

Shell - Ceres MW Scale Electrolyser Project Produces First Hydrogen



Ceres Power has announced that its first megawatt solid oxide electrolyser cell (SOEC) demonstrator system, located at Shell's Technology Centre in Bangalore, India, is now producing hydrogen. This milestone marks an important step, demonstrating the first megawatt-scale SOEC system in India and the maturity of Ceres' solid oxide electrolyser technology, supported by Shell's installation, integration and safety assurance expertise.

Shell and Ceres have been in collaboration since 2022, leading to the deployment of the megawatt-scale electrolyser with the potential to produce hydrogen at 600 kg per day at full capacity with an electrolyser module efficiency of 37kWh/kg H₂. The metal supported design from Ceres allows it to operate at lower temperatures than current state of the art SOEC technology. The operational phase of the demonstrator is expected to show how this brings robustness and lower operational costs.

The start of hydrogen production by this demonstrator system marks the beginning of the operational phase of this project, with data and learnings used to develop a commercially competitive and scalable solution for industrial processes.

This achievement illustrates how Ceres' high efficiency technology can scale to meet the needs of industry and deliver a route to economically viable hydrogen for green steel, ammonia and synthetic fuels. India has ambitious plans, targeting development of green hydrogen production capacity of at least five million metric tons per year by 2030 and technological advancements, just like the one we have announced today, are aiming to contribute to this goal by helping to build and galvanise India's clean energy ecosystem.

CEO of Ceres Power

Hydrogen has a huge role to play in a low-carbon energy system as a feedstock for low carbon gases and low carbon fuels. We are working with Ceres to help advance technologies that can deliver hydrogen efficiently and reliably. This latest milestone is the next stage in helping us to learn and evaluate the best approach to producing lower-cost electrolysed hydrogen. We are thrilled to begin SOEC hydrogen production.

Theo Bodewes

General Manager of Hydrogen at Shell Projects & Technology