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Chiyoda Corporation and Cleantech Scaleup Qpinch establish cooperation to roll out breakthrough energy efficiency technology in Japan.

- The petrochemical and chemical industries are **facing a challenge to reduce CO_2 emissions** and require large-scale solutions to reduce these.
- **Energy efficiency is most effective in reaching this goal** with the added bonus of also saving energy cost.
- Qpinch is **technological breakthrough to transform waste heat back into process heat**, thereby saving energy and emissions. First units of the solution went live in the first half of this year in the Port of Antwerp's petrochemical cluster.
- **Chiyoda Corporation**, a world leading provider of services and solutions in the Oil & Gas, petrochemical and chemical industry **is the first Engineering Procurement and Construction (EPC) company to sign a cooperation agreement for rollout of Qpinch technology in Japan and other regions**.
- The **Port Authority of Antwerp announces an investment of €1 million in Qpinch** via a convertible note through its Transition Fund.

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Chiyoda Corporation and Qpinch announce a cooperation to implement the breakthrough Qpinch Heat Transformer technology with customers in Japan and other regions.

The technology has been implemented with first customers in the Port of Antwerp's petrochemical cluster and is ready for global rollout.

The climate challenge in the industry

The industrial sector must achieve net-zero emissions by 2050 at the latest. Many industries use vast amounts of thermal energy currently produced with fossil fuels such as natural gas or coal, resulting in substantial CO_2 emissions.

Energy efficiency is essential in reducing emissions fast in the coming years and next decades. The Qpinch heat transformer is a new tool for achieving this goal.

The solution

Any thermal energy used in processes will eventually end up as waste heat, i.e., low-temperature heat cooled to the environment.

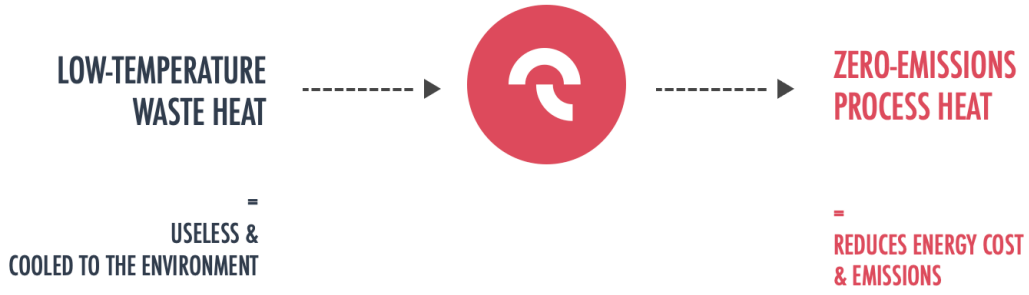
Qpinch's revolutionary and patented heat recovery technology converts this waste heat back into valuable heat of higher temperatures for reuse in the same plant. Thus, factories can achieve the same output with fewer energy costs and lower emissions since less primary energy is needed.

The science and engineering behind Qpinch

The ATP-ADP cycle – the energy system found in all living cells in humans, animals, and plants – was the inspiration for using chemistry to design a new heat pump. By mimicking this process on a large, industrial scale, Qpinch can raise waste heat by 50 to 100+ °C.

Qpinch developed the technology specifically for the Oil & Gas and petrochemical industries, where conventional heat pump technology is rarely applicable due to its limitations. The novel approach, developed with the

assistance of Prof. Chris Stevens, head of the SynBioC department at Ghent University, Belgium, uses a reversible chemical reaction with phosphoric acid.



General Manager of Chiyoda's Business Innovation Dept. Yasuhiro Inoue, says: *"Our clients expect us to be on the lookout for innovations. Emissions reductions are a strategic and high-priority issue with our clients. With the Qpinch technology and our strength in EPC execution and integration of various technologies, we can bring them additional and substantial savings, both in emissions and energy costs. We are excited to be the first EPC to secure a partnership for this technology in the Japanese market and our customers in the world."*

Port of Antwerp CEO Jacques Vandermeiren says: *"It is exciting to see that a scaleup based in our innovation ecosystem in the Port of Antwerp will be able to prove their solution in such an important market as Japan. We believe Qpinch technology can play a significant part in helping achieve sustainability targets faster in petrochemical cluster such as ours and in other parts of the world. I am therefore happy to announce that we have decided to invest €1 million with our Transition Fund as contribution in a €4 million convertible note round raised by Qpinch with its current shareholders."*

Erik Verdeyen, Chief Marketing Officer says*: "This cooperation with a world-leading Engineering and EPC company – a first – comes at a time we are ready to roll out our solution on a large scale. Our first units at petrochemical clients are running and have proven their value. Having access to such an important and demanding market like Japan is a major milestone. The endorsement of the Port of Antwerp's Transition Fund and their contribution to a successful funding round will also help us in reaching new clients and new markets."*

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About Chiyoda Corporation

Established in 1948, Chiyoda Corporation is a world leading, fully integrated international Front End Engineering Design (FEED) and Engineering Procurement and Construction (EPC) Company in the oil and gas industry, with worldwide project experience. Chiyoda Corporation have extensive experience in the field of energy saving.

About Qpinch

Qpinch introduces breakthrough technology to reduce industrial emissions and energy use. The Qpinch Heat Transformer uses chemistry inspired by nature's energy system (the ATP-ADP cycle). This patented and novel approach overcomes the hurdles faced by conventional technologies to upgrade waste heat to process heat. The large-scale and broad applicability position Qpinch as a strategic solution to reduce emissions faster and with fewer expenses. The company has solutions for the largest consumers of energy globally: Petrochemicals, food & beverages, paper & pulp, and other industries that require substantial amounts of process heat.

Qpinch is a spin-off from Ghent University with headquarters in the Port of Antwerp.

About the Port of Antwerp

As Europe's second-largest port, the Port of Antwerp is a major lifeline for the Belgian economy: more than 300 line services to over 800 destinations ensure global connectivity. The Port of Antwerp annually handles around 231 million tonnes of international maritime freight, and is home to Europe's largest integrated chemical cluster. The Port of Antwerp accounts, directly and indirectly, for a total of around 143.000 jobs and more than €20 billion added value.

True to its mission 'a home port vital for a sustainable future', Antwerp Port Authority aims to flexibly respond to a rapidly evolving maritime market, allowing the port to continue playing its role as a leading world port. The emphasis in this respect is on cooperation, adaptability, a strong focus on innovation and digitisation, and on sustainable added value, as well as on responsibility towards society.

Antwerp Port Authority is a limited liability company of public law, with the City of Antwerp as sole shareholder. It employs over 1.600 people. Port alderman Annick De Ridder is chairman of the Board of Directors and Jacques Vandermeiren is CEO and President of the Executive Committee, which is responsible for the day-to-day management. www.portofantwerp.com

Suggested tags

Sustainability, Innovation, Climate Action, Net-zero Emissions, Decarbonization, Energy Efficiency, Industry, Petrochemicals, Refinery, Scaleups

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