NEWSLETTER 2025 - A YEAR IN ACTION

Message from our coordinator

Dear hydrogen enthusiasts,

It is our pleasure to welcome you to the very first edition of the EPHYRA project newsletter. Over the past two years, EPHYRA has been on an exciting journey - one filled with both challenges and opportunities - all met with determination, collaboration, and the strong commitment of our consortium partners.

EPHYRA — ***E****uropean* ***P****roduction of* ***HY****drogen from* ***R****enew****A****ble Energy Integration into an Industrial Environment* — is a pioneering EU-funded initiative aiming to demonstrate the integration of a first-of-its-kind, large-scale renewable hydrogen production facility in South-East Europe. The EPHYRA project, originally designed around a 30 MW electrolyser, has now been expanding to 50 MW thanks to additional support from the Recovery and Resilience Facility (RRF). This cutting-edge electrolysis system will be installed and operated within the Motor Oil Hellas refinery in Agioi Theodoroi, Corinth, Greece. This electrolysis plant will be powered by renewable energy sources, embedded in circular economy principles, and integrated directly into industrial operations.

Our goal is to demonstrate the feasibility, reliability, and cost-effectiveness of green hydrogen production at scale — ultimately contributing to the EU's Green Deal objectives and REPowerEU plan. EPHYRA is also designed to be replicable, scalable, and impactful, laying the foundation for a competitive hydrogen economy in the wider Southeast Mediterranean region. In a snapshot, if we were to introduce EPHYRA in just **three key facts**, it would be:

- Establishment of a 30 MW green hydrogen production facility, to be **upscaled to 50 MW** having secured additional RRF funding;
- Maximum annual production capacity of up to 7,500 tonnes of renewable hydrogen;
- Potential savings of 52.6 kilotonnes of CO_2 emissions over the project duration.

As we publish this newsletter, the project has well progressed witin its third year of implementation. Since the official kick-off in June 2023, the consortium has achieved key milestones in design, planning, and coordination. In this edition, we not only reflect on what has been accomplished so far, but also offer a look ahead — sharing our next steps, vision, and ambitions for the future of green hydrogen in Europe.

We hope you enjoy reading this update and continue to follow us as we bring EPHYRA's vision to life. We hope you are wrapping your year well! With warm regards,

Konstantinos Chatzifotis,
EPHYRA Project Coordinator | EU Affairs Manager Motor Oil Group

George Mitkidis,
EPHYRA Project Manager | Head of Alternative & Renewable Fuels Dpt, Strategy Division, Motor Oil Group

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EPHYRA Project

Acknowledgement

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Clean Hydrogen Partnership
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MUST-READ

The 50 MW Message!

EPHYRA's electrolyser is officially **scaling up from 30 MW to 50 MW** – a bold leap that reinforces Motor Oil Hellas' commitment to clean hydrogen and industrial transformation.

Click here to read more.

Grab Your Coffee and Have a Read!

Learn about EPHYRA with these 8 Questions

From technology and circular economy principles to socio-economic impacts and replication potential – this Q&A section dives deep into what makes EPHYRA a game changer for Southeast Europe.

Perhaps this can be a great way to get to know about our project for the first time!

Click here to read more.

New Study: Cutting Hydrogen Costs in Greece

EPHYRA researchers published a landmark study in Communications Earth & Environment, showing how active electricity trading and regulatory incentives can dramatically lower hydrogen costs.

Click here to access the article.

New Visual: Identity Revamp to Accelerate Public Engagement

This year EPHYRA has been rolling out a refreshed visual identity!

As we move forward into a more public-facing phase, our updated logo and visuals reflect the energy and innovation at the heart of the project.

Check out new visuals on our project website.

EPHYRA new logo - since 2025

EPHYRA Welcomes Three New Partners, Reinforcing Its Mission

As EPHYRA shifts toward a more public-facing phase, **ETA Florence Renewable Energies** has officially joined the consortium as the new communication and dissemination lead, strengthening and accelerating the project's outreach efforts.

In parallel, **ORCAN** joins the consortium to design and supply the ORC technology that will convert refinery waste heat into carbon-neutral electricity, which will be virtually allocated to the electrolyser through the refinery's advanced energy management system.

The **National Technical University of Athens (NTUA)** will consolidate and evaluate data from the ORC operation and assess the benefits and challenges of integrating the ORC with the electrolyser as a waste-heat-recovery-based cooling strategy. Together with Motor Oil (Hellas), NTUA will also compare this approach with an alternative electrolyser cooling strategy based on thermal desalination.

