

Case story
Liquid Wind, Sweden

Timely collaboration drives Liquid Wind's eFuel development

Partnership and time are critical factors in the energy transition to net zero. Making sure processes are optimized from the beginning is the key to reaching sustainability and financial targets across industries. When Liquid Wind develops their first wave of eFuel facilities to help decarbonize hard-to-abate sectors such as shipping, all project stakeholders must work together.



A driver in the net zero transition

Founded in 2017 in Gothenburg, Sweden, Liquid Wind aims to decarbonize the shipping industry by utilizing eMethanol; a fossil-free eFuel, created by combining green hydrogen and biogenic CO₂. Liquid Wind's scalable business model leverages unique expertise and state-of-the-art solutions to develop standardized and modularized eFuel production facilities. With an ambitious deployment plan, Liquid Wind intends to take a Final Investment Decision (FID) for more than 10 facilities by 2027 and scale up to 500 by 2050.

Accelerating eFuel innovation and production

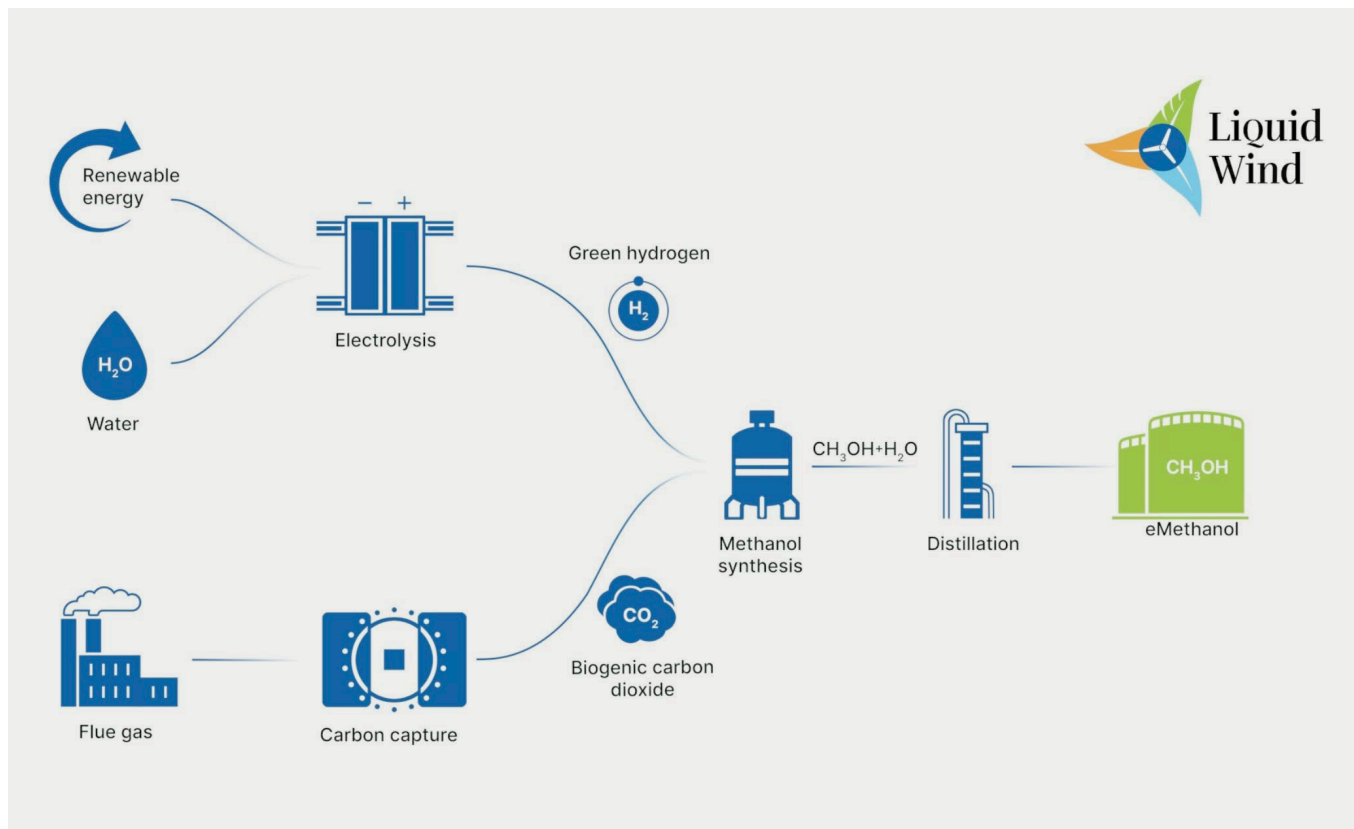
Technology providers often fine-tune their solutions for specific systems. To optimize the overall technology and production of eFuel at the plant level, trade-offs are required between different technologies.

That is why Liquid Wind established the eFuel Design and Performance Centre (DPC), in collaboration with partners Alfa Laval, Carbon Clean, Siemens Energy, and Topsoe. The eFuel DPC is the first of its kind, with a joint research and development department, where all five partners collaborate to enhance the deployment of eMethanol facilities. By leveraging each partner's technologies and modular solutions, the DPC is the foundation for developing and building eMethanol plants in a manner that is rapid, efficient, and cost-effective, paving the way for widespread adoption of eFuels in the shipping industry.

