

Press Release

**Ecoclean embarks on the industrialization of a future technology
Development of scalable electrolysis systems**

Electrolysis is a key technology on the road to carbon neutrality. To implement the technology effectively and sustainably, internationally competitive and scalable electrolysis systems in the megawatt range need to be developed swiftly and brought to serial production. Ecoclean GmbH is addressing this task together with the Center for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) in the joint project “EcoLyzer BW.” The company, already renowned as an internationally active manufacturer of systems for industrial parts cleaning and surface treatment, is thus expanding its business fields to include a technology of the future.



Electrolysis is a process that uses electrical energy to break down water into its constituent elements, oxygen and hydrogen. Due to the strong growth in renewable energies, in particular solar and wind energy, the production of hydrogen with green electricity will play a much more prominent role in the future. This is because clean

hydrogen is considered as one of tomorrow's energy carriers. In a recent study, the Roland Berger management consulting company forecast a requirement in Europe for more than 45 million tons of hydrogen by 2050. The global demand for electrolysis systems is therefore expected to rise sharply. Currently, about ten companies around the globe supply commercial electrolysis systems on a megawatt scale. This market therefore offers huge growth potential.

In the joint EcoLyzer BW project funded by the Ministry of the Environment Baden-Württemberg, Ecoclean and the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) are starting to develop, build up corresponding production capacities and market an internationally competitive electrolysis system worldwide. The basis is formed

by a system technology developed by ZSW over the last ten years for electrolysis in the megawatt output range. The already well-tested and robust technology can also be scaled up to higher outputs. Moreover, unlike other electrolysis processes, it does not require any scarce raw materials such as precious metals and rare earths.

Scalable modular system for electrolyzers

In the first step of the funding project, among other things, the scalability, system design and individual modules of the “Made by Ecoclean” electrolyzer is being defined. Ecoclean's aim is to develop a scalable modular system using a basic model with an output of one megawatt. This will enable approximately 20 kilograms of hydrogen to be produced per hour, sufficient to refuel three passenger cars and drive a total of 2,000 kilometers. The standard product will be scalable both downwards and upwards - initially up to an output of around ten megawatts. Parallel to this, manufacturing capacities are being built up. Production of the first systems is scheduled to start in 2023.

By combining ZSW's expertise in electrolysis blocks and Ecoclean's experience in mechanical and plant engineering, the project partners believe they are well positioned to reach this goal.

Indispensable for the energy transition

For one, the hydrogen produced can be used to store renewable energy from wind power and photovoltaic plants or to transfer it to other energy sectors, such as heat supply and transportation. For another, energy-intensive industrial sectors such as the steel and chemical industries can be transformed to become carbon neutral. This makes the EcoLyzer attractive, for example, to municipalities that want to convert their public transport to alternative technologies and erect hydrogen filling stations. The project partners also see considerable industrial policy opportunities in exporting the electrolysis systems to countries with more favorable solar and wind conditions, so-called Power-to-X regions.

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