



## **AMPS Project Powers the Future: Empowering Solid Oxide Cell Manufacturing**

*Embarking on a Horizon Europe Journey to Transform Solid Oxide Cell Manufacturing*

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Electrification stands as the primary choice for decarbonisation efforts, yet its application is not always technically viable or cost-effective. Industries facing significant decarbonization challenges, such as **hard-to-abate sectors** (e.g. steel, cement, fertilizer) as well as **heavy-duty transport** (e.g. trucks, maritime, aviation) require alternative solutions. Hydrogen or hydrogen-derived fuels (commonly known as e-fuels) emerge as crucial elements for transitioning away from fossil fuels in this demanding context. To successfully navigate this transition, **efficient and affordable electrochemical technologies (fuel cells and electrolysers)**, becomes imperative. Notably, high-temperature technologies offer best-in-class efficiencies and extensive flexibility in handling various input streams. Moreover, they demonstrate the unique capability of working in reversible mode within the same component, enhancing their overall versatility and utility in diverse applications.

**AMPS** is a **Horizon Europe funded project** (8.7 M€ budget, 6.6 M€ funding) started in June 2023. The primary focus of this project is the advancement, demonstration, and validation of **cost-effective, high-volume production techniques** and **quality control measures** for manufacturing SOC (Solid Oxide Cell) components and stacks. These goals are achieved within real-time production environments, underscoring the project's commitment to practical and impactful contributions to the field.

The primary objectives of AMPS include automated high-speed production of SOC cells, bipolar and interconnect plates, along with automated high-speed stack assembly, with integrated quality control. A complete component tracking and optimized mass-manufacturing will be achieved by using virtual twins. Ultimately, the project aims to assess and demonstrate a **target stack manufacturing cost of <800 €/kW at production volume of 100 MW/year**, with the all-embracing objective of establishing a dedicated European supply chain for SOC manufacturing equipment.

### **Consortium:**

This initiative unites prominent European companies engaged in the production chain of Solid Oxide Fuel Cells and Solid Oxide Electrolysers. The project is coordinated by VTT and comprises automation firms such as Rocksoft and Smartal, along with manufacturing equipment producers SITEC, Haikutech, Fincoat and Dosetec. The project also involves cell manufacturing by Elcogen AS and stack manufacturing by Elcogen Oy. These industry partners receive support from research institutes Polito and VUTS.

AMPS project website: <https://www.amps-project.eu/>



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