The importance of early involvement

Heat integration is important to help optimize the energy efficiency of the eFuel production process, helping to reduce the operating expenses of the plant. This heat reintegration is only possible because Alfa Laval is involved as early as early as during the project design phase. In the design phase, the process parameters can still be adjusted to maximize energy efficiency by utilizing the full capacity of advanced heat exchanger technology.

Not only does this save a huge amount on costly process redesigns, but it also means that we can factor in installation and service optimizations. For example, a 10-minute meeting to discuss the layout of the pipes could save months of redesigning



further down the line when a problem occurs. This means that both time and product longevity are prioritized as much as cost when it comes to the energy efficiency of the processes.

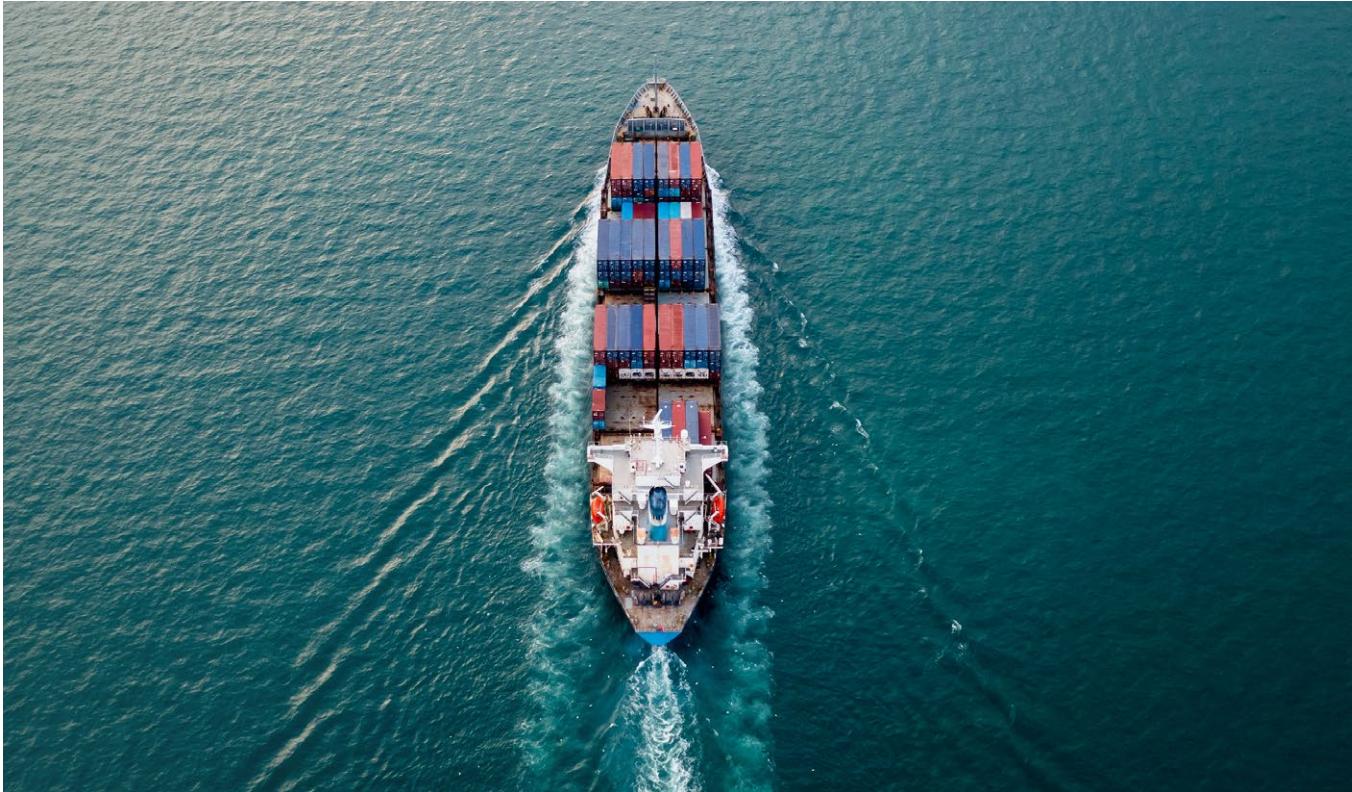
About eFuel

eFuel, more specifically eMethanol, from facilities developed by Liquid Wind, is a synthetic fuel made from renewable electricity and biogenic CO₂. It can be produced at scale to meet the growing demand for fossil-free fuel alternatives.

It has a high volumetric energy density and because it is liquid at ambient temperature and pressure, it is easy to store, transport and distribute – using the existing transportation and storage infrastructure.

Digital Twin Innovation

To achieve their goals to develop multiple eFuel facilities, Liquid Wind has implemented a Digital Data Twin that streamlines the process of replicating facilities. This solution not only accelerates knowledge acquisition during project development, but also improves overall quality, which is critical to the company's sustainable success and cost-effectiveness. It also promotes collaboration between Liquid Wind and its partners.



Pioneering eFuel collaboration

eFuels are essential for transitioning from fossil fuels in the shipping industry. Liquid Wind, a leading developer of eFuel production facilities, cooperates closely with Alfa Laval to minimize energy consumption in its projects.

By involving Alfa Laval early in their design processes, the facilities can be optimized for maximum energy efficiency by fully leveraging the capacity of Alfa Laval's heat exchangers.

Did you know...

...that Liquid Wind is currently developing four eFuel projects, with a target to take Final Investment Decision (FID) for 10 additional facilities in the Nordic countries by 2027.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

