**Porthos Project Information**

**Project Developer Website**

Rotterdam CCUS Consortium <https://www.porthosco2.nl/en/>

(Port of Rotterdam Authority, EBN, Gasunie)

**Project Location**

Rotterdam, Netherlands

**Project Type**

CO2 Transport and Storage

**Project Description**

The Porthos infrastructure consists of an onshore pipeline, a compressor station, an offshore pipeline and storage facilities. The CO2 that will be transported and stored by Porthos, will be captured by various companies. The companies will supply their CO2 to a 30-33 km long collective pipeline that runs through the Rotterdam port area. The CO2 will then be pressurised in a compressor station and transported through an offshore pipeline to a platform in the North Sea, approximately 20 km off the coast. From this platform, the CO2 will be pumped in empty gas fields. The empty gas fields have an estimated capacity of 37 Mton and are situated in a sealed reservoir of porous sandstone, more than 3 km beneath the North Sea.

It is expected that the project will be able to store 2.5 Mton CO2 per year for a duration of 15 years. The final investment decision will be taken by the end of 2021. After that, the construction of the infrastructure will start. According to planning, the first CO2 will be stored under the North Sea by 2024.

**Operational Status**

Design & Engineering Phase

Storage is in Permit Preparation Phase

It is expected that the system will be operational by 2024.

**Technology Description**

Transport: Porthos will transport the CO2 from suppliers via an onshore pipeline to a compressor station. The CO2 will be pressurised there before being transported via a pipeline beneath the North Sea to a platform some 20 km off the coast.

Storage: 3 storage sites are planned: the P18-2, P18-4 and P18-6 depleted gas fields in the North Sea, all accessible from the P18-A platform. TAQA is the operator and EBN is a co-shareholder in the natural gas extraction. TAQA already has a CO2 storage permit for P18-4.

Full-chain project: Porthos is planning to take CO2 from industries in the port of Rotterdam area which will feed their CO2 into a collective onshore pipeline that will run through the Rotterdam port area (suppliers are not yet formalised). Alongside storage, the Porthos infrastructure is also suitable for transporting CO2 for use in industries, such as greenhouse horticulture.

**TRL Level Progression**

Starting at TRL9

**CO2 Reduction Potential**

Estimated Storage Capacity: 37Mt

Dependant on the annual quantity, this can average 2-3 Mtpa of CO2 for approximately 15 years.

**Project Financing**

Various funds are available and will be examined, including funds from the national government and the European Union.

Porthos received € 1.2 million from RVO (Netherlands Enterprise Agency) in 2018 and a grant of € 6.5 million from the European Commission in 2019 for the current preparatory studies. Porthos also aims to obtain a subsidy from Brussels to realise the infrastructure (via CEF)

Porthos will recoup the one-off infrastructure investment (CAPEX) and the annual recurring costs for maintenance and operation (OPEX), as the companies will pay an amount per tonne CO2 that they supply. Porthos’ JDA partners can apply for government SDE++ subsidies in the autumn of 2020. SDE++ subsidy is necessary to bridge the difference in costs for ETS and the total costs for capture, transport and storage of CO2. This helps the companies to remain competitive while contributing to achieving the Dutch Climate Agreement objectives.

Capital expenditure estimate: € 400-500 million