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Press Release

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Fraunhofer ISE and National Renewable Energy Laboratory NREL collaborate on Hydrogen and Fuel Cell Research

The two largest research organizations for renewable energy research in the world, the Fraunhofer Institute for Solar Energy Systems ISE in Germany and the U.S. Department of Energy's National Renewable Energy Laboratory NREL have signed a Memorandum of Understanding (MOU) for close collaboration on hydrogen and fuel cell technologies research. The official launch took place on Monday, October 10th at the "f-cell / World of Energy Solutions" conference in Stuttgart.

Under this MOU, hydrogen and fuel cell technology experts from Germany and the United States will collaborate closely on research and development (R&D) activities to accelerate progress in these fields. Fraunhofer ISE considers hydrogen and fuel cell technology an integral component of the German "Energiewende", the transformation of the energy system towards renewable energies resulting in a reduction of CO_2 emissions by 80 to 95% of 1990 levels by 2050. Using electricity from renewable energy sources such as wind and solar, hydrogen can be produced by water electrolysis and used as fuel in diverse applications including fuel cell cars and buses causing no harmful emissions. Furthermore hydrogen is an excellent feedstock for the catalytic conversion with CO_2 to produce liquid synthetic fuels and replace diesel or gasoline (Power to Liquid).

Fraunhofer ISE's work in hydrogen technologies comprises fundamental research on the production, conversion and catalytic processing of hydrogen as well as models to investigate the role of hydrogen in the future energy system. NREL's long-term research and development activities supported by DOE's Fuel Cell Technologies Office in the Office of Energy Efficiency and Renewable Energy include

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research on advanced electrolysis, hydrogen fueling infrastructure, and analysis of grid-scale hydrogen system performance.

The objectives of this collaboration are to accelerate progress toward shared R&D goals and ensure sustainable use of hydrogen and fuel cell technologies. This collaboration will make use of complementary research and capabilities at NREL and Fraunhofer ISE in the following areas:

- Electrolysis, including cell, stack, and system R&D and characterization
- Hydrogen infrastructure research and development
- Analysis and modeling for grid-scale implementation of hydrogen systems
- Field validation, performance data collection and evaluation of hydrogen systems
- Accelerated stack and system evaluation, testing, and deployment

Learn more about NREL's hydrogen and fuel cell research and R&D at Fraunhofer ISE.

Text of the PR and photos can be downloaded from our webpage: www.ise.fraunhofer.de

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From left to right (standing): Bryan Pivovar, NREL; Sunita Satyapal, U.S. Department of Energy; Helge Pols, Federal Ministry of Transport and Digital Infrastructure BMVi; Klaus Bonhoff, NOW Nationale Organisation Wasserstoff. From left to right (sitting): Keith Wipke, NREL, Christopher Hebling, Fraunhofer ISE. ©NREL

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