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Over the past six months, the ADVANCEPEM project has advanced from lab-scale testing to the preparation of large-area MEAs and finalise stack design, paving the way for short-stack validation and full system design.

UPCOMING DELIVERABLES

- D3.2 – Reinforced membrane scaling-up (M30)
- D5.2 – MEA performance and stability (M32)
- D5.3 – High pressure stack (M36)

UPCOMING EVENTS

- 25th – 29th August (Freiburg, Germany): 5th International Conference on Electrolysis** Fausta Giacobello, researcher at CNR-ITAE, will present results of the performance and durability tests on different Aquivion® membranes for improved PEM water electrolysis.
- 17th – 19th September (Capri, Italy): European Fuel Cells and Hydrogen Piero Lunghi Conference** Antonino S. Aricò, director of CNR-ITAE, will present results of the study on thin short-side-chain Aquivion® membrane for sustainable PEM water electrolysis application.



Advancing Catalysts and Membranes

Catalysts and membrane production has continued at pace. Syensqo finalised the second batch of the new reinforced membranes, which showed strong performance at high current densities and temperatures. Catalyst batches produced by CNR-ITAE continue to meet expectations and compatibility between batches has been confirmed, supporting consistent MEA production.

Scaling-up Large-area MEA Production

IRD has successfully produced 10 large-area MEAs using the new reinforced membranes. These will be used for short stack testing at Oort Energy, scheduled for September. Preparations are already underway for the production of the full batch of MEAs needed for complete stack assembly later this year.

Preparing for Stack Integration

With the stack design now finalised, Oort Energy is preparing for both short and full stack integration, pending validation of MEA performance under pressure. Close coordination around pressure data and MEA delivery remains key for upcoming milestones.

System Demonstration

Oort Energy and RWE have begun planning the installation of the system at the demonstration site. Permitting activities are in progress, with safety aspects such as hydrogen venting and water supply infrastructure under review. Engagement with local stakeholders is planned for late 2025.

Life Cycle Assessment

HSSMI is completing data collection for the stack and collaborating with Oort Energy on the system's key components to be included in the analysis. Work has started on identifying potential end-of-life strategies to support circularity and sustainability goals.

PARTNERS:



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