

Hyoffwind: Messer Scaling Renewable Hydrogen for Industrial Decarbonization

Industrial decarbonization has entered a new phase. The challenge is no longer to define ambition, but to deliver scalable and reliable solutions that can be integrated into existing operations. The Hyoffwind project represents such a step forward, establishing one of Belgium's first industrial-scale renewable hydrogen production facilities. This achievement was recently recognised by EIGA with the Environmental Leadership Award.

Located in the Port of Zeebrugge, Hyoffwind enables industrial users, energy-intensive applications, and selected transport segments to reduce emissions while maintaining operational continuity with locally produced, low-carbon hydrogen available at industrial scale.

Hyoffwind is developed as a joint initiative between Messer Benelux, Virya Energy (Colruyt Group), and HyoffGreen, with engineering and construction delivered by John Cockerill and BESIX. Through HyoffGreen, the Flemish Government is also a partner in the project, providing a clear policy signal in support of industrial-scale clean hydrogen. This collaboration brings together Messer Belgium's long-standing expertise in industrial hydrogen production and supply with Virya Energy's experience in renewable electricity, creating a fully integrated value chain from green power to industrial hydrogen use. The project translates European and Belgian hydrogen strategies into concrete implementation, demonstrating how public and private actors can jointly advance climate-neutral industrial solutions.

The facility is scheduled to start operations in 2026 with an initial 25 MW electrolyser. A modular design allows for future capacity expansion as demand for clean hydrogen grows. The plan is to produce Hydrogen using renewable electricity, supported by Guarantees of Origin, ensuring production with significantly reduced lifecycle emissions. A high level of automation is intended to ensure reliable and efficient operation in a location near industrial customers and existing logistics infrastructure.

At full initial capacity, the plant is expected to produce approximately 3,600 tonnes of renewable hydrogen per year, with an estimated potential avoidance of 24,000 tonnes of CO₂ emissions annually by replacing fossil-based hydrogen and conventional fuels in industrial and mobility applications. Beyond production, the project is expected to create direct value for users. Industrial customers would have access to a reliable supply of renewable hydrogen, supporting productivity and helping them advance their long-term decarbonisation and competitiveness objectives. In heavy-duty transport and other hard-to-electrify segments, hydrogen provides a viable low-emission alternative. By offering a local and scalable supply solution, Hyoffwind supports companies in advancing their decarbonisation strategies.

At system level, Hyoffwind contributes to the development of a regional hydrogen ecosystem. Its integration into the Port of Zeebrugge positions the project within an emerging energy hub with access to existing and future infrastructure, including potential hydrogen transport networks and international corridors. Coupling renewable electricity production with hydrogen generation also supports grid flexibility in an energy system with increasing shares of variable renewables.

For Messer, Hyoffwind represents a concrete step in its long-term strategy to support industrial decarbonisation through renewable hydrogen. Building on Messer's established capabilities in industrial gas production, distribution, and hydrogen safety, the project plans to extend these strengths into

low-carbon and climate-neutral solutions. Renewable hydrogen is a strategic pillar in Messer's sustainability approach, enabling customers to reduce emissions while maintaining reliable and safe operations. Through Hyoffwind and through active engagement in partnerships and industry initiatives, Messer contributes to the broader development of hydrogen applications across industrial, energy, and mobility sectors. In this context, Hyoffwind is not a standalone project, but part of a wider strategic shift toward the industrial implementation of clean energy solutions. The project demonstrates that renewable hydrogen can be produced and supplied at scale under real market conditions, combining technological maturity, operational reliability, and measurable environmental impact within a scalable and safe framework.

Hyoffwind serves as a concrete example of how structured collaboration, technological maturity, and measurable environmental impact can translate decarbonisation ambition into industrial reality.