Webinar

29.01.2026

DELYCIOUS - Diagnostic tools for ELectrolYsers: Cost-efficient, Innovative, Open, Universal and Safe

DELYCIOUS

Clean Hydrogen Partnership

Co-funded by the European Union

The project is supported by the Clean Hydrogen Partnership and its members under the GA 101192075. Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Clean Hydrogen Partnership. Neither the European Union nor the granting authority can be held responsible for them.

Project Facts

CALL TOPIC

HORIZON-JTI-CLEANH2-2024-01-04 - Development and implementation of online monitoring and diagnostic tools for electrolysers

EU FUNDING

About 4 M €

PROJECT START

01.01.2025

DURATION

3 years

CONSORTIUM

8 partners spreading across 5 European countries

COORDINATOR

Fraunhofer IWES

TECHNICAL MANAGER

Air Liquide ICF

Common challenges

DELYCIOUS - Diagnostic tools for ELectrolYsers: **Cost-efficient**, **Innovative**, **Open**, **Universal** and **Safe**

Stack Durability
Extending the lifespan of electrolyzer stacks.

Energy Reliability
Maintaining performance with variable energy inputs.

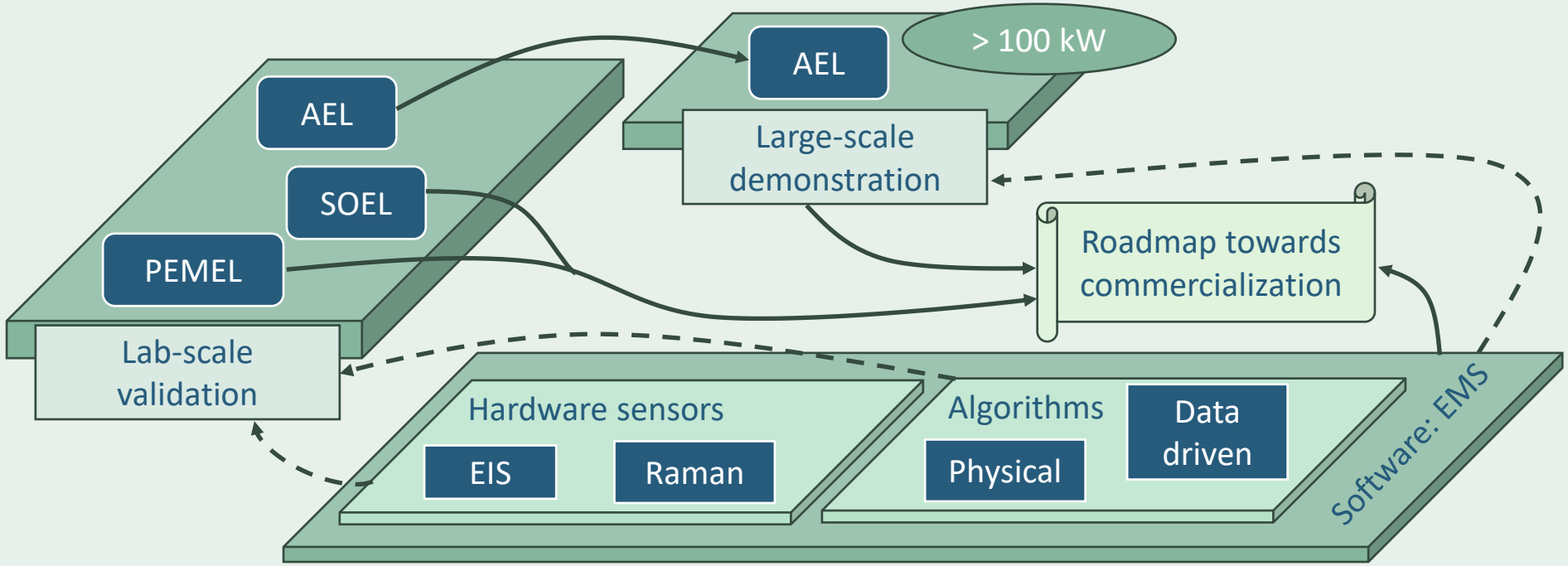
Operational Optimization
Developing real-time monitoring tools to fine-tune operation and reduce degradation.

Cost Efficiency
Lowering the overall system and ownership costs.

Aim of DELYCIOUS

Overall goal: Advancing electrolysis technologies for industrial-scale renewable hydrogen production

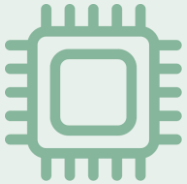
Development of universal diagnostic tools for commercial technologies **AEL**, **PEMEL** and **SOEL**



Electrolyzer management system (EMS) for large-scale application: Combination of data of sensors and algorithms to reach KPIs for **fault prediction, reliability, safety, lifetime extension** and **cost reduction**.

