**ArcelorMittal Dunkirk Project Information**

**Project Developer Website**

ArcelorMittal [https://france.arcelormittal.com](https://france.arcelormittal.com/news/2019/mai/Lancement-du-projet-captation-CO2.aspx)

**Project Location**

Dunkirk, France

**Project Type**

CO2 Capture

**Project Description**

The “3D” project (for **D**MX **D**emonstration in **D**unkirk) has three main objectives:

* Demonstrate the effectiveness of the DMXTM process at the industrial pilot-scale. The pilot, designed by Axens, will be built from 2020 on the ArcelorMittal steel site in Dunkirk and from 2022 will be able to capture 0.5 tonne per hour of CO2 from steel gas.
* Prepare the installation of a first-of-a-kind industrial unit on the ArcelorMittal site in Dunkirk, which could be operational from 2025. It should capture more between 100 and 125 tonnes of CO2 per hour.
* Design a future European CCUS hub in Dunkirk, which could capture, transport and store 10 million tonnes of CO2 per year from 2035.

**Operational Status**

Aiming for pilot-scale testing of capture technology by 2022, and CCUS hub development by 2035.

**Technology Description**

Capture: The method DMXTM , patented process from research IFPEN and to be marketed by Axens, is a post-combustion process using a demixing solvent which reduces the energy penalty by almost 30% compared with the reference amine solvent. By also using the heat produced on the site, the cost of capture will be halved, to less than €30 per tonne of CO2. The technology will be applied on BF gas, and will take out the CO2 before use of the gas. CO2 capture rate up to 99 % may be reached. The CO2 is very pure (>99.7 % on dry basis) and it may be produced in pressure (up to 7 bara at the outlet of the capture process).

Transport & Storage: the development of a full CCUS hub is planned by 2035 with storage in the North Sea. This full-chain plan would rely on the transport and storage infrastructure for CO2 to be established in the North Sea via other projects such as the Northern Lights project, in which Total is already involved. First industrial unit (1 MtCO2/y) could be connected in 2025 with Phase 1 Northern Lights.

**TRL Progression (for DMXTM Process)**

Starting: TRL4

Target: TRL 7

**CO2 Reduction Potential**

The installation of a first industrial unit on the ArcelorMittal site in Dunkirk could be operational by 2025, capturing between 100 and 120 tonnes of CO2 per hour, or more than one million tonnes of CO2 per year. The long-term aim is for 10 million tonnes of CO2 per year to be permanently stored from 2035.

**Project Financing**

The “3D” project (for DMX TM Demonstration in Dunkirk) is part of the European Union's research and innovation program, Horizon 2020 (under Grant Agreement N° 838031). The project has a budget of 19.2 million euros out of 4 years, including 14.7 million euros of grants from the European Union. Coordinated by IFPEN, the “3D” project brings together 10 other research and industry partners from 6 European countries: ArcelorMittal, Axens, Total, ACP, Brevik Engineering, CMI, DTU, Gassco, ETH, Uetikon.

**3D Website**

<https://3d-ccus.com/>