

2022

Annual Report



Liquid Wind

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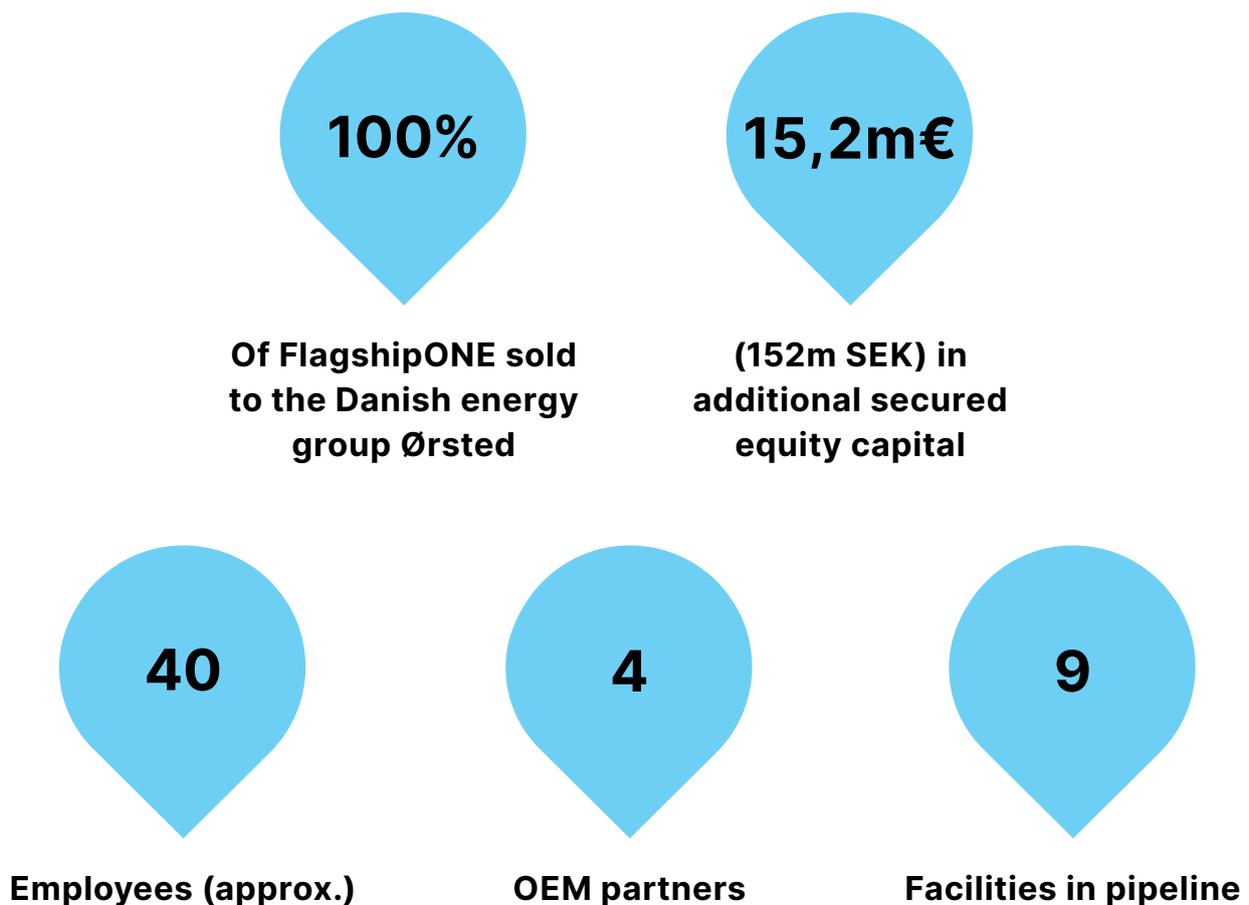
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Liquid Wind in Brief

With the need for a rapid transformation towards a sustainable society, Liquid Wind aims to advance the electrification of the transportation industry and to accelerate the transition to a world without dependency on fossil fuel. The group comprises the Parent company, Liquid Wind AB and 4 wholly owned subsidiaries.

Together with its Swedish and international partners, Liquid Wind is developing a network of large-scale electrofuel production facilities, with the first facility expected to be ready for use from 2025. Since the company was founded in 2017, considerable progress has been made, including the start of construction of its first facility project, FlagshipONE in Örnsköldsvik, Sweden. Full ownership of the project has been passed over to energy group Ørsted as a result of Liquid Wind's first project sale.

By converting renewable electricity and biogenic carbon dioxide from biomass power powerplants into climate neutral liquid electrofuel, Liquid Wind offers hard-to-abate sectors such as global shipping an opportunity to accelerate their transition to fossil-free propulsion.



Statement from the CEO

Milestone Final Investment Decision taken for FlagshipONE, the largest green electrofuel project in Europe.

2022 was truly an exciting year for Liquid Wind with several important milestones. During the year, our first project FlagshipONE reached the Final Investment Decision (FID), with construction starting in May 2023 at the site hosted by power utility Övik Energi in Örnsköldsvik, located in north-eastern Sweden. FlagshipONE was sold to Ørsted, which means that they will take over from here and lead the construction and later manage the operations. This is a very positive outcome for Liquid Wind, for Ørsted, for all our partners and in the long run also for the planet. The decision means that the first and largest commercial scale fossil-free electrofuel production facility will come to life already in 2025.

Furthermore, Liquid Wind successfully completed a Series B funding round in the spring/summer, raising a total of EUR 15.2 million from many of our existing corporate investors in addition to attracting a new financial investor. This manifests that our existing investors; Uniper, Alfa Laval, Siemens Energy, Topsoe, and Elyse remain committed to our mission, with HyCap Fund I SCSp (“HyCap”), a UK-based hydrogen specialist investment fund as the newcomer. With the proceeds from the Series B round, the company continues developing electrofuel production projects in the Nordic countries to help decarbonize the maritime industry.

Industry-wide collaboration on Europe’s first hub for green electrofuel

In the early fall we partnered up with Stena Line, DFDS, Ørsted and the Port of Gothenburg to establish an electrofuel hub for eMethanol. As the largest port in Scandinavia, Gothenburg is the ideal choice for the first delivery and bunkering point for green electrofuel.

The founding event was visited by the Swedish Minister for Energy and Digital Development at the time, Khashayar Farmanbar (S). The Minister welcomed the initiative as an important milestone for carbon neutral shipping.

In early December, we followed up on this theme by gathering frontrunners in the electrofuel sector in Gothenburg to discuss our latest advances and future plans for large-scale production of fossil-free fuels and decarbonization of the shipping industry. The event was appreciated in the sector and provided additional confidence in eMethanol as a fuel and Gothenburg as a hub.

Having already seen considerable progress in 2022, we have only just begun the journey to become the leading developer of electrofuel production facilities. Our liquid electrofuel is the most sustainable- and fastest-to-implement green alternative to fossil fuels in shipping. It is also without doubt the best sustainable alternative electrification, when direct electrification is not an option due to range or volume. The Port of Gothenburg, for example, has for many years been very ambitious in its environmental work and sees electrofuel as an important part of the fuel mix necessary for the shipping industry’s green transition. The Swedish Government has also chosen the industry-wide electrofuel initiative in the Port of Gothenburg to be a candidate in the Green Shipping Challenge, an international initiative launched during COP27 in Sharm-el-Sheikh.

Full speed towards additional electrofuel production facilities

During 2022, we partnered with two new site hosts for establishing our second and third electrofuel facility: one with Sundsvall Energi and one with Umeå Energi, two power utilities located in north-eastern Sweden.

With a planned production capacity of 100,000 tons of fossil-free electrofuel per year, the two facilities will have twice the capacity compared to FlagshipONE in Örnsköldsvik.

The maritime sector will need huge amounts of alternate fuel going forward. In 2022 alone, a record number of new dual fuel capable vessels and retrofit engine orders were placed. One year ago, we were looking at 73 methanol capable vessels on order ready for delivery by 2025. Early spring this year, the number surged to 131 new methanol capable dual fuel vessels to be delivered from 2025.

The growing uptake by the shipping industry and an accelerating regulatory focus on decarbonization are two key drivers for continued growth and further project development. Our approach is based on integration and optimization of already existing and proven technologies by using a modular design to accelerate roll-out at scale, resulting in a low-emissions and low-toxicity method for eMethanol production. Integrating our state-of-the-art technology leads to faster cost out and speed to market, reducing eMethanol costs for customers within the shipping industry.