Strategic project objectives

Develop a Flexible Test Platform
Create a lab-scale testing environment adaptable to various electrolysis technologies.



Advanced Hardware Sensors
Implement and optimize sensors to monitor and detect electrolysis degradation mechanisms.

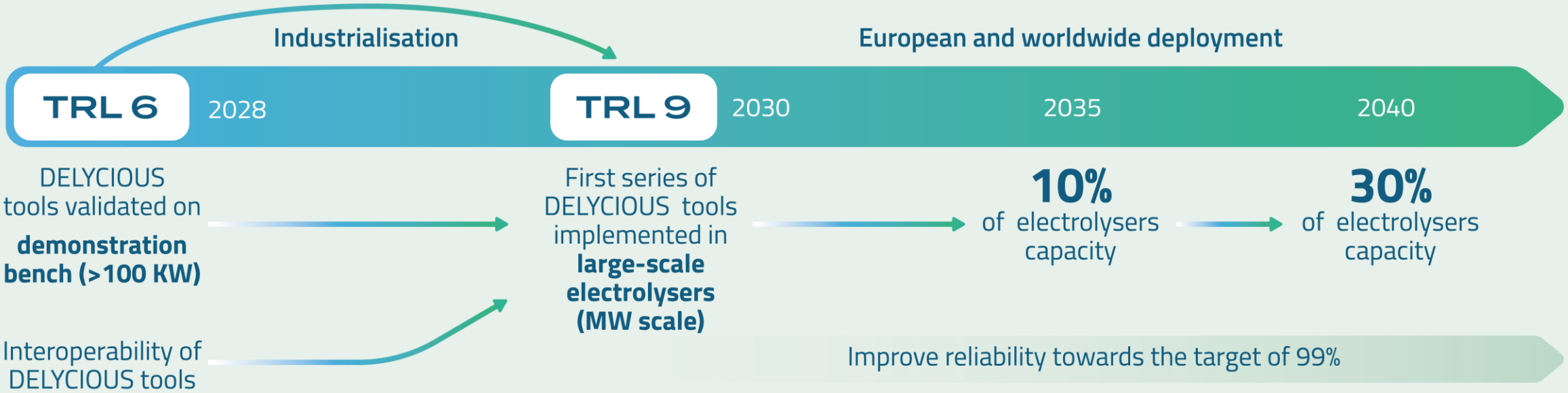
Large-Scale Demonstration
Validate the functionality, resilience, and scalability of tools, sensors, and EMS at systems exceeding 100 kW.

Cutting-Edge Algorithms
Develop advanced algorithms for a comprehensive understanding of degradation processes.

