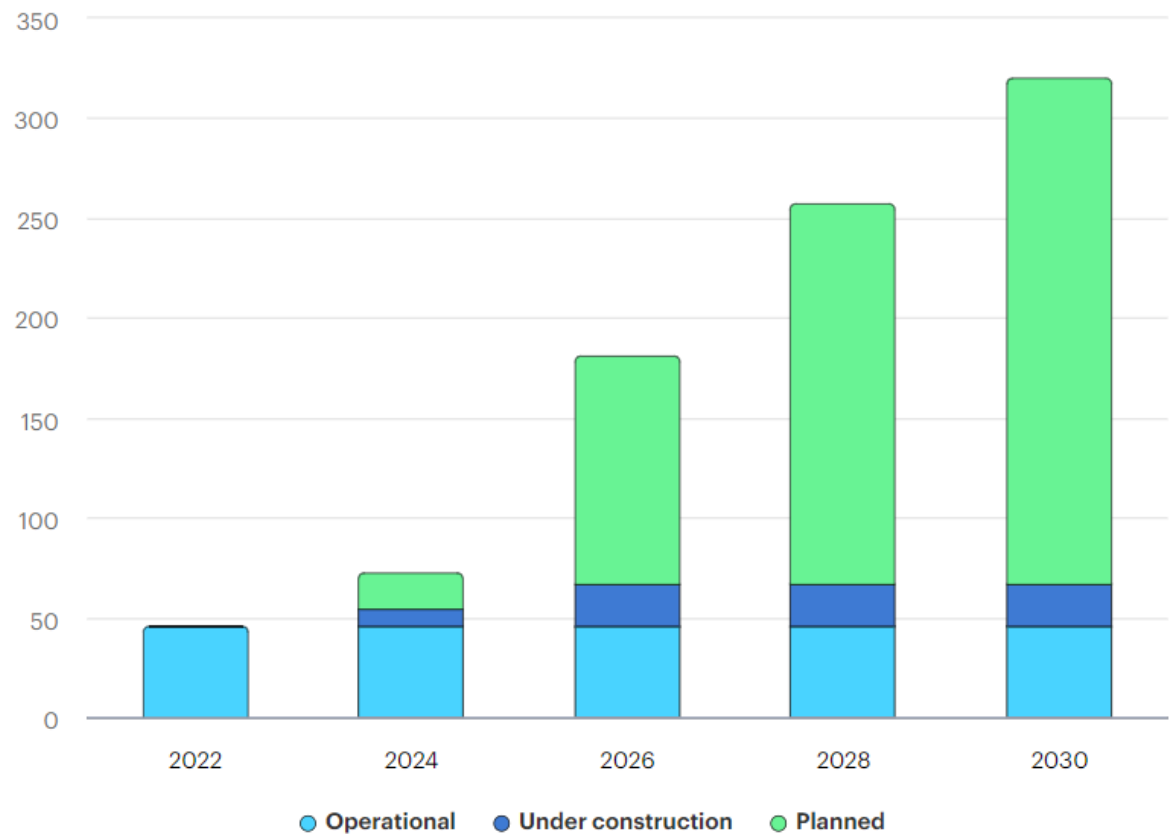


Operational and planned capture capacity

By status

By project type

Mt CO2 per year



Operational and planned capture capacity