Read more details about the role of each partners in the project.

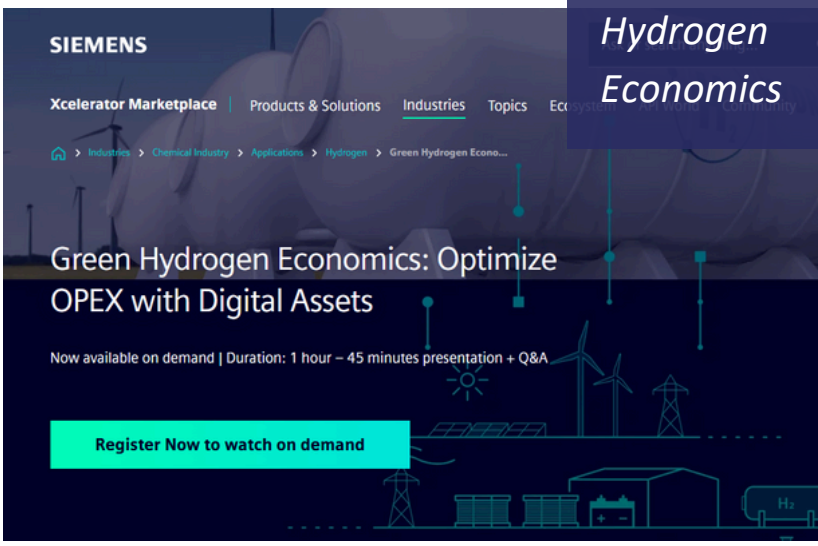
PROJECT COORDINATOR MOTOR OIL · CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS · SIEMENS · ENVIROMETRICS Climate | Environment | Energy · SoluForce · RINA · orcan The Efficiency Company · ita Instituto Tecnológico de Aragón · etaflorence renewable energies · DLR Institute of Low-Carbon Industrial Processes

Latest News: *EPHYRA at ERTC 2025 (Cannes)*

EPHYRA is exploring how cutting-edge Organic Rankine Cycle (ORC) technology can turn wasted refinery heat into reliable, zero-carbon power. During ERTC 2025 in Cannes, partners Orcan Energy and Motor Oil (Hellas) showcased how this innovation supports cleaner hydrogen production, boosts energy efficiency, and cuts emissions across refinery operations.

Click here to read more.

#Webinar: Green Hydrogen Economics



Last September, EPHYRA's partner SIEMENS hosted a workshop on mastering green hydrogen OPEX with advanced Digital Twin technology. As part of the discussion, Motor Oil Hellas brought in valuable insights from its journey towards large-scale renewable hydrogen production.

Click here to watch the full recording.

EPHYRA at European Hydrogen Week 2025 (Brussels)

At the 2025 European Hydrogen Week in Brussels, Motor Oil Group took the stage on the panel "Resilience of Critical Infrastructure: Energy and Digital" to share how its flagship projects – EPHYRA and TRIERES Hydrogen Valley – are driving the convergence of energy and digital innovation. Represented by Konstaninos Chatzifotis, EU Affairs Manager, Motor Oil highlighted how hydrogen and digitalisation together enhance industrial resilience, safety, and efficiency. ***Click here to read more.***

EPHYRA at Nuclear for AI Global Summit (London)

Last September, our project coordinator Motor Oil took the stage during the panel "Hydrogen Derivatives for Deep Decarbonization: Methanol, Ammonia & e-Fuels."

Together with emblematic EU-funded initiatives such as **IRIS CCUS Project** and **TRIERES - Greek Hydrogen Valley**, the EPHYRA project is advancing large-scale renewable hydrogen production to drive the decarbonization of energy-intensive sectors and accelerate Europe's clean energy transition.

EPHYRA at the 5th Go Net Zero Summit (Budapest)

Project Coordinator Konstantinos I. Chatzifotis presented EPHYRA's industrial-scale progress to an audience of policymakers and energy innovators, underscoring hydrogen's growing role in decarbonisation.

Click here to read more.

EPHYRA at the Athens Workshop on Hydrogen & CCUS

This was how EPHYRA kicked start the year with great energy! The project joined forces with TRIERES Hydrogen Valley and TWINN2SET projects in a high-impact workshop exploring hydrogen, carbon capture, and geothermal value chains – advancing Greece's clean energy vision.

Click here to read more.

AND MORE.... Visit our website for more updates!