

Towards the development of a hydrogen valley demonstrating applications in an integrated ecosystem in Greece

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3^η Ετήσια Γενική Συνέλευση
Συνδέσμου Υδρογόνου Κύπρου

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TRIÈRÈS

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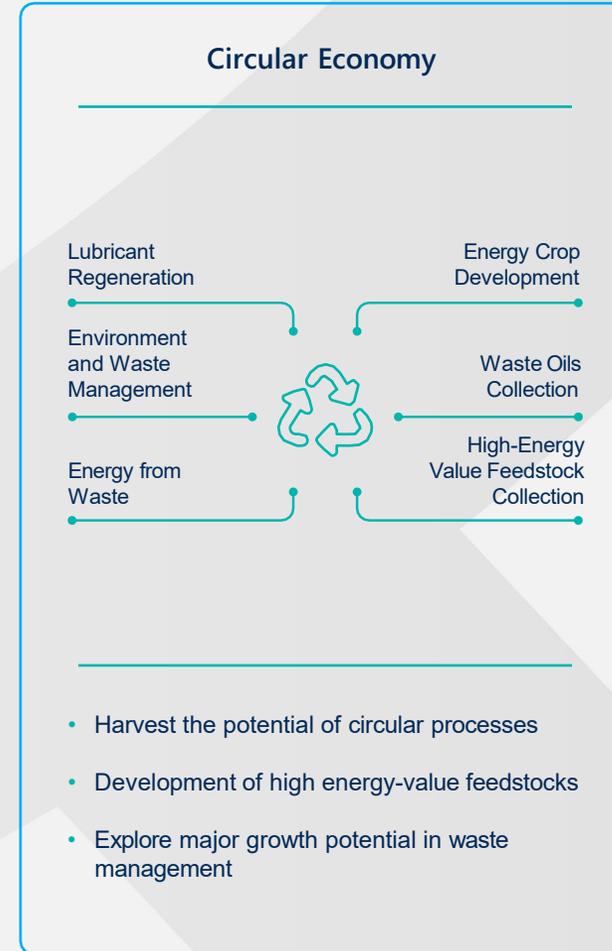
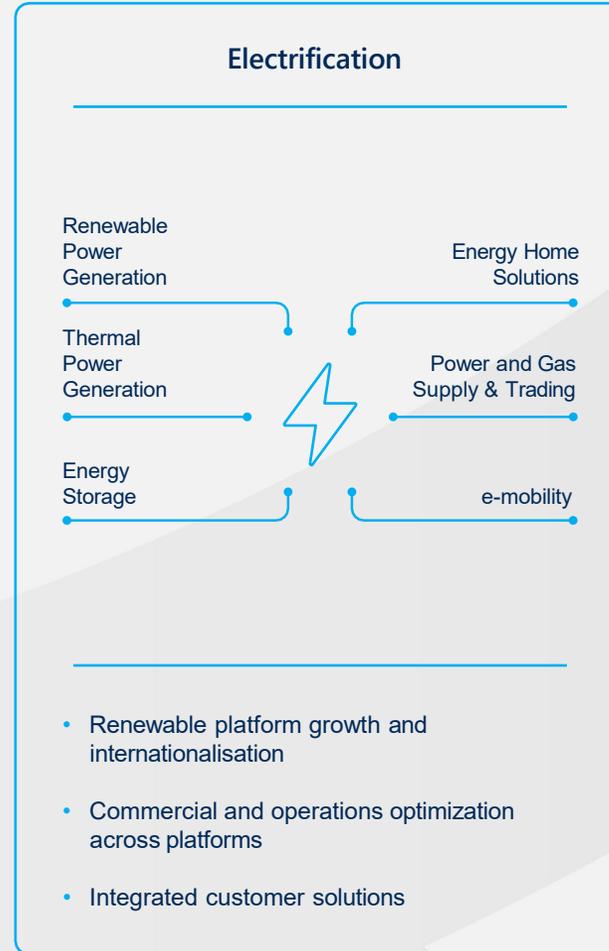
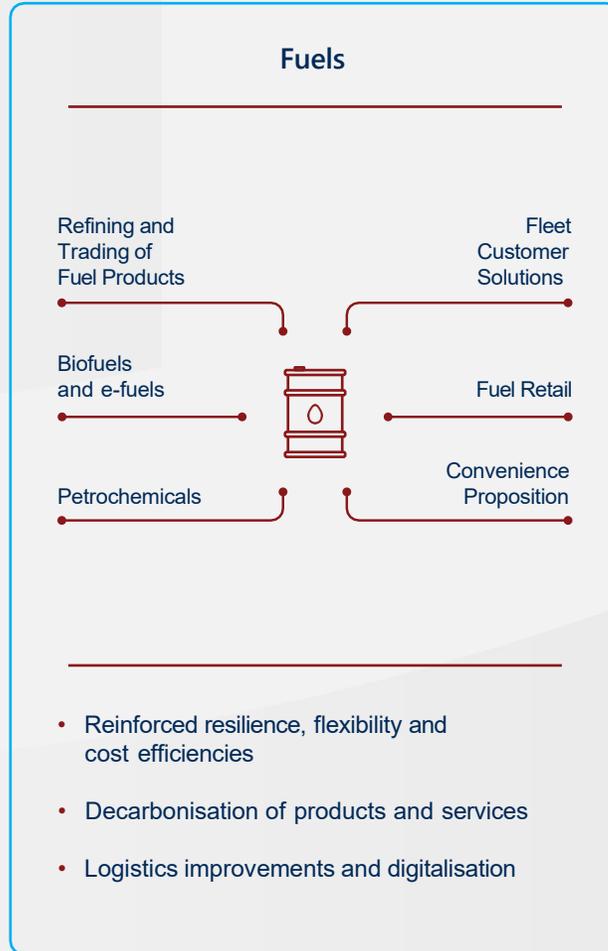