Good Position for Further Growth

Thanks to the dedicated work and spirit of our team and family of partner companies, we have made great progress in becoming the leading developer of electrofuel production facilities. Together, we have reached many milestones during the last twelve months, and we have

put Sweden on the global map as a country pioneering the development and production of sustainable electrofuel. In times of energy crisis, war and political conflicts, we are enabling local production of fossil-free fuel in Europe here and now, and for the future.

During the year, we have attracted new talents by increasing the number of people working at Liquid Wind from 25 to more than 40. This significant increase is necessary to deliver on our growth plans. With ambitious targets of developing multiple facilities per year, we intend to accelerate our growth in the coming years.

Based on our strategic plans, updated in the spring of 2023, we aim to develop a total of 10 facilities during the coming 4-5 years. This is an ambitious plan; however, we are confident that we will make it happen thanks to, among other things, closer integration with our OEM partners and important learnings from the facilities already being developed.

To conclude, I would like to send my thanks to all our stakeholders for contributing to the continued progress of Liquid Wind. I am excited about what 2023 holds and look forward to sharing more updates from our progress through our quarterly newsletter and our website.

Best regards,



Claes Fredriksson
Founder and CEO



Key Achievements

2017

- Liquid Wind founded by Claes Fredriksson

2018

- Established collaboration with maritime value chain
- Selected first Consortium partners
- Liquid Wind team grows to 3

2019

- Raised 6M SEK from angels and 2M SEK via crowdfunding
- Liquid Wind team grows to 7

2020

- Seed round closed at 13M SEK
- Övik Energi secured as first facility host
- Liquid Wind team grows to 10

2021

- Submitted environmental permit application for first developed facility FlagshipONE
- Secured SEK 151 million from the Swedish state climate investment programme “Klimatklivet”
- Named Top 5 Energy Start-up globally by StartUs Insights
- Closed Series A funding at 40M SEK
- Established office in Denmark
- Liquid Wind team grows to 20

2022

- Raised 152M SEK in Series B
- Liquid Wind contributes to establishing Gothenburg as a European electrofuel hub
- Secured environmental permit application for FlagshipONE
- Ørsted acquires full ownership of FlagshipONE
- Power utility Sundsvall Energi secured as second facility host
- LOI signed with Umeå Energi as third facility host
- Established office in Finland
- Liquid Wind team grows to 29

What We Do

About Liquid Wind and electrofuel

Our Business

Liquid Wind develops replicable commercial-scale production facilities to convert biogenic carbon dioxide and renewable electricity into fossil-free electrofuel. This is done through a standardized and modularized approach which enables efficient replication of the electrofuel facilities.

Together with its partners, Liquid Wind is committed to bringing green liquid fuel to market at scale from 2025 and onward.

The ambition is to reduce the world's dependency on fossil fuels by offering hard-to-abate sectors such as global shipping an opportunity to accelerate their green transition through the use of electrofuel.

The Market for Electrofuel

Phasing out fossil fuels and replacing them with electrofuel is an important piece of the puzzle to reach a fossil-independent maritime vehicle fleet in 2050. Electrofuel is notably important in sectors that are otherwise difficult to electrify.

The maritime industry needs to accelerate its transition. In Europe, the trend towards more freight transport shifting from road to sea has further accelerated the already urgent need for fossil-free maritime fuels. 99.9 per cent of the world's maritime fuels are currently of fossil origin¹, and according to the International Energy Agency (IEA), shipping emissions have increased by 40 per cent over the past two decades. The sector now stands for 3 per cent of the world's total greenhouse gas emissions. It uses approximately 300 million tons of fossil fuel per year, which results in annual emissions of more than a billion tons of carbon dioxide, according to the United Nations Conference on Trade and Development (UNCTAD).²



If shipping was to replace fossil fuels with sustainable electrofuel from facilities designed by Liquid Wind, carbon dioxide emissions are estimated to be reduced by over 90 per cent. Powering their ships with electrofuel would allow cargo owners to drastically reduce their emissions and deliver on their sustainability goals. Electrofuel production also creates opportunities for the paper and pulp industries to convert their carbon dioxide emission into valuable products. In addition, electrofuel enables the energy sector to balance the electricity grid and lets engine suppliers continue to develop their sustainable offering in an otherwise mature industry.

Electrofuel will play a key role in the green transformation of shipping. Ports, like the Port of Gothenburg, is at the forefront for new standards and regulations. The Swedish government has commissioned a study to look at how Sweden can advance with more green shipping corridors, and in 2022 the report "On course for green shipping corridors", which mentions electrofuel and Liquid Wind, was published. In 2022, Sweden also joined the Green Shipping Challenge initiative launched at the COP27 climate summit.



¹ Source: UNCTAD - Review of Maritime Transport 2019

² Source: UNCTAD - "Why should we talk about a 'just and equitable' transition for shipping?"

Why electrofuel? Advantages and opportunities

Electrification of shipping by green electrofuel

Electrofuel is fossil-free and renewable, it can be implemented rapidly to accelerate the industry's green transition, and it meets rigorous environmental standards from the start. It is also safe to store and easy to distribute.

While coastal shipping can be electrified using battery power, the bulk of global shipping – with its long transport distances – requires liquid electrofuel. In contrast to biofuels, which are constrained by the limited availability of raw materials needed in their production processes, electrofuel has the capacity to achieve the scalability needed to power global shipping.



Low Emissions

Reduced climate impact versus traditional fuels.



Liquid

Easy to store, use and transport.



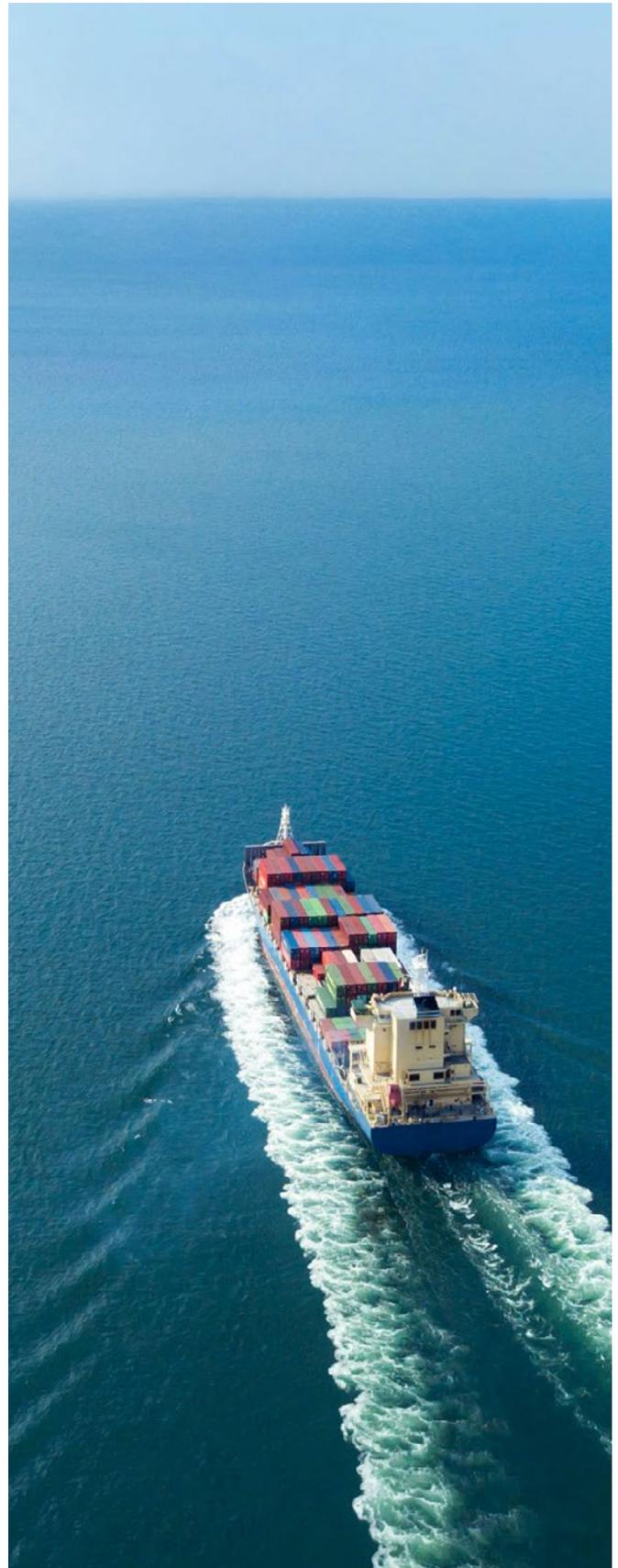
Low Hazard

Dissolves rapidly. Low marine toxicity.



