Antwerp North Heat Network kicks off with first carbon-free heat delivery to Boortmalt

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On 29 February 2024, Antwerp mayor Bart De Wever pressed the symbolic start button to kick off the Antwerp North Heat Network. A pipeline network across the port of Antwerp links the sites of Indaver Antwerp and malting company Boortmalt. From now on, Boortmalt will use residual heat from Indaver as a substitute for natural gas and CHP to produce malt. In addition, this network is the first 'open access' heat network in Belgium, offering opportunities for new suppliers and customers.
The connection point for a residential heat network to the social housing of Woonhaven Antwerp has also been constructed. This heat network represents significant savings on fossil fuels and a substantial reduction in CO2 emissions. It receives financial support from the Flemish government through the Flemish Energy and Climate Agency.

Heat network fed by industrial residual heat

'Residual heat' is heat that is generated during an industrial production process. A heat network fed with residual heat is an alternative to heating with fossil fuels. It consists of a network of well-insulated pipes that transport hot water from one place (industry) to another (industry and residences) for various heat applications.
In the Antwerp North Heat Network, the residual heat comes from the rotary kilns of Indaver where industrial waste is thermally processed. The heat from combustion is utilized in the form of electricity. However, residual heat still remains in this process. It is this residual heat that is supplied to Boortmalt, which has committed to using the heat in its malt production process in the long term.
The heat is transported from Indaver to Boortmalt at a temperature of approximately 105°C, about 10 km away in the harbor. The cooled water (65°C) flows back to Indaver through a second pipeline to be reused.
The Boortmalt site in Antwerp is the world's largest malting production site. With a production capacity of 470,000 tons per year, it produces the malt used to brew approximately 16 billion beers per year. Significant amounts of heat are required during the malt process. In the past, Boortmalt used combined heat and power systems and gas burners to produce this process heat. By utilizing residual heat, Boortmalt saves an amount of natural gas equivalent to the annual consumption of approximately 10,000 households.

Second phase: residential network

Now that the industrial heat network is completed, the way is clear for the connection of a residential network. This will be constructed by Fluvius in the coming years and will allow the heat supply of schools, public buildings and 3,200 households of two high rise districts in the north of Antwerp to be made more sustainable.

Reduction of CO2 emissions by 80,000 tonnes per year

For this network, the transition from fossil fuel to waste heat means a reduction in CO2 emissions of 80,000 tonnes per year (when the full capacity of the heat network will be used). This corresponds to the annual CO2 emissions of 25 000 Antwerp households.

Open access

An exceptional feature of this network is that it is the first 'open access' network in Belgium. Any company in the port that is a heat producer and/or wants to source heat is welcome to connect. The pipeline network runs, among others, along the sites of the so-called 'Next Gen District'. Port of Antwerp-Bruges clusters companies active in the circular economy on this site. These companies can in turn supply or take residual heat from the network.

Collaboration with many partners

In order to facilitate the industrial heat consumer in its sustainability plans and to provide climate-friendly heating to more than 3,200 social housing units over time, cooperation with numerous partners was necessary. Indaver and Port of Antwerp-Bruges jointly built the first part of the line that now supplies heat to Boortmalt. From this industrial heat network, Fluvius will build the second, residential network on behalf of and in cooperation with the City of Antwerp. To this end, agreements were concluded with social housing company Woonhaven Antwerp, among others. Finally, the Flemish government is an important partner through the financial support the project received. The grant is part of the objective to boost the reuse of industrial waste heat and the deployment of heat networks.

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Quotes

Bart De Wever, Mayor of the city of Antwerp: *"The Antwerp North Heat Network is an achievement to be warmed over for many reasons," says Mayor Bart De Wever. "The heat network is the perfect reconciliation of industrial developments, sustainable solutions and social objectives. The best part of this whole story is that we are realising this with a resource we already had, but the application of which we could not yet fully capitalize on. That can now be changed. By harnessing residual heat, we are showing that our industry can be a pioneer in achieving our climate ambitions while fully committed to sustainable innovation. This is not only beneficial for the environment, but also for our prosperity."*

Paul De Bruycker, CEO of Indaver: *"The successful launch of the Antwerp North Heat Network once again illustrates the power of cooperation between public and private entities. This project reflects Indaver's deeply rooted mission to create value from waste. We deliver the residual heat from our thermal processing facilities via*

pipelines to Boortmalt and later to households. In doing so, we close the loop and with this CO2-free heat provide a sustainable alternative to the use of fossil fuels."

Jacques Vandermeiren, CEO of Port of Antwerp-Bruges: *"The Antwerp North Heat Network leads to a real reduction in CO2 emissions, thanks to the cooperation between the port, industry, and the city. Long-term commitment and the constant heat exchange between industrial companies in the Antwerp port such as Indaver and Boortmalt enable the development of a larger heat network. This allows schools, large buildings, and 3200 homes in Antwerp to be supplied with heat in a climate-friendly manner in the long run. As the only heat network in Belgium, the network also offers the possibility for future expansions with additional heat suppliers and consumers. We are proud of this important step in the energy transition."*

Yvan Schaepman, CEO of Boortmalt : *"It is amazing to see the power of teams when spirits are well-aligned on the same objective. The heatloop project in Antwerp is the largest CO2-saving project worldwide for Boortmalt. It is massive, and we are progressing well towards our 2035 carbon neutrality ambition."*

Tatjana Scheck, Alderman for Environment and Social Affairs Antwerp: "*The Antwerp North Heat Network shows that Antwerp's climate policy is also a social policy. More than three thousand social housing units at Luchtbal and Roozemaai will soon be heated in a climate-neutral way. Sustainable heat is not a privilege for us, but must be available to as many households as possible."*

Guy Cosyns, Director of Customer Service and Data Management at Fluvius: "*In active cooperation with various stakeholders such as heat producers, heat suppliers, consulting firms, and others, Fluvius is actively contributing to the realization of a city-wide heat network in Antwerp, spread across different heat clusters in the city, including the Antwerp North heat cluster. Soon, we will commence the installation of the heat network in the neighborhoods of Luithagen, Rozemaai, and Luchtbal, connecting not only schools and public buildings but also the residential buildings managed by the housing association Woonhaven, serving a total of 3,200 connected households."*

Wouter Gehre, general manager of Woonhaven Antwerp: *"With the future heat network in the northern part of the city, Woonhaven Antwerp can guarantee an easy-to-use CO2-free heating system for approximately 3,200 families in Rozemaai and Luchtbal."*