<p>Refining, Supply & Trading</p>  <p>Local Energy Champion with a Global Reach</p> <hr/> <p>~12,700 kt Refining Processed Volume¹</p> <p>12.61 NCI²</p> <hr/> 	<p>Retail</p>  <p>One of the Largest Mobility Networks in Greece</p> <hr/> <p>c.1,500 Fuel Stations in 5 Countries</p> <p>> 250,000 Electricity and Gas Customers</p> <hr/> 	<p>Regional RES Champion</p>  <p>#2 RES Operator in Greece</p> <hr/> <p>839 MW Installed Capacity</p> <p>2.7 GW Pipeline</p> <hr/> 	<p>Circular Economy and Alternative Fuels</p>  <p>Integrated Circular Economy Platform</p> <hr/> <p>~300,000 tpa Solid Waste Management</p> <p>43,000 tpa Lubricants Processing and Regeneration</p> <hr/> 						
<table border="1"> <tr> <td data-bbox="300 1002 667 1162"> <p>Financials (2024)</p> </td> <td data-bbox="667 1002 1085 1162"> <p>€12.2bn Revenues</p> </td> <td data-bbox="1085 1002 1503 1162"> <p>€0.967bn EBITDA</p> </td> <td data-bbox="1503 1002 1921 1162"> <p>€433ml Investments</p> </td> <td data-bbox="1921 1002 2186 1162"> <p>€1.4 Dividends per Share</p> </td> </tr> </table>					<p>Financials (2024)</p>	<p>€12.2bn Revenues</p>	<p>€0.967bn EBITDA</p>	<p>€433ml Investments</p>	<p>€1.4 Dividends per Share</p>
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Notes: 1.2023. 2. The Nelson Complexity Index (NCI) is a measure of the sophistication of an oil refinery.