Scalable

Resources available to meet growing demand.



Acknowledgements

Liquid Wind has been named one of the top 5 energy startups in the world by the business intelligence company StartUs Insights.

In 2021, Liquid Wind was awarded a SEK 151 million investment grant from Klimatklivet to develop its first electrofuel production facility in Örnsköldsvik. Klimatklivet is administered by the Swedish Environmental Protection Agency and supports investments that reduce greenhouse gas emissions.

Strategy and Goals

Scalable Electrofuel Production

Liquid Wind's business is supported by the growing focus on decarbonization from both consumers and regulators. By 2050 global production of eMethanol is expected to reach 250 million tons per year, mainly due to the growing use in the shipping industry.

Liquid Wind's scalable business model is based on the company's unique know-how and state-of-the-art solutions to develop projects for commercial scale electrofuel production facilities and to sell or license, in the longer term, its unique competence within development, financing and management of the production facilities in a scalable way.

Long-term, the goal is to have developed 500 electrofuel facilities worldwide by 2050. This would contribute to reducing carbon emissions from global shipping by 90 million tons per year. Including the ongoing establishment of production facilities in Örnköldsvik, Sundsvall and Umeå, Liquid Wind plans to establish 10 additional facilities in the Nordic countries with a Financial Investment Decision (FID) by 2026.

Expanding the company's network of electrofuel facilities at a rapid pace is made possible through Liquid Wind's cutting-edge scalable business model.

Liquid Wind uses proven technology and standardized design to accelerate roll-out and speed to market, which also results in reduced electrofuel costs. Planning and integration processes are carried out with the help of a Digital Twin solution, allowing Liquid Wind and its partners to plan, test and efficiently operate facilities through the implementation of virtual copies of the physical facilities.

In addition, strategic partnerships play an important role in engineering, developing and financing the network of electrofuel facilities. Liquid Wind's business model is supported by integration of proven technology solutions from its partners, represented by some of the sustainable technology industry's smartest minds and most prominent brands.

The process of developing a new electrofuel facility can be replicated wherever the necessary resources of wind or solar power and biogenic carbon dioxide are available, creating long-term and sustainable investment opportunities.

By building a solid pipeline of development projects for commercial scale electrofuel facilities, Liquid Wind aims to increase the value of the unique know-how and intellectual property that is designed into each project company (SPV) for the project investors.



Develop

Optimum locations are sourced with biogenic CO₂, power and appropriate permits.



Finance

Facilities are designed to attract investors, providing a bankable structure and revenue stream based on long-term supplier and buyer agreements.



Build

With our expert EPC partners, we efficiently manage every aspect of engineering, procurement and construction.



Manage

Our 'Digital Twin' enables detailed monitoring and management of daily operations to optimise efficiency.

Accelerating maritime decarbonization through AI and data sharing

Liquid Wind has a strong vision of expanding its business and developing several electrofuel facilities in parallel. To achieve its scaling goals, the company has developed a Digital Twin solution which enables rapid replication of the facilities. The solution also allows Liquid Wind to quickly capture learnings in the project development process and contributes with increased quality, which is important for the company's long-term success and cost-efficiency. Moreover, the solution facilitates efficient collaboration between Liquid Wind and its partners.

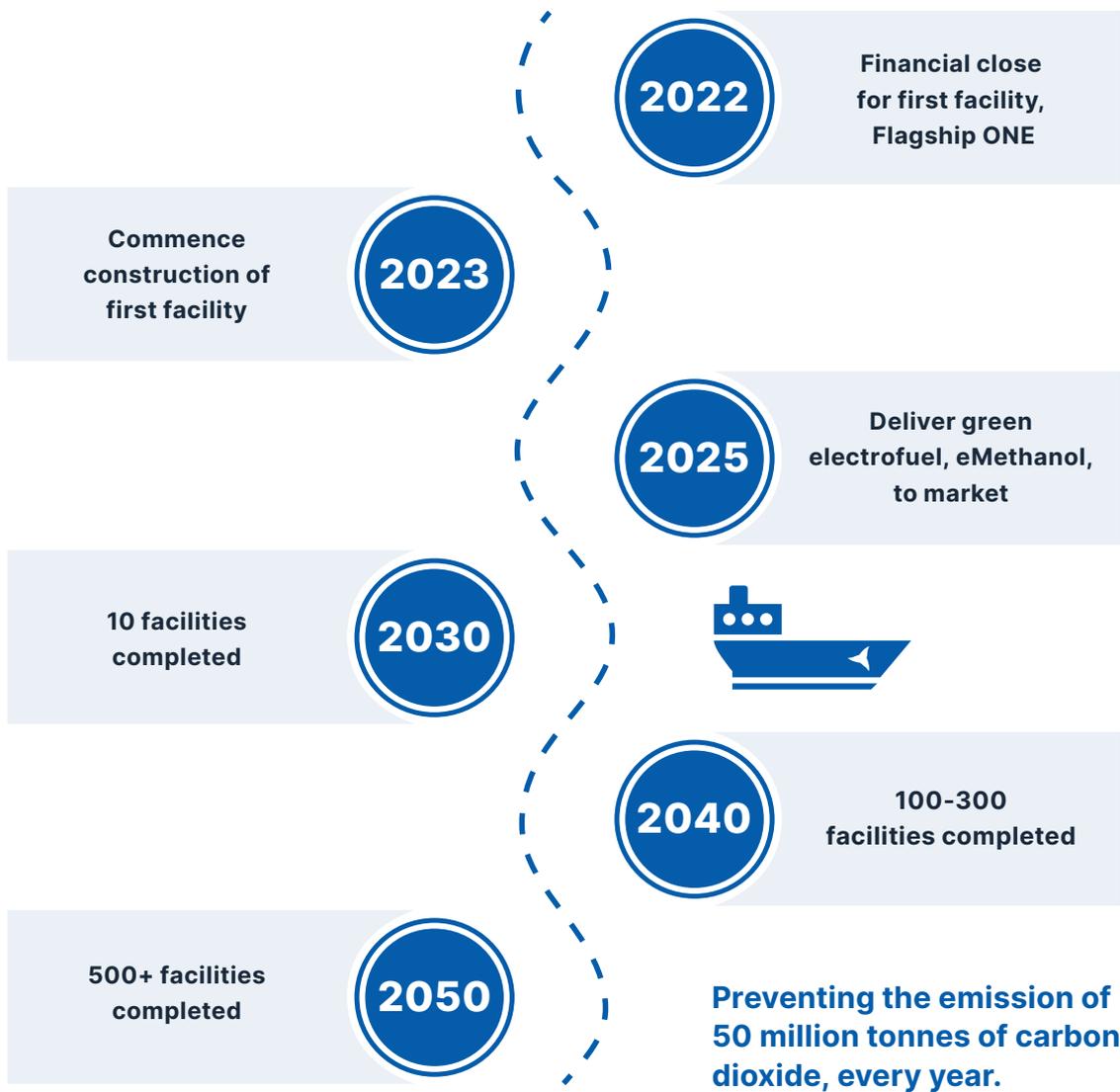
The Liquid Wind Digital Twin supports the full lifecycle of the facility projects. It allows the company to set up cloud-based platforms for managing information throughout the projects. In construction projects, predefined common structures are fundamental for seamless interaction and transfer of data between applications and phases. Through its Digital Twin model, Liquid Wind applies three main predefined structures, namely a reference designation system, a work breakdown structure and a cost breakdown structure.



The establishment of electrofuel production is taking off

Liquid Wind is making steady progress towards bringing sustainable electrofuel to market at scale. The network of electrofuel plants is planned to be rolled out in Europe and on a global scale, with the first facilities being built in Sweden.

