

# Information Memorandum Proposal for CO<sub>2</sub> infrastructure: Antwerp



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sustainable transport solutions

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# Contents

<b>1. Project in the Antwerp port region</b>	<b>2</b>
<b>2. Participate in the Open Season</b>	<b>5</b>

## Disclaimer

This document (the "Information Memorandum Proposal for CO<sub>2</sub> infrastructure: Antwerp") sets forth certain information regarding the transportation of CO<sub>2</sub> which is considered as a solution to achieve the targets of decarbonisation. The information contained in this document reflects the point of view of Fluxys, Air Liquide and Pipelink at this stage and is publicly disclosed for information purposes only and without any commitment whatsoever from Fluxys, Air Liquide nor Pipelink, and should not be considered to give rise to any contractual relationship between Fluxys, Air Liquide and Pipelink and any interested party.

# 1. Project in the Antwerp port region

Air Liquide, BASF, Borealis, ExxonMobil, INEOS, Fluxys, Port of Antwerp and TotalEnergies joined forces at the end of 2019 and formed a consortium under the name of Antwerp@C, to investigate the technical and economic feasibility of building a CO<sub>2</sub> infrastructure to support future CCUS (Carbon Capture Utilisation & Storage) applications. Carbon Capture & Storage (CCS) and eventually also Carbon Capture & Utilisation (CCU) – i.e. reusing CO<sub>2</sub> as a raw material for the chemical industry – are seen as important routes in the transition to a carbon-neutral port.

If realised, the Antwerp@C project has the potential to significantly reduce the CO<sub>2</sub> emissions in the port (18 million tonnes of greenhouse gas emissions in 2017) between now and 2030 while ensuring the long-term competitiveness of one of Europe's main economic engines.

The project has the ambition to develop a world-scale, robust, competitive and flexible infrastructure with multiple export options to transport CO<sub>2</sub> to permanent storage sites in Europe or CO<sub>2</sub> consumers in the Antwerp port area. After the capture installation of the emitter the base concept for the Antwerp@C project is an open access infrastructure that will collect captured CO<sub>2</sub> from industrial plants in a local pipeline network and transports it throughout the port of Antwerp towards export facilities.

Further transportation will bring CO<sub>2</sub> to the locations where storage companies will permanently store the CO<sub>2</sub> in geological formations.

In the context of the Antwerp@C consortium, a feasibility and pre-FEED study have been launched which have determined a specific CO<sub>2</sub> network route including potential exit points, taking market demand into account as well as existing infrastructure and potential future demand. The proposal, as depicted below, encompasses infrastructure able to collect and transport CO<sub>2</sub> from the coloured areas towards one of the envisaged exit points (e.g. a CO<sub>2</sub> liquefaction terminal (first phase) or export pipeline towards the Netherlands (later phase)):

- A: the left Bank along the Ketenislaan, Sint Annalaan, Geslecht, Molenweg, Sint Antoniusweg and Ploegweg.
- B: the right bank along the Scheldelaan from the border with the Netherlands down towards the Oosterweelsteenweg.
- C: the right Bank north of the Bevrijdingsdok
- D: the left Bank near Zwijndrecht (Waaslandhaven Oost)



The above described pipeline routing gives a clear overview of the most probable CO<sub>2</sub> network development in the port of Antwerp region, and therefore the highest likelihood to have an easy access to the network from within the proposed coverage area (coloured).

Specific market demand in the port but outside the proposed coverage area can alter or extend the routing.

The Antwerp@C project currently also comprises two export options for captured CO<sub>2</sub>, to which the pipeline network in the port of Antwerp is proposed to be connected:

- A liquefaction terminal to be located near Berendrecht, where CO<sub>2</sub> can be liquified and loaded onto ships for onward transportation and storage underneath the North Sea
- An export pipeline for transportation to Rotterdam where CO<sub>2</sub> storage projects are also currently under development

The pipeline network may also connect to any other relevant exit point in the port of Antwerp.

### **Phased approach**

Fluxys, Air Liquide and, only for the pipeline network, Pipelink (a subsidiary of Port of Antwerp) intend to partner<sup>1</sup> with respect to the potential investment in the local infrastructure in the Port of Antwerp, in two phases:

- **Phase 1:** infrastructure for emitters which are willing to submit **a non-binding Expression of Interest ('EoI') by early 2022 in order to take a Final Investment Decision ('FID') by end 2022 (FID Phase 1)** with a view to start capture, transport via a CO<sub>2</sub> network in the port region and terminalling operations in a liquefaction terminal in 2025. To clarify; capture, shipping and sequestration of CO<sub>2</sub> are out of scope of this proposal.
- **Phase 2:** extension of the CO<sub>2</sub> network in the port region, potential expansion of the liquefaction terminal and/or potential export by pipeline to Rotterdam with a **commitment after 2022 (FID Phase 2)**

Fluxys, Air Liquide and Pipelink now wish to conduct an open season to determine demand for the infrastructure proposed to be built, both for Phase 1 and Phase 2.

Parties that are interested to secure capacity with respect to Phase 1 will be required to demonstrate a sufficient maturity of their upstream capture project and downstream (of the proposed infrastructure) transport and storage development to enable an FID by end 2022, as well as agree to a reasonable cost sharing mechanism with regard to the engineering and other costs that are currently ongoing for the preparation of a final investment decision of the Phase 1 local infrastructure.

Parties that are interested to secure capacity with respect to Phase 2 can already express their interest in the current open season. Interested Parties that have not registered will however still be able to participate in a future open season with respect to the construction and operation of the Phase 2 infrastructure, triggered by market demand.

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<sup>1</sup> subject to further clearance of relevant national and EU competition law authorities, if required

## 2. Participate in the Open Season

Parties willing to express their interest in CO<sub>2</sub> transmission (local network in the port region and/or export pipeline) and/or terminalling services as described above are requested to register in this open season by filling out the online participation form as from now. In addition, parties developing CCU-solutions are also invited to express their interest in connecting to the pipeline network to ensure their CO<sub>2</sub> supply.

Fluxys will on behalf of the network & terminal investors contact interested parties to:

- Exchange information in respect of the network & terminal and the interested parties' capture project, after having entered into a mutual non-disclosure agreement
- Submit a draft Expression of Interest to be completed by the interested party with respect to the amount of capacity, start date, entry point, and other relevant data

The closure date for the participation to this proposal is February 18<sup>th</sup> 2022.

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