Motor Oil Group at a Glance

Route to 2030

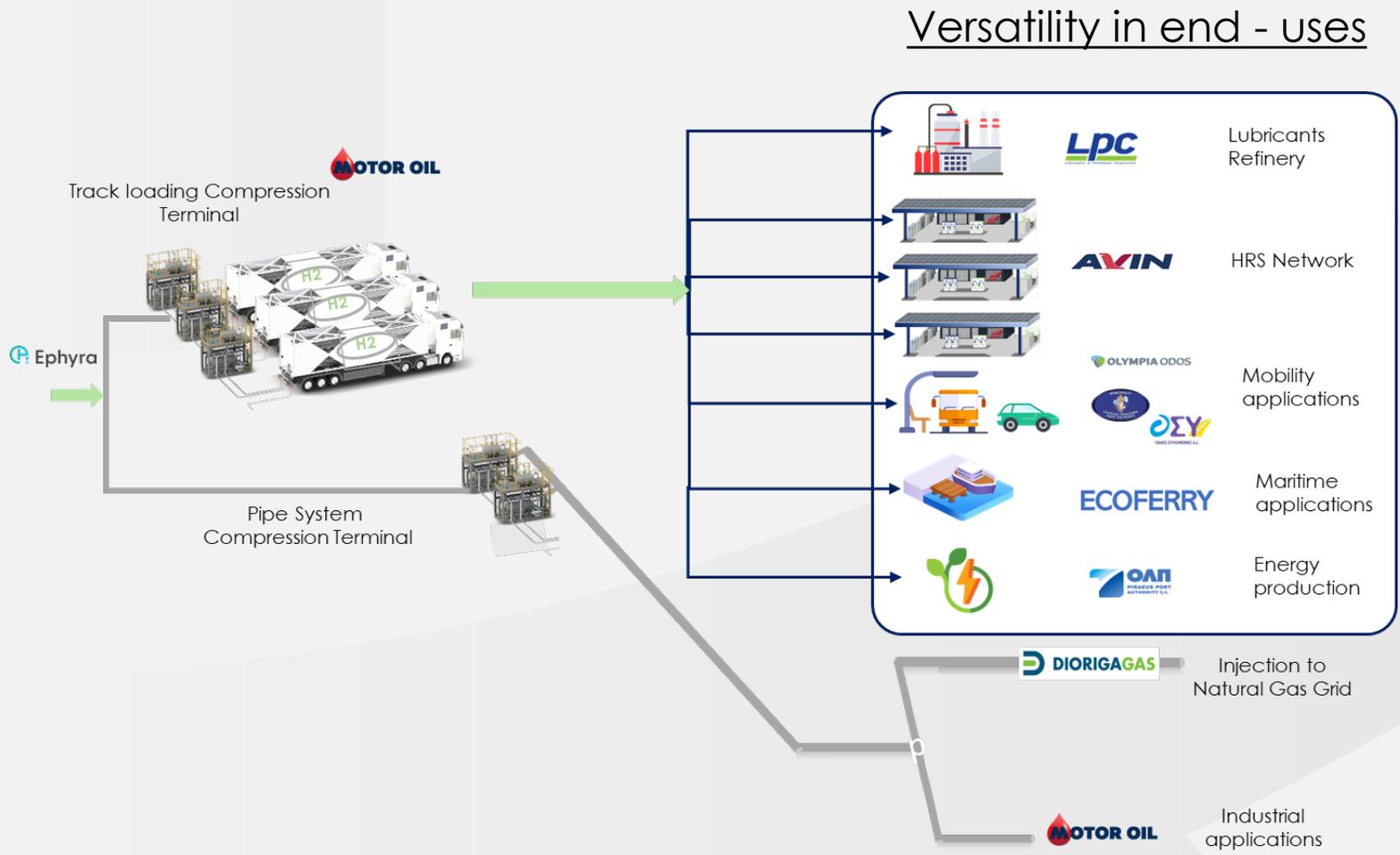


Project Summary

- **Coordinator:** Motor Oil Hellas
- **Consortium:** 26 partners across 5 countries (GR, NL, AT, CY, EG)
- **EU Funding:** €8 M (Clean Hydrogen Partnership)
- **Duration:** July 2023 – April 2028 (58 months)
- **Annual H₂ Production:** 2,410 tons of renewable H₂ (30 MW electrolyser)
- **Annual CO₂ Savings:** 9,880 tons via fuel substitution



Value chain - from enhanced renewable H2 production to a small-scale valley operations



Versatility in end - uses

Horizontal Activities

- Development of a **digital twin** to simulate valley operations
- Creation of business models for **replication** and **scalability**
- Engagement with national authorities to further **enhance and harmonise the regulatory framework** in line with EU

Additional expected outcomes

- **Technical, regulatory, and business blueprint for future hydrogen valleys** – follower regions as Cyprus and Egypt
- **Contribution to the Greek H₂ value chain** and broader **East Med region**

Overall Progress up to date



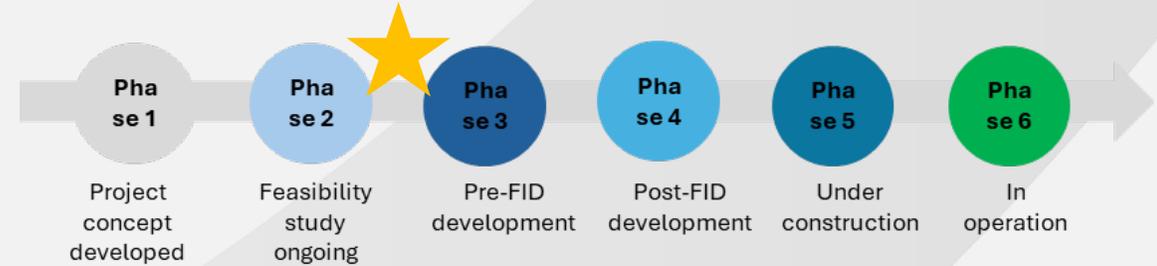
EPHYRA electrolyser: FEED completion (MOH), EPC phase

