



# Press release 02/2016

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## **New electrolysis project makes power-to-gas commercially viable**

### **Researchers and engineers reduce costs of hydrogen production through technology transfer from automotive industry and advance the energy transition**

**In conjunction with the engineering partner IAV, the Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (Centre for Solar Energy and Hydrogen Research Baden-Württemberg, ZSW), the Reiner Lemoine Institut (Reiner Lemoine Institute, RLI) and Wasserelektrolyse Hydrotechnik (HT) are researching cost-effective methods of producing hydrogen with the help of automotive technology. In the context of the 'ecoPtG' project, the researchers and engineers are developing an alkaline water electrolyzer with an output of 100 kilowatt. They aim to demonstrate that CO<sub>2</sub>-neutral hydrogen can be produced in a cost-effective manner and intend to facilitate the storage of electricity.**

In the course of the energy transition, electricity is increasingly being generated from fluctuating sources. Solar and wind energy generation depends on the weather and is subject to significant fluctuations. At times, renewable energy production thus temporarily exceeds regional demand. Hydrogen produced according to the so-called power-to-gas method plays a key role in resolving this challenge and decarbonising the transport sector, i.e. changing over from fossil to renewable energy sources. By converting electricity to gas, solar and wind power become storable. If required, hydrogen can be reconverted or used as environmentally compatible fuel for fuel cell vehicles.

Up until now, high investment costs were a barrier to market entry, especially in the case of smaller electrolyzers. The partners IAV, ZSW, RLI und HT set up the 'ecoPtG' project to change this situation. Using a straightforward concept, simplified production processes and affordable materials, such as plastics, they intend to make the envisaged alkaline 100-kilowatt electrolysis fit for the market. To achieve this aim, the project partners are predominantly using automotive technology, focussing on power electronics, steering and sensor technology as well as production process components for temperature control and media loops. In the automotive industry, many of these components, which also meet electrolysis requirements, are mass-produced cost-effectively using various drive technologies. The 'ecoPtG' project has been designed to investigate ways of transferring these technologies to hydrogen production.

Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW)

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"Hydrogen is a key option in terms of future sustainable mobility and the success of the energy transition. The ZSW has thus been researching, constructing and operating electrolysis plants in megawatt dimensions for many years. In the context of the 'ecoPtG' project, we now aim to make this environmentally compatible technology more cost-effective," says Dr. Michael Specht, head of ZSW's Renewable Fuels and Processes research department.

Based on a resolution of the German Parliament, the Federal Ministry of Economics and Technology is providing a total of EUR 4.75 million in subsidies for the 'ecoPtG' project.

The Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (Centre for Solar Energy and Hydrogen Research Baden-Württemberg, ZSW) is one of the leading institutes for applied research in the areas of photovoltaics, renewable fuels, battery technology, fuel cells and energy system analysis. There are currently around 230 scientists, engineers and technicians employed at ZSW's three locations in Stuttgart, Ulm and Widderstall. In addition, there are 70 research and student assistants.

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