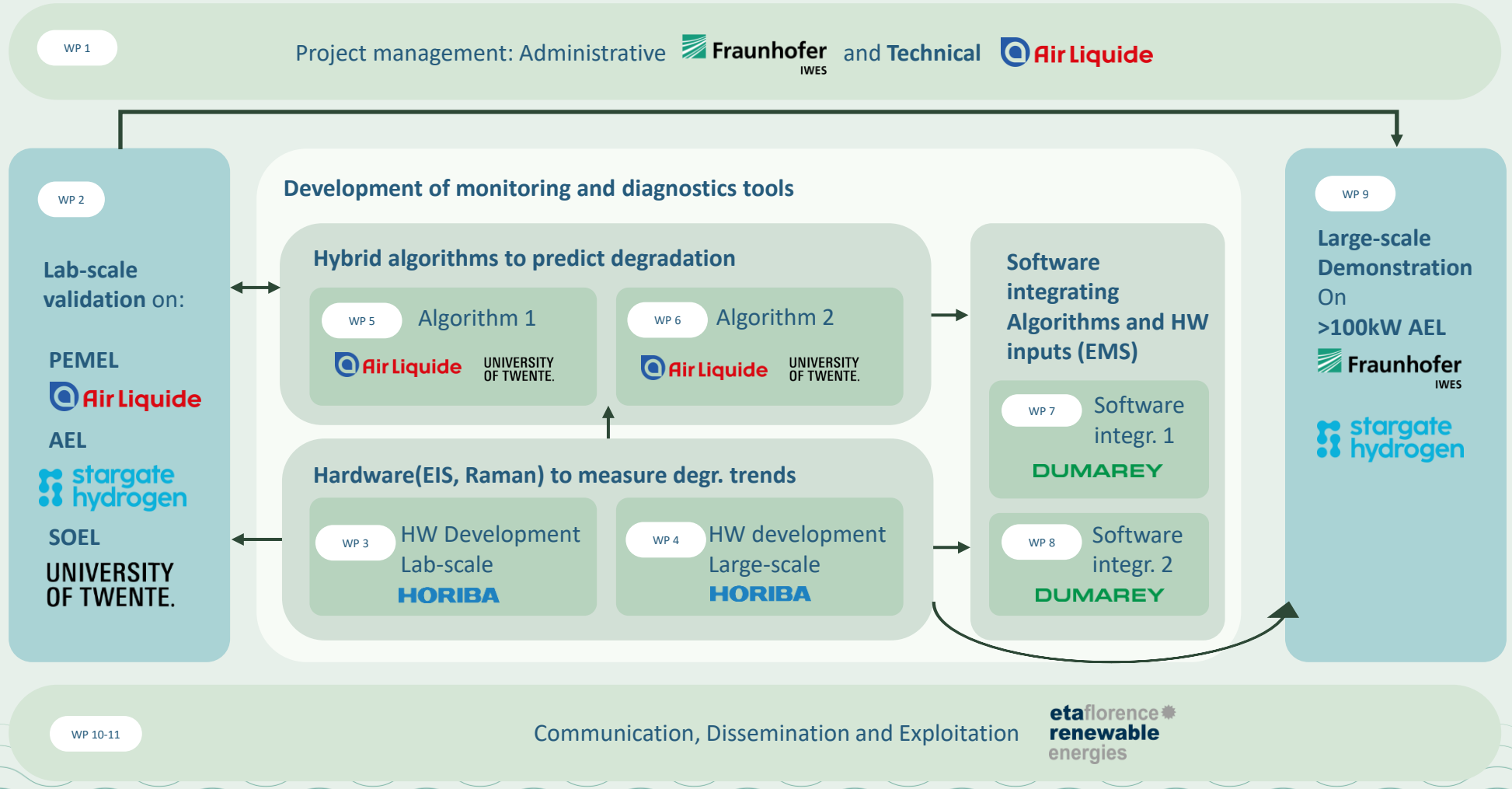
Open-Access Software Platform
Establish an Electrolyzer Management System (EMS) alongside an open-access monitoring and diagnostic platform.

Roadmap to Commercialization
Develop a clear roadmap to support commercial utilization by 2030 and guide large-scale deployment.

Expected impact: Roadmap to commercialization



Project Structure



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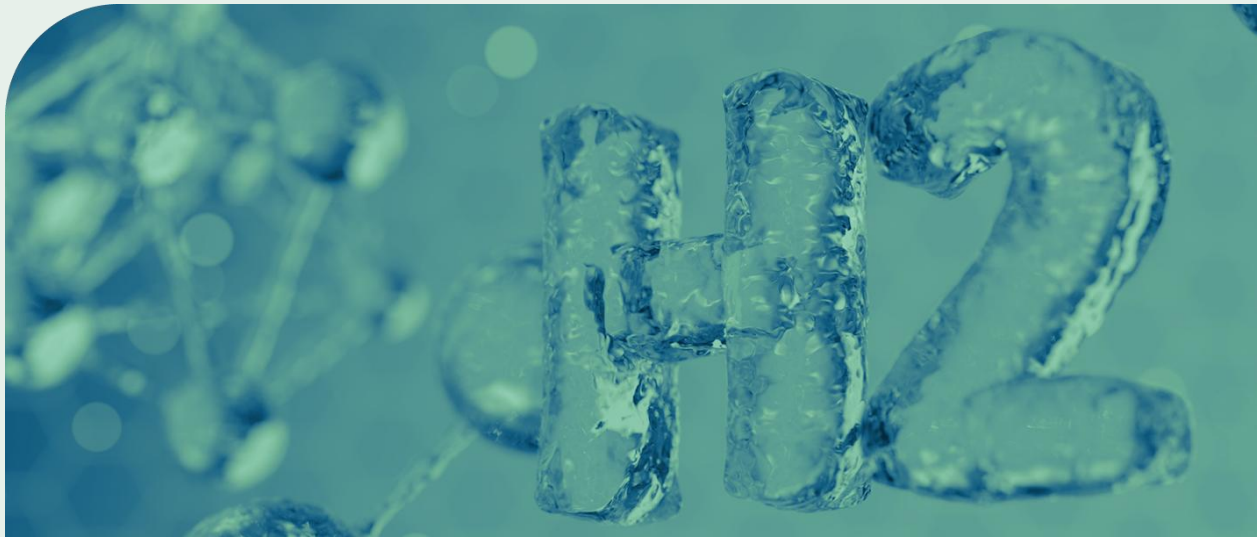
DELYCIOUS

Contact: aline.luxa@iwes.fraunhofer.de

Delycious-project.eu

DELYCIOUS project



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