

Expected Impacts



Unlock new business models



Build Greece's first green hydrogen market



Decarbonise industry



Dismantle reliance on fossil fuel



Support future e-fuels and biofuels production



Maximise existing infrastructure



Lay groundwork for a green hydrogen hub



Boost energy security



Empower Europe's green hydrogen strategy

Consortium

PROJECT
COORDINATOR



CERTH
CENTRE FOR
RESEARCH & TECHNOLOGY
HELLAS



Institute of
Low-Carbon Industrial Processes



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Contact us



ephyraproject.eu



info@ephyra-project.eu



EPHYRA project



Co-funded by
the European Union

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European Production of HYdrogen from RenewAble Energy Integration into an Industrial Environment

EPHYRA aims to demonstrate how large-scale green hydrogen production can be efficiently integrated into existing industrial ecosystems, paving the way for Europe's hydrogen economy.



About

First-of-its-kind **30 MW** renewable hydrogen facility in South-eastern Europe (**now upscaled to 50 MW** with secured additional funding)

Fully integrated into **Motor Oil Hellas' Corinth Refinery**— Greece's largest private industrial complex

Produces up to **4,900 tonnes of green hydrogen** per year

Designed around **circular economy** and **industrial symbiosis** principles

Equipped with a **digital twin** and **advanced energy management system**

Supports EU climate goals by delivering **affordable, reliable green hydrogen**

Specific objectives

Design an advanced AEL electrolyser for efficient green hydrogen production.

Optimise synergies in hydrogen use, supply, and by-product valorisation.

Develop a digital twin and automation for real-time plant control.

Deploy and operate a full-scale, circular hydrogen production system.

Evaluate sustainability across technical, economic, environmental, and social dimensions.

Drive long-term impact through stakeholder engagement and scalable replication.

EPHYRA + Trieres: Building Greece's Pioneering Hydrogen Valley



- Green hydrogen production through advanced AEL electrolysis
- Integrated at MOH's industrial refinery site

Supplies green hydrogen to



- Production
 - Storage
 - Distribution
 - Use Cases
- Transport
- Energy
- Industry

Regional Impact



Establishes a national hydrogen market in Greece



Model for Mediterranean hydrogen economies



Aligns with EU's climate neutrality and energy transition goals