An East-West hydrogen connection is an indispensable enabler of the hydrogen economy in NL, BE and DE

In June 2024, a delay of the Delta-Rhine-Corridor (DRC) to at least 2032 was announced by the Ministry of Economic Affairs[i]. The DRC includes a hydrogen pipeline that connects the hydrogen network in the west of the Netherlands to the east of the Netherlands and Germany. **With the delay of the hydrogen leg of DRC, there are currently no confirmed pipelines that connect the west of the Netherlands and Belgium to their hinterlands and Germany, before 2030**. A hydrogen ecosystem functions only when demand and supply are connected with transport and storage. **From the ongoing HY3+ study[1], it is evident that for the security of supply:**

- **west NL/BE relies heavily on the available storage in the east**, and
- **east NL/BE and Germany rely heavily on the potential for hydrogen production and import in the west, based on scenario studies used in the project.**

The preliminary results in the HY3+ project indicate that, when dimensioned sufficiently, a single operational, East-West connection in either Belgium or the Netherlands is sufficient for the first years to satisfy both items above.

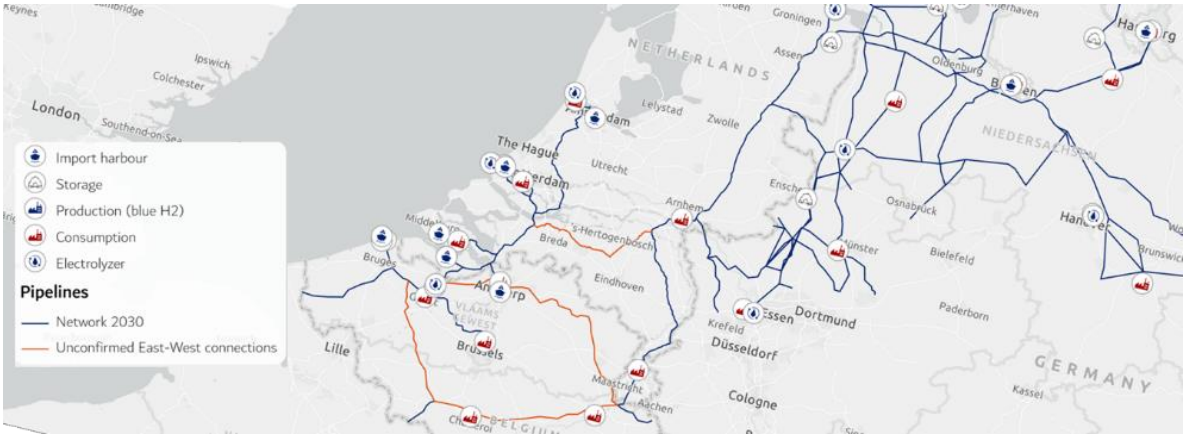

Figure 1 – Supply, demand and storage clusters in the Netherlands, Belgium and Germany, connected with the anticipated hydrogen networks for 2030, as modelled in HY3+. The orange lines connect east and west BE/NL, and are all either unconfirmed or confirmed to be delayed.

[1] HY3+ is a study currently performed by TNO and Arcadis to support its consortium partners with independent insights in the hourly security of supply and demand in the foreseen networks, taking into account physical limitations regarding transport and storage of hydrogen. Results are expected to be public in Q1 of 2025. (www.hy3.eu). Consortium Members: BP, ExxonMobil, Gasunie, Hüttenwerke Krupp Mannesmann, North Sea Port, Port of Rotterdam, Shell, Uniper and Vopak.

The HY3+ consortium emphasizes the need for (at least) one East-West connection to be in operation before 2030, because:

Hydrogen infrastructure availability is an essential first step to kickstart a hydrogen economy

The presence of infrastructure that connects supply and demand is an important prerequisite for developing the hydrogen value chain that supports the decarbonization of industry. The uncertainty related to the completion of infrastructure projects is likely to lead to delays in investment decisions of industrial parties on when and how to decarbonize, regardless of whether the infrastructure delays are the direct cause. This means that our climate targets for 2030 become even more out of sight.

Isolated clusters without storage is a risk

The current information indicates that in 2030 (and in the years after) the **demand** of western industrial clusters in the Netherlands and Belgium is **not connected to the main storage capacity** that will be located in the northeast of the Netherlands and in Germany. According to publicly available scenario studies[ii], these clusters in the west have a high potential demand for renewable hydrogen and can make a significant contribution to the decarbonization of industry in the Netherlands and Belgium. Furthermore, the majority of landing points of offshore wind energy for **production** of intermittent **green hydrogen** is located in the west. Preliminary results of the HY3+ study show that balancing the intermittent supply with the foreseen continuous demand of green hydrogen is crucial, and a **connection to storage is required** to mitigate curtailment of supply or demand of hydrogen. Alternative methods to compensate for the lack of significant hydrogen storage capacity are currently uncertain.

Plurality of routes provides security

European directives and regulations impose obligations for the use of renewable fuels from non-biological origin (RFNBOs), enabling the development of the hydrogen demand. Germany's foreseen demand in the next decade is larger than its combined domestic production and import ambitions[iii]. This has initiated studies on transnational networks such as HY3 and HY3+, to investigate the potential of possible additional routes to import hydrogen from Belgium and the Netherlands.

Plurality of routes provides more security to industrial players that need to take investments decisions.

Intensified import and production from the North only solves part of the puzzle

In case of an absence of an East-West connection, additional hydrogen can be produced and/or imported in the north of the Netherlands and/or North-West Germany, and then transported via the planned infrastructure from Kernnetz and Hydrogen Backbone. However, based on current offtake scenarios in the study, the western clusters in the Netherlands and Belgium have a large hydrogen demand. Intensified import/production in the North of the Netherlands and Germany will play **a limited role in achieving the 2030 decarbonization targets of the Netherlands and/or Belgium**.

The HY3+ consortium therefore recommends to have at least one East-West connection in the cross border network in place in 2030.

[i] Kamerbrief over voortgang en procedure Delta Rhine Corridor, 27-06-2024
[ii] ENTSOE TYNDP (https://tyndp.entsoe.eu/), North Sea Wind Power Hub Pathway Studies (https://northseawindpowerhub.eu/knowledge?topic=5)
[iii] https://www.bmwk.de/Redaktion/DE/Pressemitteilungen/2024/07/20240724-importstrategie-wasserstoff.html#:~:text=Die%20Bundesregierung%20geht%20von%20einem,Importanteil%20nach%202030%20weiter%20steigt