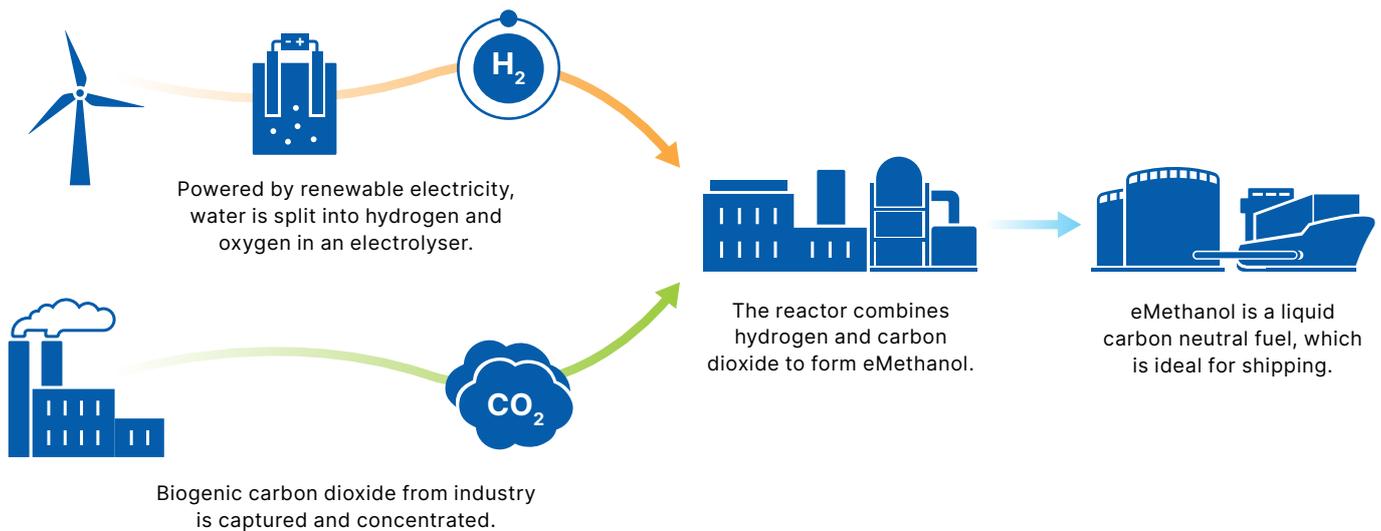
Over the coming years, Liquid Wind will focus on reaching several strategically important milestones. These include the already started construction of the facility in Örnsköldsvik, FlagshipONE, which will start to deliver electrofuel in 2025, and the completion of the company's 10 first projects by 2030.



Facility projects, sold and in development

Facility	State	Site Selection	Start of Construction	Start of Production	Capacity (tons)
FlagshipONE	In construction	Örnsköldsvik	2023	2025	50,000
FlagshipTWO	In development	Sundsvall	2024	2026	100,000
FlagshipTHREE	In development	Umeå	2025	2027	100,000

Liquid Wind's production process of green electrofuel



Oxygen is released and can either be reused or vented. Furthermore, the electrofuel produced in our facilities reduces CO₂ (Carbon Dioxide Emissions) by to 95 per cent, reduces NO_x (Nitrogen Oxides) by up to 80 per cent, and eliminates SO_x (Sulfur Oxides) and particulate matter emissions.

Case: FlagshipONE

Liquid Wind's first delivered project has shown rapid progress with several important milestones reached since the project start in 2020, proving that large-scale production of sustainable eMethanol is ready to take off. In 2022, the project secured the facility's environmental permit and reached a Final Investment Decision (FID). In December 2022, FlagshipONE was sold to the energy group Ørsted.

FlagshipONE will become Europe's largest production site for sustainable electrofuel and will start to deliver liquid electrofuel to the market in 2025. At the facility, 50,000 tons of electrofuel will be produced per year and 70,000 tons of carbon dioxide will be captured.

The facility will be connected with the local combined heat and power (CHP) plant Hörneborgsverket, run by the municipal power utility Övik Energi AB. It will turn biomass-based emission and fossil-free sustainable energy into

carbon neutral liquid electrofuel. Directly adjacent to FlagshipONE and Hörneborgsverket is a port with facilities for fuel storage and loading of ships. In May 2022, the then Swedish Minister for Business, Industry and Innovation, Karl-Petter Thorwaldsson, visited the site in Örnsköldsvik.



Claes Fredriksson, CEO & founder, Liquid Wind; Kristina Säfsten, CEO Övik Energi; Karl-Petter Thorwaldsson, Minister for Business, Industry and Innovation.



FlagshipONE Ørsted, Örnsköldsvik Sweden, Image by Ørsted.

Who We Are

Liquid Wind is a leading developer of sustainable electrofuel production facilities with a vision to reduce the world's dependency on fossil fuel, particularly in hard-to-abate sectors such as global shipping. The company is headquartered in Gothenburg, Sweden, with offices in Denmark and Finland.



The Team

The diversified Liquid Wind team consists of approximately 40 employees with cutting-edge expertise and skills within the company’s core field of work. Being a knowledge-intensive company, the team was in 2022 strengthened with additional subject matter expertise in several areas, such as the process technology, project management, electricity market, finance, and shipping, ready to deliver on its expansion plans and to accelerate the development of new Flagship sites.



On the investor side, Liquid Wind’s local and international investors provide valuable network support and collaboration in executing on the established strategy and progressing its development work.



The ambition is to further recruit, develop and retain diverse talent, driven by a will to contribute to changing the world for the better. Liquid Wind also strives for establishing a balanced age and gender spread as well as ethnic and cultural diversity. Going forward, contributing to the community around the facilities in building capabilities with education institutions, developing network and business opportunities and creating jobs, will also be a priority.

To highlight corporate values and culture and take measures against all business activities that do not follow applicable laws and regulations is explicitly set out in Liquid Wind’s Code of Conduct and is part of every employee’s commitment to the company.

Our Company Values

Transparency: In our business of green transformation, transparency will be critical to gaining trust. We must live by it and make sure our customers can too.

Community: We are not alone in the fight against fossils. We are in it together with peers and partners in our elaborate ecosystem. Strong community collaboration provides the power to drive real change.

Drive: We put our ability to use here and now. We don’t wait for approval or answers from others. We don’t get stuck in endless discussions or negotiations. We act. Now.

Courage: We have the willpower, conviction and resilience it takes to become a category leader. We never give up, and we are not intimidated by the scope of our task or the oil industry we are against.

Code of Conduct

Liquid Wind strives to conduct its business in the most responsible way possible – resource and energy efficient, with minimal footprint on environment and climate, with respect for human rights and labor rights, and in compliance with applicable laws and regulations. Liquid Wind’s Code of Conduct sets requirements for employees as well as for its suppliers and business partners. It is based on the UN Global Compact, the UN Guiding Principles for Business and Human Rights and the OECD Guidelines for Multinational Enterprises, amongst other international standards, norms and guidelines. Read the Liquid Wind Code of Conduct [here](#).

Strategic Partnerships

Liquid Wind collaborates with some of the sustainable technology industry's best-known companies to harness the full potential of converting electricity to liquid fuel. The company's core strategic partnerships are a key component in executing the strategy for designing, engineering and developing its network of electrofuel facilities. Furthermore, Liquid Wind's partners also work closely in jointly developing the next generation's integrated facilities for electrofuel.

The collective effort to establish the first commercial-scale electrofuel facility project – FlagshipONE in Örnsköldsvik – has been carried out in close collaboration between Liquid Wind and its strategic partners. The integration of core technologies will allow for cost-competitive production of carbon neutral fuel at the site.

Liquid Wind has a long relationship with its four OEM partners. In the coming years, the company will continue to work in close collaboration with its partners to scale and speed up the rollout of new electrofuel facility projects.



Alfa Laval will provide expertise in energy optimisation, and equipment for multiple stages in the conversion process. Which will improve efficiency and minimise the use of resources.



Carbon Clean's efficient and low-cost technology will capture and concentrate biogenic carbon dioxide emissions from industry.



Siemens Energy's leading electrolyzer technology will efficiently and cost-effectively convert water into hydrogen. Siemens will also provide other services to support the smooth operation and intelligent replication of eMethanol facilities.



Haldor Topsoe's cost-efficient eMethanol technology and proprietary catalyst will combine CO₂ and hydrogen to form eMethanol.

Partnership with Sundsvall Energi

In 2022, Liquid Wind started collaborating with the power utility Sundsvall Energi to develop its second commercial-scale electrofuel project, FlagshipTWO, in Sundsvall, north-eastern Sweden. The Liquid Wind project combined with Sundsvall Energi's upgrade is together expected to be the largest ever industrial investment in Sundsvall and will support the municipality's ambition to become climate neutral by 2030.

