

Driving forward European fuel cell technology

The GAIA consortium has succeeded in reaching the 1.8 W/cm² @ 0.6 V power density target set by the FCH 2 JU 2018 Call for Proposals. This leading accomplishment, which hits the FCH 2 JU Multi-Annual Work Plan target for light-duty vehicles for 2024, was achieved with high performance membrane electrode assemblies (MEAs) that integrate new materials and designs developed in the project in a full-size-cell (300 cm²) 4-cell stack, providing a Pt specific power density of 0.25 g Pt/kW. Advancements on a single-component level were not sufficient to reach the very ambitious target, and significant coordinated progress and synchronised innovation in catalysts, catalyst supports, ionomers, membranes, gas diffusion layers, catalyst layers and MEA design were all essential.

Their performance validation underpins the further development of these materials, components and MEAs into future commercial offerings, and their end-use, by GAIA's industrial partners. GAIA intends to continue to advance in the remaining 9 months of the contract by now targeting 6,000 operation hours, including at 105 °C, of a 10-cell short-stack. A techno-economic evaluation will then assess how the GAIA MEA cost is positioned with respect to the 6 €/kW MEA cost target of the Call.

This performance validation future commercial exploitation by GAIA's industrial materials developer and components supplier and end-user partners.