H-vision status update

Dec. 2022

H-vision takes next step towards major industrial CO_2 reduction

The H-vision partners are moving on to the next phase of the initiative, following the productive journey of the last four years, in which the partnership successfully introduced the H-vision concept as a viable CO_2 abatement pathway. Through detailed technical and engineering work, combined with in-depth economic analysis, the group has established the concept at national and European level as an acknowledged CO_2 reduction alternative for hard-to-abate industrial heat. Its application in the Rotterdam port and industrial area can deliver a major contribution – estimated at up to 2.7Mton CO_2 per year – to national and regional abatement targets.

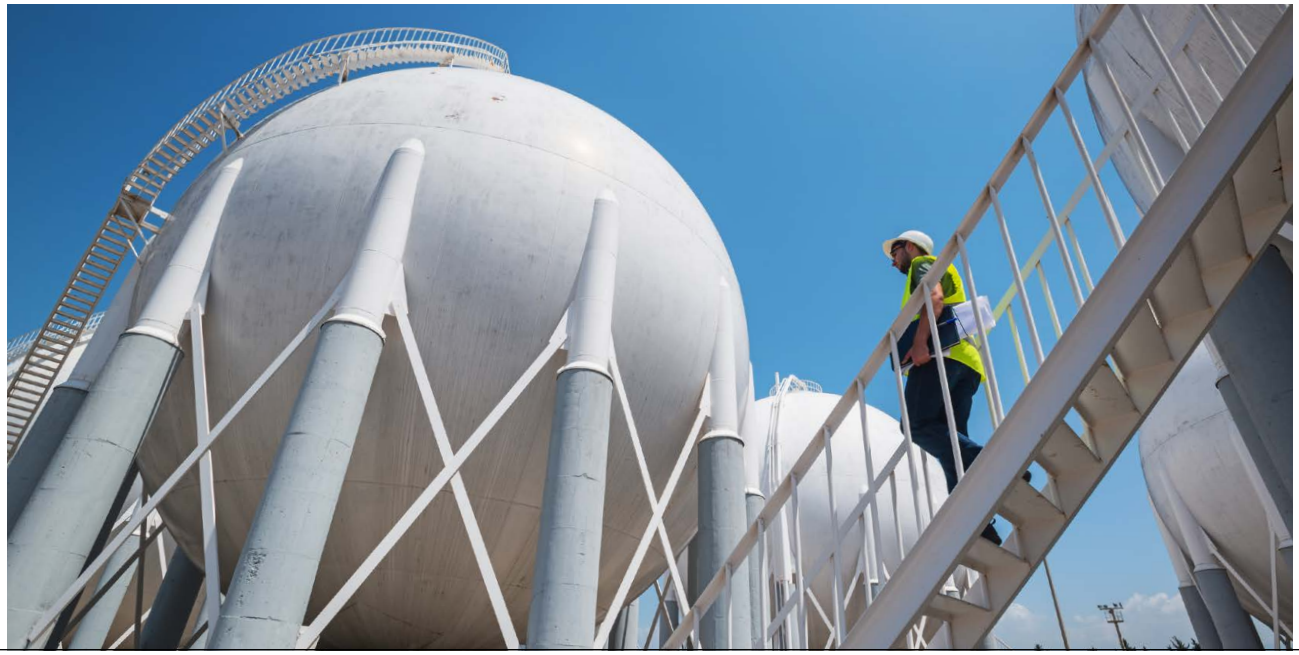
H-vision is ready for the next phase

Ongoing partnership while implementing the H-vision concept

In the new phase, the partnership continues its collaboration as a joint communication and advocacy platform for this decarbonisation approach. This platform will stimulate further development of the concept by sharing insights relevant to its realisation, cooperating further at a European level where appropriate. The platform will be based on the original partnership of Air Liquide, BP, ExxonMobil, Shell and Vopak, with potential additional members. Partners BP and Shell will also continue to develop the projects individually at their own sites, each with dedicated project teams. Vopak and the port of Rotterdam intend to jointly develop any infrastructure deemed necessary to connect the units with existing and new participants

Broad support

The H-vision concept is supported by the CO_2 abatement strategies of the municipality Rotterdam, the Province of South Holland, the national government and the European Commission. Furthermore, the national government has created a new category in the Dutch SDE++ subsidy scheme, which supports hydrogen production from process gases for generation of industrial heat.



The H-vision concept allows industry to take a big step towards achieving the national climate goals

H-vision concept

At present, the high temperatures required for refining and chemicals production are commonly generated in industrial furnaces, where by-product process gases such as refinery gas or cracker gas are burned. This generates large amounts of CO_2 and is usually the largest contributor to a site's emissions. The H-vision concept involves converting these hydrocarbon process gases at large scale into hydrogen, using a process based on proven technology. This is then followed by burning the hydrogen directly in the existing furnaces, which itself generates very little CO_2. As the CO_2 produced during the decarbonisation process will be captured and stored in depleted gas fields under the North Sea, this process eliminates the vast majority of furnace CO_2 emissions.

Future-proof

The H-vision concept remains relevant even in a medium- to long-term future in which a significant proportion of refinery and chemicals feedstock may have shifted to material of biological or circular origin. Generation of by-product hydrocarbon process gas is inherent to many refinery or chemicals production routes, even in future plants. In this case, the H-vision concept could decarbonise these sustainable process gases, thus offering a way to generate negative emissions which is important for achieving Dutch and European climate goals.

H-vision is considered a future-proof decarbonisation pathway and one which could offer negative emissions

Next steps

Through the H-vision collaboration, the partners have built strong working relationships based on a joint vision and common interests. This kind of collaboration and its effective communication is essential for success in the energy transition and for achieving our climate goals. We look forward to taking this positive cooperation to the next phase.

Air Liquide bp Deltalinqs ExxonMobil Port of Rotterdam Vopak

More information at www.h-vision.nl