The electrofuel facility will be located at Sundsvall Energi's site Korstaverket, close to the local Tunadal harbor. Sundsvall Energi will provide carbon dioxide, captured from the company's power plant at the same location, and fossil-free hydrogen will be produced from water and renewable electricity from wind power. The hydrogen will then be combined with the captured carbon dioxide to produce fossil-free electrofuel. Steam and waste heat at the site will also be captured to maximize efficient use of resources.

FlagshipTWO and the Sundsvall Energi upgrade project are together estimated to contribute to a reduction in carbon dioxide emissions of 300,000 tons annually, primarily through enabling the replacement of fossil fuels in shipping with fossil-free electrofuel, but also through the capture and permanent storage of carbon dioxide.

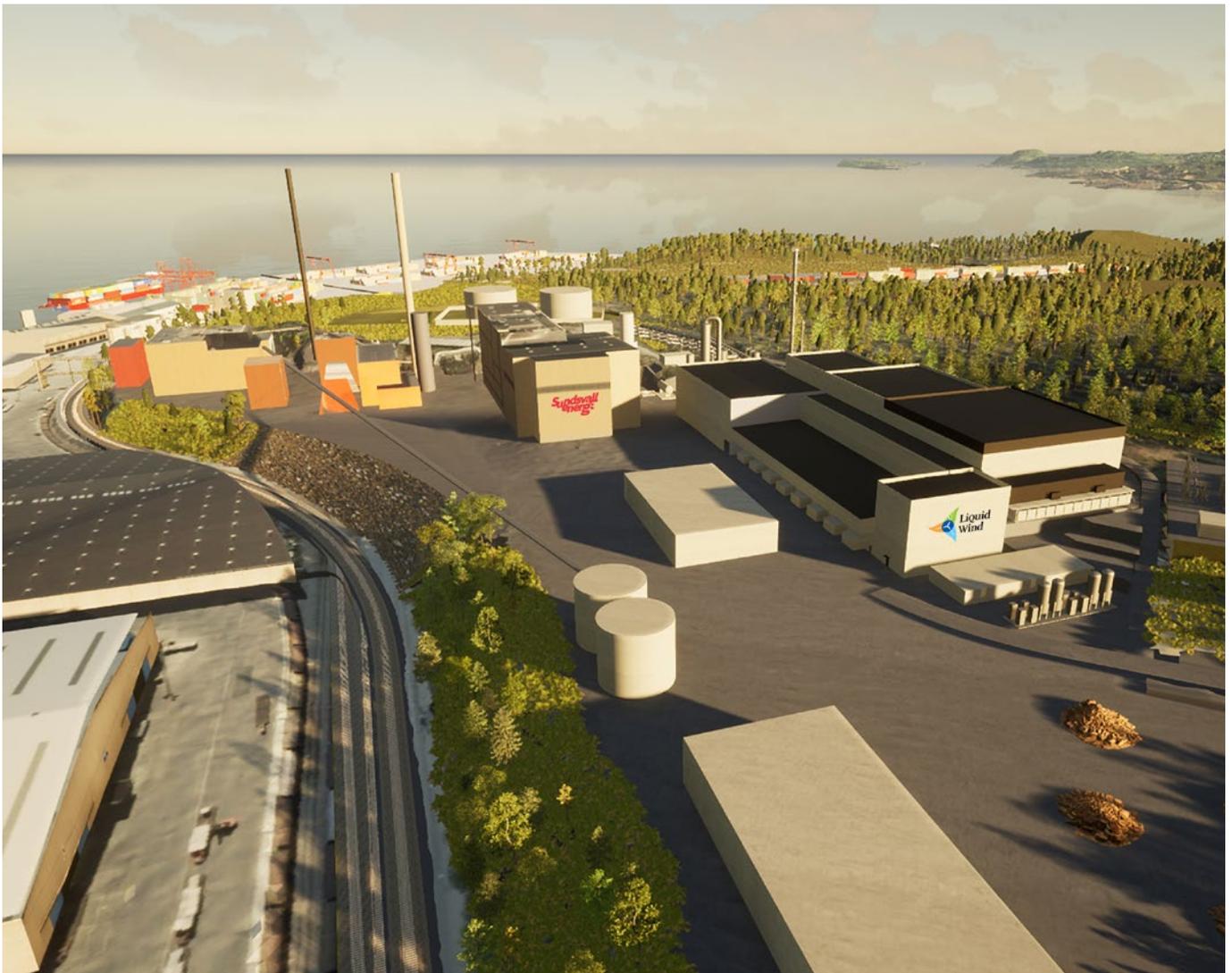
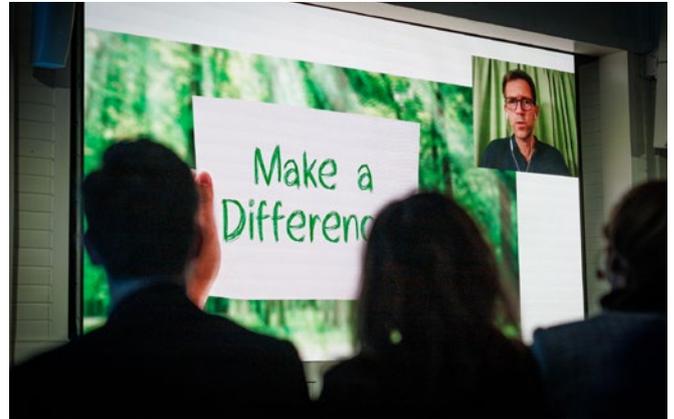


Illustration of Korstaverket, FlagshipTWO, Sundsvall, Sweden. Sundsvall Energi and Liquid Wind.

Liquid Wind contributes to establishing Gothenburg as a European electrofuel hub

In the early fall of 2022, Liquid Wind partnered with Stena Line, DFDS, Ørsted and the Port of Gothenburg to establish Gothenburg as a hub for electrofuel. The collaboration is intended to ensure that significant volumes of electrofuel will be available for bunkering in the Port of Gothenburg by 2025. As the largest harbor in Scandinavia and one of Europe’s most important bunker hubs, the port is an ideal location for delivery and bunkering of electrofuel. The Swedish Minister of Energy at the time, Khashayar Farmanbar, participated and supported the initiative.

The Port of Gothenburg has been ambitious with its environmental work for many years and views electrofuel as important for decarbonizing the shipping sector. Several shipping companies operating in Gothenburg will soon deploy ships to run on dual fuel (methanol), and the port has the necessary operating regulations in place to support this development.



In the winter of 2022, Liquid Wind gathered its partners and several frontrunners of electrofuel development in Gothenburg to discuss the sustainable transition in shipping and how Gothenburg’s position as a European hub for electrofuel can be solidified. Liquid Wind’s CEO and founder Claes Fredriksson presented the company’s latest advances and introduced its plans for large-scale electrofuel production going forward. The event was appreciated by the sector and provided additional confidence in electrofuel and in Gothenburg as a hub for eMethanol.

Board of Directors



Iain Tobin
*Chief Corporate Officer,
Carbon Clean*



Kai Baumgarte
Innovation Manager, Uniper



Sundus Cordelia Ramli
*Chief Commercial Officer
P-to-X, Topsoe*



Claes Fredriksson
*Chairman, Founder and CEO,
Liquid Wind*



Åsa Burman
Director, Lighthouse



Peter Luetkebohmert
*Head of Risk & Portfolio
Management EMEA,
Siemens Energy*



Julien Gennetier
*VP Energy Division,
Alfa Laval*



Ulrika Francke
*President-elect,
International Organisation
for Standardisation*



James Munce
CEO, Hycap

Management Team



Claes Fredriksson
Chairman, Founder and CEO



Emma Rönmark
CFO



Mikael Schoultz
CIO



Ulrik Falkenberg Lending
VP Commercial



Benny Mai
VP Technical

Sustainability

Supporting the UN Sustainable Development Goals (SDGs)

Liquid Wind is committed to the SDGs and the 2030 Agenda for Sustainable Development*. Green electrofuel, in form eMethanol, is critical for the global sustainability transformation of the maritime industry due its ability to reduce greenhouse gas emissions by 94 per cent** when replacing fossil-based maritime fuel. Demonstrating that eMethanol offers a viable and sustainable alternative to fossil fuels. Liquid Wind's business has significant potential to make a meaningful positive contribution to SDGs 7, 13, 14 and 17, which is further explained below.

