



## PROJECT UPDATES

Hosted by Syensqo (formerly Solvay) in Bollate (Italy), the latest 12M meeting was packed with progress updates and strategic planning. Two new deliverables have been submitted and marked steady progress towards the achievement of project milestones. Partners also got an inside look at Syensqo's cutting-edge facilities, highlighting the collaborative spirit driving innovation.

Next stop: Odense (Denmark) for the M18 meeting where the ADVANCEPEM Partners will prepare for the crucial mid-term review meeting.



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## MEMBRANE DEVELOPMENT

Deliverable D3.1 reports on the progress around the development of a robust proton exchange membrane (PEM) with enhanced proton conductivity, mechanical stability and reduced fluorine release. To meet these goals, scientists at Syensqo are exploring various strategies, including assessing Aquivion® ionomer properties, investigating different PEM reinforcement technologies and exploring the use of additives like radical scavengers. Future work will be focused on scaling-up the production to prepare sufficient reinforced membrane to feed WP5 (MEAs and Stack Engineering).

## DELIVERABLES

### Submitted Deliverables

D3.1 – Development of membranes and ionomers  
D4.1 – Electro-catalyst development

### Upcoming Deliverables & Milestones

D1.2 – Annual Report Year 1 (M15)  
D5.1 – MEA engineering (M18)  
MS1 – Reinforced Aquivion® membrane for high pressure and high temperature operation (M15)  
MS3 – High performance electrocatalysts and efficient recombination catalyst (M15)  
MS5 – Engineered MEAs for gas crossover management (M18)  
MS6 – High performance large area MEAs (M18)

## UPCOMING EVENTS

20th – 24th March 2024 (Prague):  
Hydrogen Days 2024 - 14th  
International Conference on  
Hydrogen Technologies

Stefania Siracusano, researcher at CNR-ITAE will present results of the study on CE-radical scavenger-based perfluorosulfonic acid Aquivion® membraned for pressurized PEM electrolyser application.

## CATALYSTS DEVELOPMENT

Deliverable 4.1 summarises the work of researchers at CNR-ITAE around the development of improved catalysts with reduced noble metal content and increased current density compared to the state-of-the-art. This includes the development of advanced anode and cathode electrocatalysts as well as a recombination catalyst. Strategies involve tailoring surface chemistry and electronic effects to enhance intrinsic activity and stability. These catalysts were integrated into membrane-electrode assemblies for performance and durability tests. Future work will revolve around further optimising the catalyst loading and testing the relative performance and stability of the MEA towards the achievement of upcoming milestones.

## PARTNERS



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