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Fraunhofer ISE, Fraunhofer EMI and VDE Establish a New Competence Center for Batteries and Storage Systems

Market-oriented R&D as well as testing and certification of batteries and energy storage systems support the global energy transformation and further the expansion of electric mobility. Over 30 million euros shall be invested in the new competence center located in Freiburg, Germany.

The Fraunhofer Institute for Solar Energy Systems ISE, the Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institute, EMI and the Association of German Electrical Engineers VDE are establishing a new competence center for batteries and energy storage systems in Freiburg. The three partners are reacting to the rising demand for safe and commercially viable batteries and energy storage systems, pinpointing them as key technologies for the future of electric mobility and the increasing use of renewable energies.

The portfolio of the new center consists of applied, market-oriented R&D in battery cells and systems, the development of new testing standards, carrying out safety and performance tests as well as the certification of components and complete battery systems and also energy storage plants in the field. The bankability and insurability are especially addressed. The focus lies on stationary storage systems, electric mobility as well as mobile applications.

Market-oriented Development of Battery and Storage Systems

Fraunhofer ISE has many years of experience in the research, development and testing of battery storage. Their expertise ranges from the battery cells and modules through to battery systems, including their integration in the total facility. Safety tests, including destructive tests and crash tests of complete vehicle batteries, are particularly relevant for the mobility sector. Fraunhofer EMI holds long-term experience in this field and has a variety of excellent testing facilities at its disposal. With their competence in standardization and certification, the VDE

experts provide services that extend even beyond the established safety standards, for example, the certification of power, lifetime, reliability and data security for battery and storage systems.

In addition to Freiburg, the Global Energy Storage Competence Cluster includes laboratories in Asia (Singapore) and the USA. The laboratory in Singapore has already started operations, while the laboratory in the USA will open in early 2019. The VDE will accredit all three laboratories under the newly created VDE Prime Lab standard. The prerequisite for achieving Prime Lab status is the fulfillment of the globally recognized VDE accreditation conditions. In addition, the labs have to meet special requirements to provide testing services for banks and insurance companies, as well as strict data security criteria.

Baden-Württemberg Becomes Center for Battery Testing

The establishment of the competence center for batteries and energy storage in Freiburg, located in the State of Baden-Württemberg, complements the state government's numerous other activities in battery technology and electric mobility. Through the center, the VDE in Freiburg and Fraunhofer ISE especially support industry by providing quality assurance and assistance in building up new production capacities. This is of great importance for the automobile industry as they expand into the area of electric mobility. Faster from the lab to fab: Through tests accompanying product development and certifications, the companies can shorten the development phase and thus ensure the competitiveness of their product on a dynamic global market. Over the next three years, more than 30 million euros shall be invested in the competence center. The planned start of operation is the first quarter of 2019.

»I am greatly pleased to get this pioneering project moving together with our long-term partner VDE and our partner institute Fraunhofer EMI. Based on the successes at Fraunhofer ISE on batteries and energy storage systems with high energy density and long lifetimes, numerous new applications are made possible. The expertise of Fraunhofer EMI in the area of safety technology optimally complements this portfolio. The costs for battery components and also the complete energy storage system have decreased dramatically. We must continue to work intensively on this aspect and also on new standards and test procedures in order to ensure the highest possible safety and trust in this fast growing global market,« says Prof. Hans-Martin Henning, Director of the Fraunhofer Institute for Solar Energy Systems ISE.

Ansgar Hinz, CEO of VDE, adds: »Batteries, energy storage and renewable energy belong to the core areas of expertise at VDE. For years, our VDE Renewables Group has reacted to the strong dynamic and fast development of new products in the energy sector. Due to the

stronger system-based approach evident today in renewable energy and energy storage, a close connection between battery testing, power electronics and software systems is becoming ever more important. In addition, new challenges regarding the IT security of the systems are looming. The VDE has implemented this approach with Fraunhofer ISE already in other areas of renewable energy and we will continue to carry this out in the field of energy storage together with this global initiative. «

About Fraunhofer ISE

With a staff of 1200, the Fraunhofer Institute for Solar Energy Systems ISE in Freiburg, Germany is the largest solar energy research institute in Europe. Fraunhofer ISE is committed to promoting sustainable, economic, safe and socially just energy supply systems based on renewable energies. Its research provides the technological foundations for supplying energy efficiently and on an environmentally sound basis in industrialized, threshold and developing countries throughout the world. Focusing on energy efficiency, energy conversion, energy distribution and energy storage, the Institute develops materials, components, systems and processes in five business areas. One particular feature of Fraunhofer ISE is its excellent technical infrastructure, which is organized into eight laboratory centers and four technology evaluation centers providing testing and experimental services on a production scale. In addition, the Institute has several accredited testing facilities. The Institute is a member of the Fraunhofer-Gesellschaft, Europe's largest application-oriented research organization. For more information, visit us at www.ise.fraunhofer.de

About VDE

With 36,000 members (of which 1300 are corporations) and 1600 employees, the association for electrical engineers, electronics and information technologies VDE is one of the largest technical and scientific organizations in Europe. The VDE combines science, standardization and product testing under one roof. The main topics of the association range from the energy transformation, Industry 4.0, Smart Traffic and Smart Living up to IT security. The VDE is especially committed to research and the promotion of young people in these fields as well as consumer protection. The VDE mark, which is familiar to 67 percent of all Germans, is regarded as a symbol of the world's highest safety standards. The VDE is headquartered in Frankfurt am Main. <https://www.vde.com/en/>

About Fraunhofer EMI

The Fraunhofer Institute for High-Speed Dynamics, Ernst-Mach-Institute, EMI studies high-speed processes in experiment and simulation. The institute uses its long-term expertise in highly dynamic processes in order to make batteries for electric vehicles safer, with one focus being the investigation of battery behavior under crash situations. Fraunhofer EMI offers solutions for industrial applications concentrating on security, resilience, reliability, efficiency and sustainability of structures, components and systems under dynamic and extraordinary loads. www.emi.fraunhofer.de

Press Contact:

Melanie Unsel

Spokeswoman

E-Mail: melanie.unseld@vde.com

Phone: +49 69 6308-461