



Press Release

Breakthrough for cleaner industry in the port of Rotterdam

Minister supports CO₂ storage project in hydrogen generation plant

Rotterdam, 9 May 2011. The Dutch Minister of Economic Affairs, Agriculture and Innovation, Mr Maxime Verhagen, has decided to submit the Rotterdam-based Green Hydrogen Project of Air Liquide for NER300 grants. NER300 is a European subsidy scheme for the co-funding of renewable energy and CO₂ storage projects. The Air Liquide project involves the capture and storage of CO₂ that is released in the production process of hydrogen, and will deliver a significant contribution to the greenification of the port of Rotterdam. It is also a crucial next step in the creation of the 'CO₂ hub' Rotterdam is building, which will offer transport, collection and storage facilities for joint use. This hub will enable the industrial and power sector to reduce their CO₂ emissions in a cost-effective way.

After ROAD, this is the second large-scale pilot project. ROAD will capture CO₂ in a newly to be developed Maasvlakte-based coal-fired power station. With these pilot projects for the energy and industrial sectors, including the corresponding infrastructure, Rotterdam will be ready for the development of a comprehensive approach for the entire region.

CO₂ hub and infrastructure

CCS, the concept of CO₂ capture, reuse and underground storage, is an important element of the strategy of the city of Rotterdam to reduce the level of CO₂ emissions in the region, besides efforts to enhance energy efficiency and the use of renewable energy, such as wind energy and biomass. In this respect, Rotterdam focuses predominantly on storage under the seabed. Rotterdam welcomes the Minister's decision to submit the project. 'It is evidence to the government's support of our CCS approach,' according to the Rotterdam Alderman for Sustainability, Van Huffelen. 'The project is important to Rotterdam and to the Netherlands. Capturing CO₂ will help to clean up our industry, but the project is also part of the larger CO₂ hub we are developing. CO₂ emitting companies can connect to the network and choose one of several storage locations. They can decide to supply CO₂ to the Westland greenhouses, or to have it stored in depleted oil and gas fields in the North Sea. Furthermore, we are investigating options to use CO₂ for enhanced oil and gas recovery from nearly depleted oil

and gas fields. Instead of a waste product, CO₂ will then become a product of economic value.'

Economic approach

Rotterdam's climate approach is at the same time an economic approach. Van Huffelen comments: 'Sustainability is an absolute requirement in the further development of the port and city of Rotterdam. We recognize the important benefits our approach offers the corporate sector in terms of investment opportunities and attractiveness of the location. Under the terms of European Directives and national legislation, companies are required to reduce their CO₂ emissions dramatically. There are various ways for them to comply with these requirements. They can buy emission rights, for instance, or capture CO₂. Optimizing the cost-effectiveness of CO₂ capture will allow us to satisfy two goals at once; making the port of Rotterdam a greener and more sustainable location, and making it more attractive for companies to take their CO₂ capturing activities to Rotterdam.'

Green Hydrogen Project

Air Liquide's Green Hydrogen Project is part of the new hydrogen production facility of Air Liquide which will be officially opened at the end of May in Rozenburg. The CO₂ released in the production of hydrogen, which is used for purposes including the desulphurization of fuels, is captured and transported through a pipeline to the newly to be built CO₂ Hub at the Second Maasvlakte. At this point, the gas is liquefied, temporarily stored and subsequently transported by ocean vessels to the Danish Continental Shelf. Air Liquide is currently investigating, together with Maersk Oil, the possibility of permanently storing the captured CO₂ in mature Danish oil fields, in combination with Enhanced Oil Recovery. The project is expected to start capturing CO₂ by 2016, at a capacity of half a megaton a year. The Green Hydrogen Project is an innovative project, both in terms of the method used to capture and liquefy CO₂ and in terms of the CO₂ Hub concept, known as Rotterdam Cintra ('Carbon in Transport'). Cintra is being developed by Air Liquide in conjunction with Vopak (for temporary storage), Anthony Veder (for transport by ship), and Gasunie (for pipe infrastructure). Stedin, in partnership with the Port of Rotterdam, handles the transport of CO₂ in the Rotterdam port area.

Note to the editors on the background of CCS:

The Rotterdam Climate Initiative (RCI) aims to achieve 50% reduction of CO₂ emissions and full climate change resilience by 2025. CO₂ capture, transport and storage (CCS) contributes over 50% to the envisaged reduction of CO₂ emissions of 17.5 megatons in 2025.

- Publication: *CCS in Rotterdam: a network approach* (available via link on [Rotterdamclimateinitiative.nl/CCS](https://rotterdamclimateinitiative.nl/CCS))
- Website: [Rotterdamclimateinitiative.nl/CCS](https://rotterdamclimateinitiative.nl/CCS)
- Website: [Airliquide.com/en/capturing -and-storing-co2.html](https://airliquide.com/en/capturing-and-storing-co2.html)

Note to the editors, not designated for publication:

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