7 AFFORDABLE AND CLEAN ENERGY



Long-distance shipping and heavy road transport are currently considered 'hard-to-abate' sectors, as they lack viable alternatives to fossil fuels. Liquid Wind will address this challenge by providing access to large volumes of renewable liquid fuel, which is compatible with existing infrastructure and can enable a significant reduction in fossil carbon emissions.

13 CLIMATE ACTION



Liquid Wind is committed to urgent and practical action to mitigate climate change. Using a standardised and modular approach, we can efficiently replicate eMethanol facilities to provide large volumes of carbon neutral fuel to replace fossil fuels.

14 LIFE BELOW WATER



As well as reducing pollutants impacting our climate, eMethanol is also better for life below water. Marine toxicity is low and it rapidly dissolves in water, supporting the Marine Industry in their ambitions for better ocean stewardship.

17 PARTNERSHIPS FOR THE GOALS



We cannot achieve the changes needed to mitigate climate change alone, it is critical that we work together. Liquid Wind has assembled a powerful Consortium of world-class companies who believe and support our ambition. Together we will bring carbon neutral fuel to market at scale and support the sustainable energy transition. Liquid Wind also collaborates with research institutes and universities to advance understanding of eFuels.

*The UN 2030 Agenda for Sustainable Development

**Source: Liquid Wind White Paper on evaluating marine fuels White paper — Liquid Wind - eMPowering our Future.

Emissions avoided by FlagshipONE contribution

In 2022, Liquid Wind achieved Financial Investment Decision (FID) for Project FlagshipONE, which was subsequently sold to energy group Ørsted. By taking FlagshipONE to FID, FlagshipONE became a reality which will have significant positive impacts on climate throughout its lifetime of the project. FlagshipONE will on an annual basis produce 50,000 tons of eMethanol, a renewable electrofuel. The positive impact of this project is substantial, as it replaces 24.3 thousand tons of fossil fuel, thereby avoiding the release of 90.4 thousand tons of CO₂eq annually. Over the projected lifespan of at least 25 years, this amounts to a reduction of 2.26 mega tons of carbon dioxide equivalents. This significant achievement demonstrates Liquid Wind's commitment and ability to contribute to the mitigation of climate change and advancing towards a more sustainable future.

2.26
Megatonne
CO₂eq avoided
by FlagshipONE



Market Trends and Drivers



Climate

The consequences of climate change are becoming increasingly noticeable around the world. Mitigating global warming requires accelerated efforts to transition to a fossil-free society, across geographies and sectors.

The maritime sector emits around 940 million tons of carbon dioxide annually and is responsible for about 3 per cent of global greenhouse gas emissions³. As the world continues to see an increase in maritime transport, shipping emissions are projected to grow significantly if mitigation measures are not put in place rapidly.

The United Nations' specialized shipping agency, the International Maritime Organization (IMO) has set targets for reducing the shipping industry's climate footprint, aiming to lower its emissions by 40 per cent by 2030, and a majority of the organization's members have approved a zero-carbon target for 2050. More and more shipping companies are setting up climate and sustainability goals in line with the Science Based Targets initiative (SBTi).



Electrification

Electrification is key for society's climate transition. Electrification makes it possible to replace fossil fuels in transportation and industry with fossil-free energy. It also contributes to reducing society's dependency on energy imports from geopolitically unstable regions. The need for renewable electricity is estimated to grow significantly over the coming years, and according to the Swedish Energy Agency, electrofuel will play a particularly important role in the electrification of several sectors.

The electrofuel eMethanol makes it possible to electrify hard-to-abate sectors such as the shipping industry. Electrofuel can be generated from renewable energy sources such as wind and solar power and has the capacity to drastically reduce emissions from various sectors by replacing fossil fuels. Companies in the shipping industry see eMethanol as an opportunity to comply with their customers' requirements of fossil-free transportation. Several maritime industry heavyweights have already ordered large vessels that are powered by electrofuel, and the first ships in commercial operation running on electrofuel are expected to sail the open sea already by late 2023.



Geopolitics

2022 was a year dominated by Russia's invasion in Ukraine. In addition to causing immense human suffering, the war disrupted the global energy market, making electricity prices rise to record levels and amplifying the need for an accelerated energy transition. As terminating Europe's dependence on Russian oil and gas becomes a political priority, the pace of electrification of society and transports will likely pick up.

The growing emphasis on national and regional security and independence following the invasion has also had an impact on trade, transports and shipping, strengthening the pattern of regionalization initially established during the Covid-19 pandemic.

³Source: IMO - Third IMO GHG Study 2014

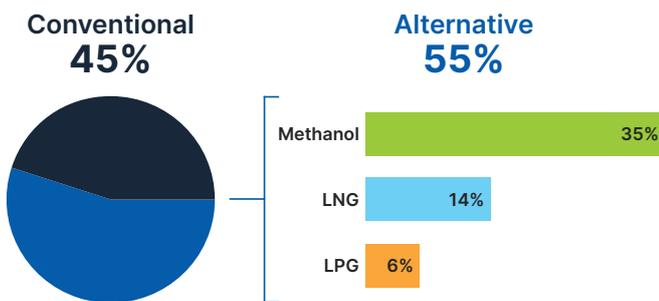
Marine Value Chain

The green transition is now the main stay of strategy for nearly every sector of the shipping industry, with many of the biggest names in shipping all declaring Net Zero ambitions to be achieved by 2050.

2023 marks a pivotal year for methanol in becoming the fuel choice for new vessel orders. The liquefied natural gas (LNG) fleet still dominates the alternative fuel market in numbers but given the enormous increase in methanol newbuild and retrofit orders, it is no longer a question of if but when, methanol will overtake LNG.

Share (%) of new ship orders conventional vs. alternative fuels by growth tonnage (GT)

New Contracts in 2023



Original image by DNV, Alternative fuel report, 1 March 2023

Despite the uncertain global geopolitical outlook for 2023, the shipping industry has bucked the trend for any hesitancy that has affected other markets. A record number of new dual fuel capable vessels and retrofit engine orders were placed during 2022.

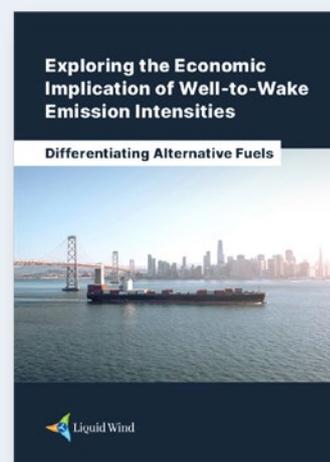
One year ago, Liquid Wind looked at 73 methanol capable vessels on order ready for delivery by 2025. In March 2023, this number has surged to 131 new methanol capable dual fuel vessels to be delivered from 2025. When including the number of orders placed by major engine manufacturers Wärtsilä and MAN, this number exceeds over 300 vessels. At the current increase in orders, expected revisions in methanol demand volumes now sit at approximately 40 million tons annually by 2030. In 2022 best estimates sat at 7 million tons by 2030. This drastic increase presents a massive opportunity for Liquid Wind.

White Paper

Liquid Wind has produced a white paper about sustainable alternatives to fossil fuel in the shipping industry, titled “Exploring the Economic Implication of Well-to-Wake Emission Intensities”. The report shows that the shipping industry is stepping up its efforts to reduce the carbon footprint from maritime transportation. More and more companies are setting up sustainability targets and offering sustainable shipping solutions to their customers.

Liquid Wind’s white paper also maps new policies and regulations that have been introduced to support the industry’s transition. Several global initiatives to reduce the climate impact from maritime transports have emerged in recent years. The United Nations’ specialized shipping agency, the International Maritime Organization (IMO), has released a strategy for reducing the greenhouse gas emissions from the maritime sector by at least 40 per cent by 2030 and 70 per cent by 2050, compared to the levels in 2008.

The whitepaper on shipping emissions and sustainable alternative fuels can be read [here](#).



Regulations and Legislations

EU Emissions Trading System (ETS)

One significant proposal is to extend the EU Emissions Trading System (ETS) to include the mobility sector, which encompasses the maritime sector, road transport, and aviation. This expansion aims to implement a cap-and-trade mechanism by putting a price on carbon in these sectors. Building upon the proven effectiveness of the EU ETS in reducing carbon dioxide emissions, this proposal acknowledges the need for policy instruments to tackle carbon emissions in hard-to-abate industries like the maritime sector. By including these sectors in the EU ETS, policymakers recognize the importance of setting emission caps and providing a market-based mechanism for reducing emissions. This inclusion not only incentivizes emission reductions but also plays a crucial role in closing the gap between fossil fuels and alternative fuels, promoting the transition towards cleaner and more sustainable energy sources.

