

Project number: 1.2.1.2.i.2/24/A/CFLA/003

Project “Development of medium power PEM electrolyser with a new generation of catalytic coatings”

AI Cooperation SIA is issuing this Request for Proposal (RFP) for a 50kW Proton Exchange Membrane (PEM) electrolyzer stack. AI Cooperation is looking for a solution that can enhance hydrogen production operations at small to medium scale, connected to renewables. We are reaching out to explore your system’s capabilities in meeting their specific requirements.

1. Technical Specifications

Please provide detailed information on the following parameters for your 50kW PEM electrolyzer stack:

- Net Hydrogen Production (Nm^3/h , kg/day)
- Hydrogen Pressure (bar)
- Hydrogen Purity (%)
- Efficiency (Stack/System) (%)
- Energy Efficiency of the System Depending on Load (kWh/Nm^3)
- Electrolysis System Power Rating (kW)
- Load Range (%)
- Load Change Rate (%/s)
- Feeding Water Consumption ($\text{l}/\text{Nm}^3 \text{H}_2$ or $\text{l}/\text{kg H}_2$)
- Deionized Water Consumption ($\text{l}/\text{Nm}^3 \text{H}_2$ or $\text{l}/\text{kg H}_2$)
- Water Quality requirements
- Input Power (AC, max) (kW)
- Operating temperature ($^\circ\text{C}$)
- Dimensions, Footprint, Weight (m, kg)
- Proven Stack Lifetime (h)
- Electrolyzer Stack Price (EUR)
- Operating Costs (EUR/year)
- Ensured after-sales service
- Country of origin European Union

2. Advanced Features

- **New Coating Integration**

The project also aims to incorporate advanced nano-coatings for stack components. Please indicate the possibility of incorporating new coatings for the following components of your stack:

- Bipolar Plates (BPP)
- Catalyst Coated Membranes (CCM)
- Porous Transport Layer (PTL) / Gas Diffusion Layer (GDL).

- **Rainbow Stack Capability**

AI Cooperation is interested in your system's ability to integrate a rainbow stack for enhanced flexibility and operational optimization. Please inform if this feature is available and provide any relevant performance details.

- **Stack Testing**

AI Cooperation gives preference if stack testing for performance validation and durability testing is available at your Company. Please provide information on available stack testing protocols, including the range of conditions under which the system can be tested (e.g., pressure, temperature, current density) and the data outputs available from these tests (e.g., degradation rates, voltage profiles, impedance measurements).

3. Delivery Timeline

Please specify the estimated delivery time for a 50kW PEM electrolyzer stack. AI Cooperation's expectation is that stack is delivered in no longer than 5 months after the advance payment.

Please indicate any additional lead time required for the inclusion of new coatings or making a rainbow stack.

4. Proposal Submission Deadline

We kindly request that you submit your proposal, including pricing and lead times, **by 20 December 2024**.

Please feel free to contact us with any clarifications or additional information you may require.