HYSOUTHMARMARA

SOUTH MARMARA HYDROGEN SHORE

Project ID	101112054
PRR 2024	Pillar 6 – H_2 valleys
Call topic	HORIZON-JTI-CLEANH2-2022-06-02: Hydrogen valleys (small-scale)
Project total costs	EUR 37 798 575.00
Clean H_2 JU max. contribution	EUR 7 999 937.50
Project period	1.7.2023–30.6.2028
Coordinator	Güney Marmara Kalkınma Ajansı, Türkiye
Beneficiaries	Alma Mater Studiorum – Università di Bologna, Bandırma Onyedi Eylül University, Enerjisa Enerji Üretim A.Ş., Eti Maden İşletmeleri Genel Mudurlugu, Hidrojen Peroksit Sanayi ve Ticaret A.Ş., Kaleseramik Çanakkale Kalebodur Seramik Sanayi A.Ş., Linde Gaz A.Ş., Sabancı Üniversitesi, Software AG, Türk–Alman Üniversitesi, Türkiye Bilimsel ve Teknolojik Araştırma Kurumu, Türkiye Enerji, Nükleer ve Maden Araştırma Kurumu, Türkiye Şişe ve Cam Fabrikaları A.Ş., Université Mohammed VI Polytechnique

https://hysouthmarmara.org/

PROJECT AND GENERAL OBJECTIVES

Türkiye's south Marmara region, currently the world's 12th-largest region in terms of installed renewable capacity, is set to boost its hydrogen economy through the HySouthMarmara valley project. The project, with a budget of EUR 37.8 million and eight work packages, aims to increase the region's hydrogen market and boost the hydrogen economy. The project will focus on green hydrogen and green fuel production, with the goal of becoming Türkiye's first carbon-neutral region by 2053.

TÜRKIYE'S HYDROGEN PROJECT OBJECTIVES ARE THE:

- creation of Türkiye's first regional hydrogen roadmap, aiming to provide recommendations for up to 2035;
- establishment of the first MW-scale green hydrogen plant, aiming to create the largest green hydrogen facility in Türkiye;
- development of a digital twin for the hydrogen production system, enabling renewable energy usage and efficient green hydrogen production;
- first use of green hydrogen in the production of hydrogen peroxide, glass, ceramic and boron chemicals;
- first investment opportunities for the green production of hydrogen derivatives such as ammonia and methanol;
- commercial production of sodium borohydride, a new boron chemical, and a new power system;
- development of Türkiye's first domestic hybrid ceramic tile kiln that can use hydrogen;
- establishment of Türkiye's first renewable energy park, Bandırma Energy Base;
- establishment of Türkiye's first hydrogen platform, the South Marmara Hydrogen Shore Platform;
- completion of Türkiye's first hydrogen training centre.

NON-QUANTITATIVE OBJECTIVES

The HySouthMarmara project aims to develop a hydrogen generation system using sodium borohydride hydrolysis, which will be used by the Disaster and Emergency Management Presidency in south Marmara. The first prototype will be installed in the presidency's logistics warehouse, demonstrating its usability in disasters such as earthquakes, landslides, major power plant failures, floods and

fires triggered by the climate crisis. This application will contribute to the social impact of hydrogen.

The project also focuses on education and skill development. By combining aspects of education, research and industry, the project will provide vocational skill training and educational programmes on hydrogen. The south Marmara region has set out a vision to become a green technologies training hub, and Güney Marmara Kalkınma Ajansı (GMKA) has increased its efforts regarding renewable-energy-related studies and projects. The renewable youth operation, financed under the EU Instrument for Pre-accession Assistance, is carried out with the partnership of GMKA and two out of three universities operating in the region. Renewable energy laboratories and applied education infrastructures are established at each university, with Bandırma Onyedi Eylül University focusing on offshore renewable technologies and green hydrogen.

The project's international dimension includes interactions, collaborations and impacts beyond national borders. Delegation visits and site visits will facilitate engagement with international partners, stakeholders and experts, allowing participants to exchange ideas, share best practices and explore opportunities for collaboration and mutual learning.

PROJECT TARGETS

Target source	Parameter	Unit	Target	Achieved to date by the project	Target achieved?
Project's own objectives	Annual green hydrogen production	t	500	N/A	
	Sodium borohydride production	t/year	10	N/A	
	Feasibility studies	number	4	1	
SRIA (2021–2027)	Installed capacity of green hydrogen plant	MW	4	N/A	

Clean Hydrogen Partnership
Co-funded by the European Union