Logistics: 4 H₂ tube trailers acquired (3 CH JU, 1 MOH)

Infrastructure: 1st HRS operational (AVIN Ag. Theodoroi – REA project – CEF-T)

Mobility Pilots:

- 1 LD vehicle in procurement (Municipality of Loutraki)
- 2 FC buses under tender prep (OSY)
- 1 HD vehicle in market research (OLYMPIA ODOS)
- Maritime retrofit under study (SHIPPING COMPANY)



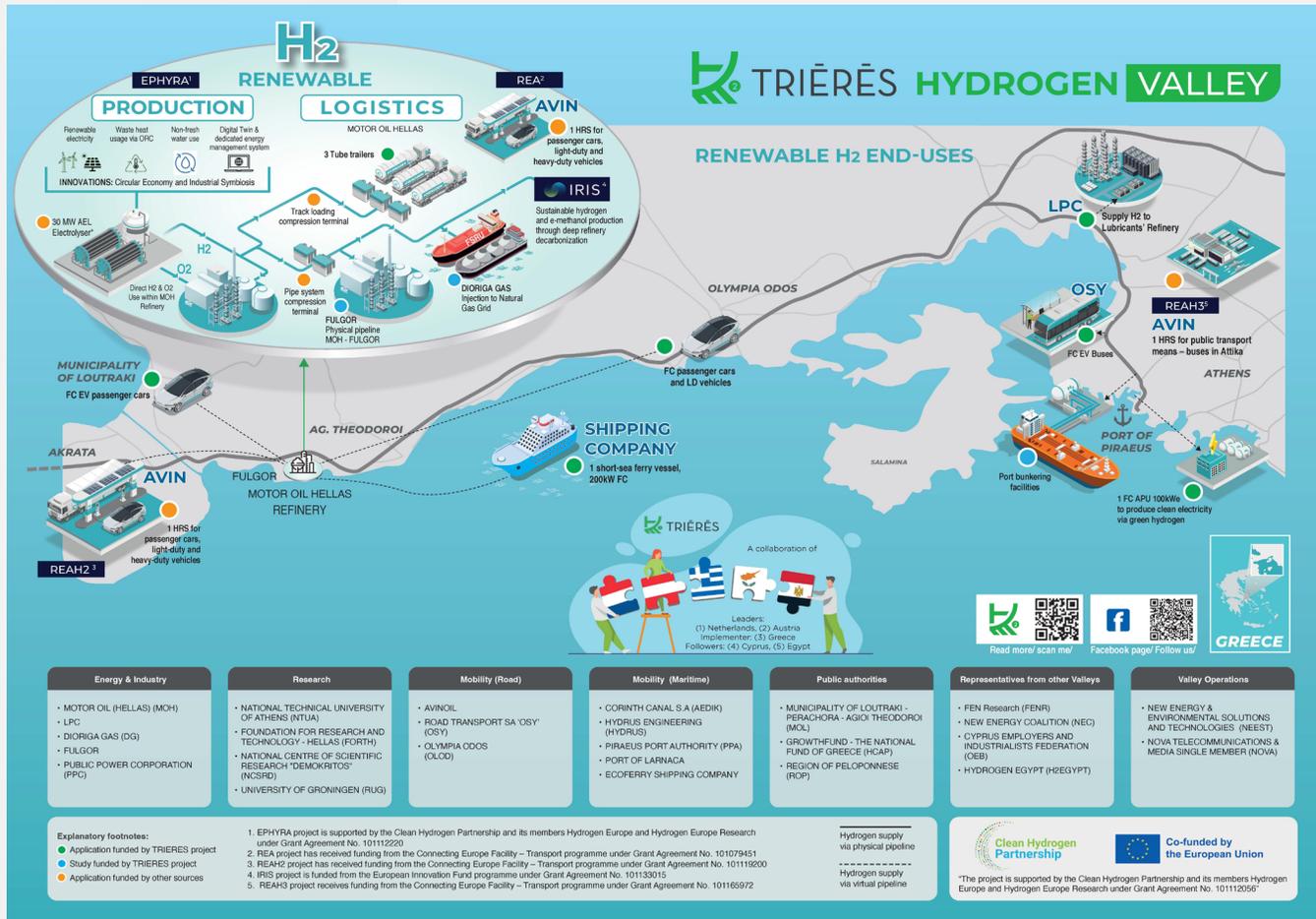
Energy & Industry Pilots:

- 100 kW FC APU (energy) under market research (PIRAEUS PORT)
- Lubricants factory conversion progressing; permit submitted (LPC)

Regulation: Engaged on Law 5151/2024 (Art. 63 – hydrogen supply regime)

R&D: Digital twin and publications ongoing

EU H2 Valley of Year 2024 Award!



