

Infrastructure as a driver of transition

In late April, the port authorities of Antwerp and Zeebrugge merged to form Port of Antwerp-Bruges. There are various reasons for this, of which the energy transition is perhaps the most important, explains Jacques Vandermeiren, CEO of the merged port authority. This presents new opportunities and challenges, particularly in the field of infrastructure.

What the Maasvlakte is to Rotterdam, Zeebrugge is to Antwerp. Not only do they together provide more space for the handling of containers, for example, but their location also offers great benefits. After all, Zeebrugge is located on the coast with its LNG terminal. Just 90 kilometres away, deeper into the hinterland and thus closer to the main production and consumer centres, lies Antwerp with its chemical industry. Connecting the two via pipelines will allow the two platforms to strengthen each other for decades to come.

Pipelines

Particularly in view of the upcoming energy transition. Soon, huge amounts of offshore wind energy will come ashore at Zeebrugge. The port may also be the last stop before storing CO₂ under the North Sea. Jacques Vandermeiren: "In any case, this merger gives us more space. The port of Antwerp is gradually filling up. We even had to make space for Ineos' big Project One investment, and there's not all that much left."

Pipelink is the asset owner and asset integrity manager of approximately 750 kilometres of high pressure pipelines for the chemical industry. These pipelines transport as much as 900,000 tonnes of gases and liquid chemical products annually. Pipeline transport not only bolsters the position of Antwerp's petrochemical industry cluster, but is also essential for Europe's modal shift and energy transition.

Thanks to the merger with Zeebrugge, the potential of both ports can be studied and decisions taken. Thus, it seems only logical that investments in the production of green hydrogen are more likely to take place in Zeebrugge than in Antwerp. This has to do not only with space, but especially with logistics. Building or strengthening electricity connections is significantly more expensive than building infrastructure for gases or liquids. "Moreover, one is often above ground and the other under. That which is visible arouses more public debate. This was also my experience during my past at grid operator Elia, among others. As a result, pipelines are easier to build than high-voltage grids."

No announcement policy

Zeebrugge also offers opportunities for the construction of ammonia and methanol import terminals, among others. They are promising liquid fuel sources for the future, including to ship large quantities of converted, green hydrogen over long distances overseas. Major announcements in the field of green hydrogen, ammonia and methanol, as for example in the Netherlands and Germany, have been almost non-existent for the Port Authority. Very recently, American Plug Power did however announce the first large-scale green hydrogen project in the cluster. The company plans to build an electrolyzer with a capacity of 100 megawatts by 2024 in the new NextGen district in the port of Antwerp. Vandermeiren: "In any case, we have a slightly more modest approach when it comes to our announcement policy. We wait with our announcements until there is more certainty with regard to investments. However, we too are actively exploring the possibilities. A number of very interesting conversations are ongoing, too. There may be more clarity on that in the coming months."

A great sum

However, Vandermeiren does not yet expect any mountains of gold from green hydrogen chains in the short and medium term. Everything still has to be built and a great deal of hydrogen is needed just to make industry in Antwerp greener. It would seem unwise, therefore, to bet on one horse. "Do you know how much hydrogen it will take to make Ineos' new to be built factories completely CO₂neutral?"

Over the next decade, therefore, the Port Authority has more confidence in the blue route, the production of hydrogen from natural gas, whereby CO₂ is captured and stored underground. "Perhaps not the most elegant route, but we can make huge strides in the shorter term." Many key players have joined the Antwerp@C alliance. Together with BASF, Air Liquide, Borealis, ExxonMobil, Ineos, Fluxys and Total Energies, the Port Authority is investigating the technical and economic feasibility of building CO₂infrastructure including a back bone and a liquefaction terminal in the port of Antwerp. Air Liquide and BASF can already take a big step with a first project in the coming years. At the end of 2021, it was announced that they would receive a large European subsidy for their project Kairos@C. A sum of no less than 360 million euros. Vandermeiren: "While this is a great sum, much more money is needed for these investments.

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LPG and propene

When it comes to infrastructure, Pipelink has a crucial role to play. The Port Authority bought the pipeline company five years ago, mainly because infrastructure is set to play an increasingly important role in the transition. Pipelink specialises in transporting chemical products and industrial gases and already operates an asset base of 750 km, including 250 km in the port of Antwerp. This gives the Port Authority the expertise to take the next steps. For example, Pipelink wants to work with gas network operator Fluxys, among others, to further develop the pipeline infrastructure for hydrogen and CO₂, among other things, at the port of Antwerp.

Pipelink, however, is not only looking to Antwerp and Zeebrugge, but to the east and north as well. According to Pipelink director Michel Leyseele, good connections with the Netherlands and Germany are crucial for the European transition.

Leyseele is therefore following the plans for the Delta Corridor between Rotterdam, Chemelot and the German hinterland with more than a passing interest. "We at Pipelink are happy to discuss how we might connect the Flemish ports, too." At the same time, he also advocates more pragmatism. "The discussions about the Delta Corridor often focus on the large-scale transport of hydrogen and CO₂." The implication being that this is politically convenient. "However, there are also opportunities with a shorter timeline for other important (petro)chemical products. For ethylene, excellent infrastructure is already in place with the ARG network. For LPG and propene, among others, we also foresee cross-border opportunities. However, due to national legislation (safety, permits, ed.), today

we mainly see point-to-point pipelines within national borders. With some modifications, these can also be converted into more integral infrastructure, such as ARG."

Cooperation

The trilateral cooperation between Belgium/Flanders, the Netherlands and Germany/NRW seems to be improving significantly recently, Vandermeiren and Leyseele note, enthusiastically. There is also more urgency due to recent crises. The transition is gaining momentum and the various countries and clusters desperately need one another. Vandermeiren: "We will have to do a lot together. Truly no one can go it alone anymore." A good infrastructure is genuinely essential in this regard. ■