FuelEU Maritime

Further, the negotiations for the FuelEU Maritime regulation are moving forward, delivering a common EU regulatory framework to increase the share of renewable fuels in maritime transport. This directive proposes the introduction of GHG intensity reduction targets for energy used on board, starting from 2025. The reduction targets are increased every 5 years, reaching 80 per cent by 2050. With its focus on GHG intensity, FuelEU Maritime is a tool to increase the uptake of alternative fuels. Especially the proposed multiplier for RFNBOs (green hydrogen-derived eFuels), like eMethanol, makes them an attractive and economic option to be compliant. As a rule of thumb, roughly only half the amount of eMethanol compared to bio-alternatives is needed to stay compliant. FuelEU Maritime also adopts a well-to-wake approach in measuring GHG emissions from maritime transport, considering the impacts from the entire value chain.



Industry and NGO Memberships

Liquid Wind has joined several relevant industry associations and collaborates with a selection of NGOs to support the climate transition and promote the use of electrofuel in society.



Getting to Zero Coalition*



eFuel Alliance



Fossilfritt Sverige



**The Swedish
2030-secretariat**



The Swedish Maritime Forum



Klimatledande Processindustri



Johanneberg Science Park

*Liquid Wind joined over 200 industry leaders in the Call to Action for Shipping Decarbonization by 2050.

Management Report

During the year, Liquid Wind continued its work on building up a pipeline of development projects to increase the value of the unique knowledge/IP that is packaged in project companies (SPV's) to project investors. The company's business idea is to develop projects for electrofuel production facilities and sell or license its unique competence within development and financing of production facilities for eMethanol in a scalable way.

In 2022, Liquid Wind operated and developed its activities primarily in three areas:



1. Organisation

Internal: Recruitment and contracting of expertise in the electricity market, as well as in technology, finance and shipping.

Board of Directors: The Board of Directors has been expanded with two new board members and now consists of 9 people.



2. Financing of the Company

Capital was raised from private, industrial and strategic investors in order to conduct the development work.



3. Final Negotiation and Sale of FlagshipONE AB

Liquid Wind and the Danish energy group Ørsted reached an agreement under which Ørsted acquired a 45 per cent ownership share in January and the remaining 55 per cent in November, of the Company's FlagshipONE eMethanol project.

Financing

To enable continued expansion, the company carried out an issue in two stages during the year and it resulted in a total of SEK 160 million of invested funds. In 2023, Liquid Wind will continue the set path and plans to recruit more key talent in order to develop 3 more projects as well as carry out an additional issue for the addition of new funds.

The War in Ukraine

Russia's attack on Ukraine in February 2022 has had marginal impact on the company's operations. Due to lack of certain raw materials, lead times for some deliveries have become somewhat longer.

The Team

Gradually building a strong, sustainable, diversified team with cutting-edge skills within Liquid Wind's relatively broad field of work has been a priority. In order to ensure the company's growth at the desired rate, the number of employees increased by 9 people in 2022. Being a knowledge-intensive company, Liquid Wind employed key talent was in areas such as electricity market, process technology, project management, finance, and shipping. The company tied its OEM partners even closer, working collaboratively to scale and speed up the rollout of new projects.

The Market Situation

In 2022, market interest in electrofuel and eMethanol continued to rise. Decarbonizing international shipping is urgent and requires the involvement of stakeholders from the full maritime value chain as well as governments and regulators. It is promising to see the maritime industry working on innovative and green technologies supporting the transition to zero emission maritime fuels, such as eMethanol.

Financial Report Parent Company*

Multi-year Overview (KSEK)

<i>(Amounts in KSEK)</i>	2022	2021	2020	2019
Net turnover	24 277	25 643	5 557	159
Profit/loss after financial items	44 890	-19 502	-8 232	-6 905
Equity/assets ratio (%)	82	17	41	67

For definitions of key ratios, see Accounting and Valuation Principles.

Changes in Equity

<i>(Amounts in SEK)</i>	Share Capital	Non-restr Share Prem. Reserve	Retained Profit/Loss	Profit/Loss this Year	Total
Opening shareholders' equity	86 049	54 163 351	-15 435 647	-19 502 489	19 311 264
Appropriation of earnings as per resolution of the AGM			-19 502 489	19 502 489	0
New Share Issue	35 760	160 132 221			160 167 981
Expenses attributable to the new share issue		-4 476 853			-4 476 853
Result of the year				44 889 659	44 889 659
Closing shareholders' equity	121 809	209 818 719	-34 938 136	44 889 659	219 892 051

No refunded conditional liability amounts at the balance sheet date to 25 000 (25 000).

*The Financial Report is for Liquid Wind AB.

Proposed Profit Appropriation

The Board of Directors recommends that the profit/loss and brought forward profits available for disposition (SEK):

<i>(Amounts in SEK)</i>	
Non-restricted share premium reserve	209 818 719
Accumulated loss	-34 938 136
Profit for the year	44 889 659
Total profit	219 770 242
Be distributed so that they are: carried over	219 770 242
Be appropriated as: to be carried forward	219 770 242

The company's earnings and financial position in general are indicated in the following income statement and balance sheet with notes.

Income Statement

<i>(Amounts in SEK)</i>	Note	2022-01-01 -2022-12-31	2021/01/01 -2021/12/31
Operating Revenues			
Net turnover		24 277 373	25 642 897
Other operating income		-3 549	17 073
Total revenue		24 273 824	25 659 970
Operating Expenses			
Other external costs	2	-49 263 582	-40 608 358
Personnel costs	3	-17 007 144	-6 461 244
Depreciation of intangible assets		-47 687	-5 961
Other operating expenses		-501 395	-68 690
Total operating expenses		-66 819 808	-47 144 253
Operating profit/loss		-42 545 984	-21 484 283
Profit/Loss From Financial Items			
Profit/loss from participations in group companies	4	66 505 386	0
Other interest income and similar profit/loss items	5	25 637 147	2 288 753
Interest expense and similar profit/loss items	6	-4 706 890	-306 959
Total profit/loss from financial items		87 435 643	1 981 794
Profit/loss after financial items		44 889 659	-19 502 489
Pre-tax profit/loss		44 889 659	-19 502 489
Net profit/loss for the year		44 889 659	-19 502 489

Balance Sheet: Assets

<i>(Amounts in SEK)</i>	Note	2022-12-31	2021/12/31
Fixed Assets			
<i>Intangible Fixed Assets</i>			
Intellectual property rights	7	5 113 450	5 113 450
<i>Tangible Fixed Assets</i>			
Equipment, tools and installations	8	0	47 687
<i>Financial Assets</i>			
Participations in group companies	9,10	204 724	26 259 656
Total fixed assets		5 318 174	31 420 793
Current Assets			
<i>Current Receivables</i>			
Receivables from group companies	11	30 996 236	64 197 178
Other receivables		13 409 681	0
Deferred expenses and accrued income	12	4 112 343	1 955 096
Total current assets		48 518 260	66 152 274
Cash and cash equivalents		213 019 734	14 499 961
Total current assets		261 537 994	80 652 235
Total Assets		266 856 168	112 073 028

Equity and Liabilities

<i>(Amounts in SEK)</i>	Note	2022-12-31	2021/12/31
Equity			
<i>Restricted Reserves</i>			
Share capital		121 809	86 049
<i>Non-restricted Equity</i>			
Premium fund		209 818 719	54 163 351
Retained earnings or losses		-34 938 136	-15 435 647
Profit/loss for the year		44 889 659	-19 502 489
Total		219 770 242	19 225 215
Total equity		219 892 051	19 311 264
Provisions			
Other provisions	13	5 122 646	26 726 506
Long-term Liabilities			
Other liabilities	14	0	51 884 500
Current Liabilities			
Accounts payable		22 748 901	1 646 171
Liabilities to group companies	15	2 985 158	1 218 599
Current tax liabilities		245 986	123 871
Other liabilities	16	13 653 350	1 303 008
Accrued expenses and deferred income	17	2 208 076	9 859 109
Total current liabilities		41 841 471	14 150 758
Total equity and liabilities		266 856 168	112 073 028

Notes

Note 1: Accounting and Valuation Principles

General Information

The annual report is prepared in accordance with the Swedish Annual Accounts Act and BFAR 2012:1 Annual Reporting and consolidated reports (K3).

