

BALTICSEA H2

CROSS-BORDER HYDROGEN VALLEY AROUND THE BALTIC SEA



| | |
|---|--|
| Project ID | 101112047 |
| PRR 2024 | Pillar 6 – H ₂ valleys |
| Call topic | HORIZON-JTI-CLEANH2-2022-06-01: Hydrogen valleys (large-scale) |
| Project total costs | EUR 33 235 406.25 |
| Clean H ₂ JU max. contribution | EUR 24 998 830.00 |
| Project period | 1.6.2023–31.5.2028 |
| Coordinator | CLIC Innovation Oy, Finland |
| Beneficiaries | Aalto-korkeakoulusäätiö SR, ABB Oy, Ballard Power Systems Europe A/S, Baltic Innovation Agency OÜ, Borealis Polymers Oy, Convion Oy, Cybernetica AS, Elcogen Oy, Elomatic Consulting & Engineering Oy, Energiforsk AB, Energy Cluster Denmark, Energy Valley, Flexens Oy AB, Gasgrid Finland Oy, Green North Energy Oy, Helen Oy, Iwen Energy Institute gGmbH, Keemilise ja Bioloogilise Füüsika Instituut, Lhyfe, MTÜ Viru Vesinik, Neste Oyj, OÜ Hendrikson & Ko, P2X Solutions Oy, PowerUP Fuel Cells OÜ, Research Institutes of Sweden AB, Rīgas brīvostas pārvalde, Rønne Havn A/S, Skyborn Renewables Sweden AB, Solarstone Infra OÜ, Stowarzyszenie Dolnośląska Dolina Wodorowa, Sustainable Business and Technology Development Sihtasutus, Tallinna Linn, Teknologian tutkimuskeskus VTT Oy, Uppsala Universitet, Vandenilio energetikos asociacija, Vantaan Energia Oy, Viking Line Abp, Wärtsilä Finland Oy, Yara Suomi Oy, Zało un Viedo Tehnoloģiju Klasteris |

<https://balticseah2valley.eu/>

PROJECT AND GENERAL OBJECTIVES

BalticSeaH2 aims to build the first significant, cross-border hydrogen valley in Europe. The goal is to create an integrated hydrogen economy around the Baltic Sea to enable energy self-sufficiency and minimise carbon emissions from various industries. Combining local areas into a broader valley will help create a genuinely integrated, interregional hydrogen economy.

The area between Estonia and Finland is an optimal location for a cross-border hydrogen market. The necessary infrastructure – natural gas pipelines, electricity grids and active marine traffic – already exists in the Gulf of Finland. Additional hydrogen infrastructure is already planned: the Nordic–Baltic Hydrogen Corridor, the Baltic Sea Hydrogen Collector and the Nordic Hydrogen Route will enable the strong growth of the hydrogen economy and hydrogen markets in the Baltic Sea region.

Over 20 demonstration cases and over 10 investment cases will showcase the diverse applications of hydrogen across multiple sectors. The production potential for hydrogen will reach 100 000 t annually by the end of the project. The hydrogen and its derivatives can be utilised or sold by the industries brought together by the project.

NON-QUANTITATIVE OBJECTIVES

BalticSeaH2 will pioneer a large-scale interregional hydrogen valley, as there is no established framework to guide the process for developing a cross-border hydrogen economy including the necessary financial, legal, environmental and technical pre-requisites to develop such a market. BalticSeaH2 will plan, design and implement hydrogen technologies along the

entire hydrogen value chain (production, distribution, and consumption), support the scale-up of the project results to countries in the Baltic Sea region, optimise the cost and energy efficiency of the established technical solutions, increase societal awareness and acceptance of hydrogen technologies and the hydrogen economy, and develop an integrated market model that maximises system efficiency and enables the establishment of an interregional hydrogen economy in the region.

PROGRESS AND MAIN ACHIEVEMENTS

The project started in June 2023. The project structures, online presence and communication channels have been set up and most tasks have begun. The consortium has participated in events aiming to raise awareness of the valley. The development of the use cases and investment cases has started, but some of the cases are still confidential because the final investment decisions (FIDs) have not been published yet. Use cases, investment cases and other results will be actively communicated with all quadruple helix stakeholders as progress is made.

FUTURE STEPS AND PLANS

BalticSeaH2 intends to create a large-scale hydrogen valley between Estonia and Finland. In addition, there are replication valleys in Denmark, Germany, Latvia, Lithuania, Norway, Poland and Sweden. Replication valleys are closely involved in the BalticSeaH2 project activities already, but the project will create a replication toolkit and best-practice handbook to disseminate knowledge and lessons learnt regarding building a hydrogen economy involving the whole hydrogen value chain.

PROJECT TARGETS

| Target source | Parameter | Unit | Target | Achieved to date by the project | Target achieved? |
|--------------------------|--|------------------------|--------|---------------------------------|------------------|
| Project's own objectives | Number of end-use opportunities served by the use cases with FIDs | number | 20 | 4 | |
| | Tonnes of new renewable H ₂ produced in use cases with FIDs | t H ₂ /year | 60 000 | 0 | |
| | Number of sector couplings in the use cases with FIDs | number | 15 | 6 | |
| | Additional funding raised for boosting use cases | M€ | 2 500 | 90 | |
| | Number of new H ₂ valleys boosted | number | 10 | 4 | |
| | Number of interregional strategic cooperation actions | number | 15 | 3 | |