



BalticSeaH2

– hydrogen valley

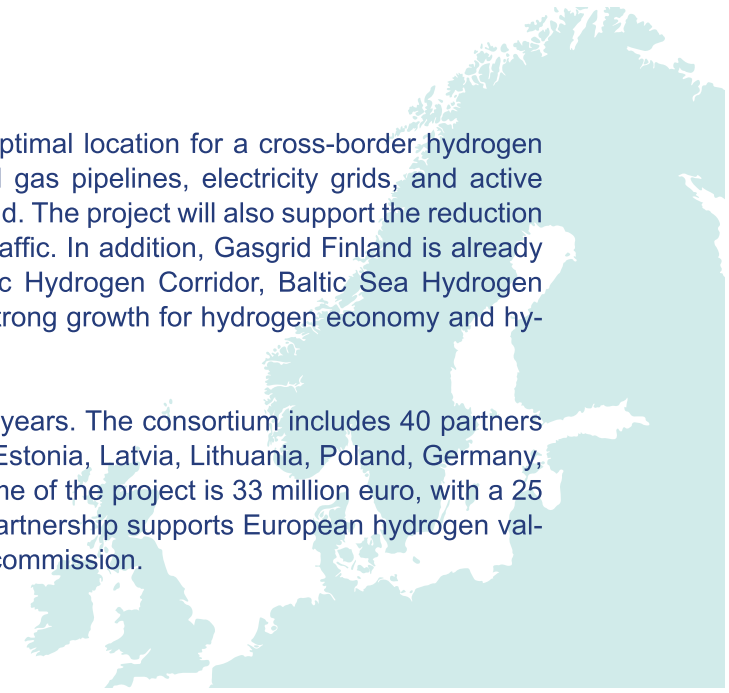


BalticSeaH2

BalticSeaH2 builds the first significant, cross-border hydrogen valley in Europe. The goal is to create an integrated hydrogen economy around the Baltic Sea to enable self-sufficiency of energy and minimise carbon emissions from different industries. The project includes 40 partners from nine Baltic Sea area countries. Combining local areas into a broader valley supports creating a genuinely integrated, interregional hydrogen economy, which has not been done previously on this scale in Europe.

The area between Finland and Estonia is an optimal location for a cross-border hydrogen market. The necessary infrastructure – natural gas pipelines, electricity grids, and active marine traffic – already exist in the Gulf of Finland. The project will also support the reduction of the carbon emissions from existing marine traffic. In addition, Gasgrid Finland is already preparing hydrogen infrastructure: Nordic-Baltic Hydrogen Corridor, Baltic Sea Hydrogen Collector and Nordic Hydrogen Route enable strong growth for hydrogen economy and hydrogen markets in the Baltic Sea region.

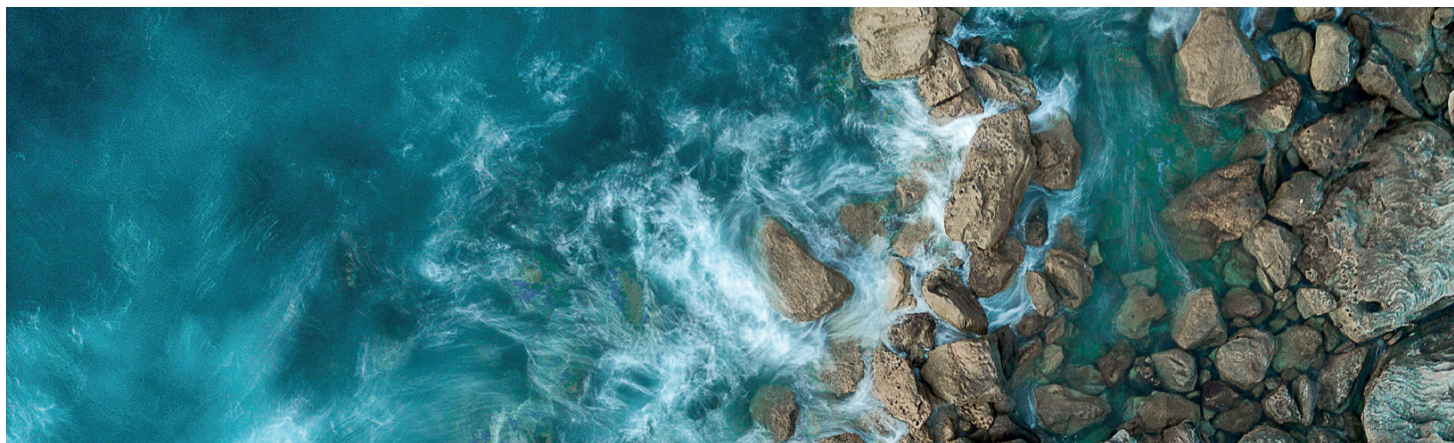
The project started in June 2023 and lasts five years. The consortium includes 40 partners from nine Baltic Sea region countries: Finland, Estonia, Latvia, Lithuania, Poland, Germany, Denmark, Norway, and Sweden. The total volume of the project is 33 million euro, with a 25 million funding from the EU. Clean Hydrogen Partnership supports European hydrogen valley projects with RePowerEU funding from the commission.



Use cases

BalticSeaH2 projects enables 25 demonstration and investment cases to showcase the different sectors of hydrogen economy, adding up to over 4000 million euros in total investments. The production potential for hydrogen will reach 100 000 tonnes of hydrogen annually by the end of the project. The hydrogen and its derivatives can be utilised or sold by different industries brought together by the project.

These use cases aim to pilot the joint operation and seamless integration of different parts of hydrogen value chain in transnational operating environment. The value chain of hydrogen is well presented – there are use cases which will produce large quantities of hydrogen, others that store and distribute the gas, cases which use the hydrogen in production of derivatives, and ones that will be the end-user for hydrogen or products derived.



Impact of the use cases

In numbers, BalticSeaH2 use cases have a potential to produce more than 130 000 tons of hydrogen annually. The consumption will be even more, over 200 000 tons per year, which encourages to increase the production and attracts other producers to join the valley. The annual production of derivatives will exceed 600 000 tons, which concretises the significant impact achieved by only the use cases. The derivatives will be used for example as marine bunker to provide carbon neutral maritime transport, as a fertilizer to reduce the dependency on fossil feedstock, or as olefins to provide a sustainable and carbon neutral way to produce plastics and other long lifetime products. As the hydrogen molecule is versatile and acts as a basic building block for countless chemical compounds, the possibilities in utilising the molecule and its derivatives are limitless.

The use cases will pilot new technologies and study the integration of interfaces in the environment of an already functional economy. With the experiences gained during the piloting phases, the ramp-up of larger scale projects and solutions will be easier and more efficient. This enables quick transition to fully functional cross-border hydrogen economy and brings Europe closer to its sustainability and carbon neutrality goals.



Co-funded by
the European Union



The project is supported by the Clean Hydrogen Partnership and its members.