Receivables and liabilities in foreign currencies have been valued at the exchange rate on the balance sheet date. Exchange profit and exchange loss on operating receivables and liabilities are reported in the operating result. Exchange profit and exchange loss on financial operating receivables and liabilities are reported in the financial items.

The accounting principles remain unchanged as compared to the previous year.

Revenue Recognition

Revenue has been raised to the fair value of consideration received or receivable and is recognized to the extent that it is probable that the economic benefits will be available to be used by the company and the revenue can be measured reliably.

Fixed Assets

Intangible and tangible fixed assets are posted at the acquisition value less accumulated depreciation and any write-downs.

Tangible Fixed Assets

Intangible and tangible fixed assets are posted at the acquisition value less accumulated depreciation and any write-downs.

Depreciation is done on a straight-line basis over the estimated useful life of the asset taking the significant residual value into account. The following depreciation percentage is applied:

<i>Tangible Fixed Assets</i>	
Equipment, tools and installations	5 Years

Financial Instruments

Shares in Subsidiaries

Investments in subsidiaries are carried at cost less any impairment losses. The cost includes the purchase price paid for the shares and acquisition costs. Any capital contributions are added to the cost when they arise

Impairment of Financial Fixed Assets

At each balance sheet date are considered if there are indications of impairment of financial fixed assets. Impairment loss takes place if the declines in value is considered to be persistent and are examined individually.

Income Taxes

Total tax consists of current tax and deferred tax. Taxes are reported in the income statement, except when the underlying transaction is reported directly in equity, whereby the associated tax effects are reported in equity.

Employee Remuneration

Employee benefits relate to all kinds of benefits the company provides to employees. Short-term employee benefits include wages, paid holidays, paid leave, bonuses and reimbursement upon completion of employment (pension) etc. Short-term employee benefits are reported as an expense and a liability when there is a legal or constructive obligation to pay compensation as a result of a past event, and a reliable estimate of the amount can be made.

Public Contributions

Public contributions are reported as income when the future achievement as required to obtain the contribution are made. In those cases, the contribution is obtained before performance is completed, the contribution is reported as a liability in the balance sheet. Public contribution is measured at the fair value of consideration received or receivable.

Group Relationships

This is a parent company but with reference to the exception rules described in Chapter 7, §3 of the Annual Accounts Act, no consolidated financial statements are prepared.

Definition of Key Business Ratios

Net Turnover - Main operating revenues, invoiced expenses, side income and revenue adjustments.

Profit/Loss After Financial Items - Profits after financial items and costs but before appropriations and taxes.

Equity/Assets Ratio (%) - Adjusted equity (equity and untaxed reserves with deductions for deferred tax) as a percentage of the balance sheet total.

Note 2: Remuneration to Auditors

Audit assignment refers to inspection of the annual report and the accounting as well as the reports of the Board of Directors and the CEO, other tasks fulfilled by the company auditor as well as counselling or other assistance deriving from observations made in the course of the inspection or fulfilment of such other tasks.

<i>(Amounts in SEK)</i>	2022-01-01 -2022-12-31	2021-01-01 -2021-12-31
Ernst & Young		
Audit engagement	35 000	35 000
Tax consultancy	12 000	12 000
Other services	184 385	0
Total	287 705	47 000
Öhrlings PricewaterhouseCoopers		
Audit engagement	0	74 745
Total	0	74 745

Note 3: Average Number of Employees

	2022-01-01 -2022-12-31	2021-01-01 -2021-12-31
Average number of employees	13	6

Note 4: Profit/Loss From Participation in Group Companies

<i>(Amounts in SEK)</i>	2022-01-01 -2022-12-31	2021-01-01 -2021-12-31
Profit from divestments	66 505 386	0
Total	66 505 386	0

Note 5: Other Interest Income and Similar Profit/Loss Items

<i>(Amounts in SEK)</i>	2022-01-01 -2022-12-31	2021-01-01 -2021-12-31
Interest revenues from Group companies	6 989 752	1 740 651
Other interest income	75 394	0
Exchange rate differences	15 994 176	548 101
Others (financial income)	2 577 825	0
Total	25 637 147	2 288 752

Note 6: Other Interest Expenses and Similar Profit/Loss Items

<i>(Amounts in SEK)</i>	2022-01-01 -2022-12-31	2021-01-01 -2021-12-31
Interest expenses to group companies	1 477 650	7 819
Other interest expenses	6 834	7 290
Exchange differences	3 222 406	291 850
Total	4 706 890	306 959

Note 7: Intellectual Property Rights

<i>(Amounts in SEK)</i>	2022-12-31	2021/12/31
Acquisition value, opening balance	5 113 450	0
Purchasing	0	5 113 450
Accumulated acquisition value, closing balance	5 113 450	5 113 450
Book value, closing balance	5 113 450	5 113 450

Note 8: Equipment, Tools and Installations

<i>(Amounts in SEK)</i>	2022-12-31	2021/12/31
Acquisition value, opening balance	53 648	0
Purchasing	0	53 648
Accumulated acquisition value, closing balance	53 648	53 648
Depreciation, opening balance	-5 961	0
Depreciation for the year	-47 687	-5 961
Accumulated depreciation, closing balance	-53 648	-5 961
Book value, closing balance	0	47 687

Note 9: Participation in Group Companies

<i>(Amounts in SEK)</i>	2022-12-31	2021/12/31
Acquisition value, opening balance	26 259 656	5 730 000
Purchasing	50 000	75 856
Sales	-26 104 932	0
Reservation additional purchase price-earnout	0	20 453 800
Accumulated acquisition value, closing balance	204 724	26 259 656
Book value, closing balance	204 724	26 259 656

Note 10: Specification of Participation in Group Companies

	Capital share	No. of shares	Book value (SEK)
FlagshipTWO AB	100%	100 000	100 000
FlagshipTHREE AB	100%	25 000	25 000
Liquid Wind Denmark ApS	100%	40 000	54 724
FlagshipFOUR AB	100%	25 000	25 000
Total			204 724

	Corp. ID No.	Head office
FlagshipTWO AB	559267-0748	Göteborg
FlagshipTHREE AB	559406-8297	Göteborg
Liquid Wind Denmark ApS	42510033	Allerød
FlagshipFOUR AB	559406-8305	Göteborg

Note 11: Receivables From Group Companies

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
FlagshipONE AB	0	64 197 178
Liquid Wind Denmark ApS	1 941 629	0
FlagshipTWO AB	29 054 607	0
Total	30 996 236	64 197 178

Note 12: Deferred Expenses and Accrued Income

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
Prepaid software license	382 694	104 685
Prepaid insurance	44 235	18 338
Prepaid rent	328 800	50 930
Other prepaid costs	48 727	40 614
Accrued interest	0	1 740 529
Service income	3 307 887	0
Total	4 112 343	1 955 096

Note 13: Provisions

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
Other Provisions		
Additional purchase price-earnout	0	20 453 800
Investment decision (FID) bonus consultants	0	4 707 896
Investment decision (FID) bonus employees	0	1 564 810
Investment decision (FID) FlagshipTWO	5 122 646	0
Total	5 122 646	26 726 506

Note 14: Other Non-Current Liabilities

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
Ørsted	0	51 134 500
VGR seed loan	0	750 000
Total	0	51 884 500

Note 15: Liabilities to Group Companies

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
Freethem Generation AB	0	976 000
Liquid Wind Denmark ApS	2 985 158	242 599
Total	2 985 158	1 218 599

Note 16: Other Current Liabilities

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
VAT payable	1 095 957	1 281 876
VGR loan	750 000	0
Bonus	11 790 346	0
Other	17 047	21 132
Total	13 653 350	1 303 008

Note 17: Accrued Expenses and Deferred Income

<i>(Amounts in SEK)</i>	2022-12-31	2021-12-31
Remuneration to auditor	51 000	35 000
Accountancy services	191 498	80 725
Consulting fees (internal)	346 387	1 344 610
Consulting fees (external)	689 965	2 332 616
Salaries and social fees	394 260	394 260
Holiday pay and social fees	534 966	558 448
Cost for Flagship Master Platform	0	5 113 450
Total	2 208 076	9 859 109

Note 18: Significant Events After the Financial Year

The company has planned a funding round during the summer. This is to enable continued expansion. Otherwise, no significant events have occurred after the end of the financial year.



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