Successes / What Others Can Learn:

- ✓ Integration of multiple funding instruments (CH, JU, CEF, RRF, EIB)
- ✓ Diverse pilot applications, first of their kind in Greece: industry, mobility (road & maritime), energy,
- ✓ Diverse feasibility studies for existing and future applications of hydrogen
- ✓ Early investments in infrastructure (HRS, trailers)
- ✓ Strong public-private-academic collaboration
- ✓ Knowledge exchange with other pioneering EU Hydrogen Valleys (Netherlands, Austria)

Valorising different funding sources...



Clean Hydrogen Partnership

- **EPHYRA**: renewable H2 production
- **TRIÈRÈS**: small-scale H2 valley



Innovation Fund

- **IRIS**: carbon capture storage and use via e-methanol production unit



CEF - Transport

- **REA**: 1st commercial HRS for light and heavy-duty vehicles in Agioi Theodoroi
- **REAH2**: 2nd commercial HRS for light and heavy-duty vehicles in Akrata
- **REAH3**: HRS for public transport buses in OSY depot in Thrasio, Attika



State Aid - RRF

- **GREEN HYDROGEN**: 111,7 M € grant primarily supporting infrastructure development and their respective construction works, while also adding a 20MW electrolysis unit to the existing 30MW system at the Agioi Theodoroi Refinery, increasing the production of green hydrogen to a maximum of 7,500 tons per year (out of which 4,500 tons already produced through the EU project EPHYRA), powered by energy from renewable sources.



2024: 3rd JIVE bus roadshow in Greece
 2025: TRIERES regional workshop in Corinth

...from design to implementation...



- Vendor selected
- FEED completed
- Project on track to deliver Green H2 by 2026



- Under Implementation
- The project is progressing with delays in PreFEED/FEED phase



- The 1st **Hydrogen Refueling Station (HRS) – REA** installed inside a new service station of AVIN
- Located near the central TEN-T road network in the area of Ag. Theodoroi, Corinth, Greece
- Serves as a **gateway and local hub** to the south part of **Orient/East Med corridor**.



REA – The 1st HRS to be commissioned in Greece & 1st AFIF HRS in Europe



REA 1st HRS in Ag. Theodoroi - Operational by Q2 2025

- The 1st **Hydrogen Refueling Station (HRS) – REA** will be installed inside a new service station of AVIN OIL (AVIN) located near the central TEN-T road network in the area of Ag. Theodoroi, Corinth, Greece
- It serves as a **gateway and local hub** to the south part of **Orient/East Med corridor**
- Supply-chain by compressed Hydrogen loading terminal to be operational in 2026 and transport by **4 tube trailers** readily available with ability to reach up to 500km



Source: EPHYRA Electrolyzer by Refinery

Mass flow (compressor): 65 kg/hour minimum

Service Capacity: Trucks, Buses, Cars

Pressure Levels: 350 bar and 700 bar

* REA project is funded from the Connecting Europe Facility programme under Grant Agreement No. 101079451.
* REAH2 project is funded from the Connecting Europe Facility programme under Grant Agreement No. 101119200.
* REAH3 project is funded from the Connecting Europe Facility programme under Grant Agreement No. 101165972.

Hydrogen Refueling Station Agioi Theodoroi



Dispenser



Compressor Area



Storage Area



ded by
ropean Union



TRIÈRÈS Why TRIERES Matters for Cyprus



A blueprint for future hydrogen valleys in the East Med

TRIERES is **explicitly designed to be replicable** – Cyprus is named as a **"follower region"**

Offers:

- Technical roadmap for infrastructure deployment
- Business models for scaling and investment attraction
- Regulatory insights (esp. based on Greek Law 5151/2024 on H₂ supply)
- Cross-border knowledge sharing with similar geography, energy profile



TRIÈRÈS

Enabling Conditions: What Cyprus Can Take Forward



Insights from TRIÈRES implementation:

- Early investments in infrastructure (HRS, tube trailers)
- Multi-source funding (CH JU, CEF, RRF, Innovation Fund, EIB)
- Real-life challenges (permitting, end-user incentives, awareness)
- Close engagement with national authorities and EU bodies

Thank you!

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<https://www.trieres-h2.eu/>



<https://www.linkedin.com/company/trieres-h2-valley/>



<https://www.youtube.com/@TRIERES-H2>



[Trieres Greek Hydrogen valley](#)

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