



To the Media

Germany, Ulm, February 10, 2021

Fuel-Cell Manufacturing Research Center to Go Up in Ulm

ZSW holds groundbreaking ceremony for HyFaB research factory

High hopes abound for fuel cells – particularly in the transportation sector – but these energy converters have yet to be mass-produced. The Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) at Ulm aims to change that. It has taken a decisive step toward mass manufacturing with a groundbreaking ceremony held on February 10, 2021, for HyFaB – A Research Fab for Hydrogen and Fuel Cells. The ZSW is going to establish an open industry platform to look into automated production and quality assurance processes, factory acceptance testing and the commissioning of fuel-cell stacks at this facility. This factory will also serve to qualify skilled workers and learn more about industrial applications. HyFaB is open to partners. The automotive industry, fuel-cell vendors, and mechanical and plant engineering companies are very welcome. The only facility of its kind in Germany, it is to be up and running by early 2022.

Fuel-cell electric vehicles (FCEVs) powered by green hydrogen are among the most ecofriendly and climate-sparing means of transportation, particularly for long-haul trips and short refueling stops. Costs will have to come down and production capacities go up for this technology to become a mainstream mass-market proposition.

Fuel cells are still made largely by hand rather on industrial assembly lines. The HyFaB research factory is going to steer and accelerate the transition from small-scale to mass manufacturing. The work in this facility will focus on scalable component production processes that are suitable for assembly lines and on fuel-cell stack manufacturing processes. The Fraunhofer Institute for Solar Energy Systems ISE in Freiburg is on board for the HyFaB project as the ZSW's partner in science.

Political endorsement and public funding

“Hydrogen and fuel cells are among the key technologies of the 21st century. They offer great potential for Baden-Württemberg as a hub of business. Many companies in our state are driving the industrialization of fuel-cell manufacturing with their innovative ideas. We are funding the construction of the HyFaB research factory at the ZSW in Ulm with 10.5 million euros to contribute significantly to the technology's market ramp-up,” says Baden-Württemberg's Minister of Economic Affairs Dr. Nicole Hoffmeister-Kraut.

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

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89081 Ulm, Germany



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“The HyFaB research factory will be a very important milestone on Baden-Württemberg’s path to becoming a leading hub of hydrogen and fuel-cell technology,” says Franz Untersteller, the state’s Minister for the Environment, Climate and Energy. “We are supporting our companies in the international arena and are doing our part for climate action in many sectors by researching and developing these technologies. Hydrogen is sure to become a key factor over the medium term, especially for climate-friendly industrial manufacturing and for climate-neutral mobility. Our state champions and provides funding for this.”

“The ZSW has stood for first-class fuel-cell research for more than 30 years,” adds Gunther Czisch, Mayor of Ulm. “Our city is proud of the ZSW and we are delighted to see a new chapter opening here with the construction of the HyFaB research factory. May everyone involved in the commencing construction project enjoy every success. Here’s to a punctual start in the first quarter of 2022.”

A joint effort with the industry

“HyFaB will provide guidance to help companies get into fuel-cell technology and support their efforts to develop materials, components and manufacturing machinery,” says Prof. Dr. Markus Hölzle, a member of the ZSW’s Board of Directors and head of the Electrochemical Energy Technologies Division in Ulm, summing up the benefits of the projected research factory. “We are already working with leading fuel-cell manufacturers in Germany and are aware of the industry’s urgent needs. The new HyFaB research factory will enable us to pave an even better path to tomorrow’s mass fuel-cell manufacturing.”

The construction of a new 3,600 m² facility at the ZSW in Ulm commenced with this groundbreaking ceremony. The HyFaB buildings are going up on a lot adjacent to the ZSW’s premises at Lise-Meitner-Strasse 24.

Trending towards heavy-duty vehicles

Fuel cells will soon become the same viable option for heavy-duty vehicles that they are today for passenger cars and buses. One reason is that new EU regulations require carbon emissions from heavy-duty vehicles to come down by 15 percent as of 2025 and by 30 percent as of 2030. The EU aims to achieve climate neutrality and carbon-free mobility by 2050.

Vehicles carrying heavy goods on European roads account for around 25 percent of the entire transportation sector’s carbon emissions. The new EU regulation also covers heavy trucks, including 40-ton vehicles,



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nearly all of which are powered by diesel engines. These long-haul trucks travel far and have to refuel fast. Fuel-cell drives enable both long ranges and short stops – and best off all, they do this with zero emissions. Ulm-based truck manufacturer IVECO is planning to manufacture fuel-cell trucks and start rolling them out as of 2023. Drawing on more than 25 years' experience with fuel cells, Daimler unveiled the Mercedes-Benz GenH2 Truck concept in 2020. Future production models are to have ranges of 1,000 kilometers and more.

About ZSW

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 280 scientists, engineers and technicians employed at ZSW's three locations in Stuttgart, Ulm and Widderstall. In addition, there are 100 research and student assistants.

Media Contacts:

Tiziana Bosa, Zentrum für Sonnenenergie- und
Wasserstoff-Forschung Baden-Württemberg (ZSW),
Helmholtzstraße 8, 89081 Ulm, Telefon +49 731 9530 601,
tiziana.bosa@zsw-bw.de, www.zsw-bw.de

Axel Vartmann, PR-Agentur Solar Consulting GmbH,
Emmy-Noether-Str. 2, 79110 Freiburg,
Tel.: +49 761 380968-23, vartmann@solar-consulting.de,
www.solar-consulting.de



The ZSW is building HyFaB – A Research Fab for Hydrogen and Fuel Cells to develop manufacturing technologies. It will also house Europe's largest non-industrial testing field for fuel-cell stacks. Rendering: ZSW / ZG Architekten



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Logo HyFaB

Pictures

Pictures of the groundbreaking ceremony will be available for downloading as of 5 p.m. on February 10, 2021 at <https://www.zsw-bw.de/nc/presse/presseinformationen.html>

Images are also available from Solar Consulting or at <https://energie.themendesk.net/zsw/>.

See webcam images of the construction site at www.zsw-bw.de/ueberuns/standorte.html#c583 (click the "Ulm with eLaB" at the bottom of the page).