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PRESS RELEASE

VDE Renewables, Fraunhofer ISE, ERI@N launch global initiative for energy storage at the Asia Clean Energy Summit in Singapore

The VDE Global Energy Storage Competence Cluster will serve the international cleantech sector along the entire value chain and features VDE Prime Labs in Singapore, Germany and the USA

VDE Renewables, together with the Fraunhofer Institute for Solar Energy Systems ISE and the Nanyang Technological University Singapore's (NTU Singapore) Energy Research Institute (ERI@N), launched the Global Energy Storage Competence Cluster (GECC) today, at the annual Asia Clean Energy Summit in Singapore. This global initiative for energy storage will serve the international cleantech sector along the entire value chain and features VDE Prime Labs in Singapore, Germany and the USA. The VDE Prime Lab in Singapore will also be the first in the world to offer bankability and insurability certification for energy storage solutions at the systems level, which will plug a critical gap in the global energy landscape.

The demand for batteries worldwide is projected to grow exponentially with applications not only in the portable electronics sector, but also in e-mobility and stationary storage in conjunction with renewable energies and power grid support. While lead-acid based batteries will continue to be utilized in traditional applications, Lithium-ion-based battery technology will become the dominant solution for mobile as well as stationary energy storage applications. The growth of the energy storage industry and markets points to the increasing demand for testing – not only to support national and international certification requirements, but also to support industry development and innovation efforts and to increase safety.
The GECC will have a global mandate, incorporating testing and research capabilities in Germany, Singapore and the US. The GECC will offer VDE's world-class testing and certification product portfolio for energy storage products and systems internationally and also address local needs.
"To enable the safe and sustainable growth of energy storage, we will leverage on our established experience and expertise in bankability certification, which goes beyond established safety standards to additionally cover performance and reliability. These bankability services also meet the needs of financiers and insurers, which are key stakeholders in storage projects," announced Ansgar Hinz, CEO of the VDE Association.

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The VDE Prime Lab in Singapore shall offer VDE's testing & certification portfolio, as well as conduct testing according to local and regional standards. It will also be the first in the world to offer bankability and insurability certification for energy storage solutions at the systems level, which will plug a critical gap in the global energy landscape. Furthermore, the Singapore Prime Lab shall forge new relationships with local players to carry out joint research projects and develop testing activities together with the GECC; therefore also strengthening linkages for knowledge exchanges between Singapore, Germany and the USA.

"Advanced energy storage technologies are, in many applications, still a nascent stage. Research and development (R&D) still has a large role to play – not only in product development, but also in developing testing programs for these products and the creation of appropriate standards to ensure that high quality products are being brought to market. Such tests are complex and require deep knowledge of the technology to be tested. We are therefore very excited to combine our applied R&D expertise with the testing and certification experience of VDE Renewables for storage, which adds to our long-standing partnership in Singapore. This partnership enables the GECC to serve the entire storage value chain, from R&D to commercialization," said Dr. Matthias Vetter, Head of Department, Electrical Energy Storage at Fraunhofer ISE.

Professor Lam Khin Yong, NTU's Acting Provost, Chief of Staff and Vice President for Research, said, "A global research powerhouse in sustainability, NTU is proud to be partnering with VDE Renewables and Fraunhofer ISE, prominent industry and research leaders in energy generation and storage solutions. Leading NTU's efforts in this initiative is ERI@N with its expertise and networks in the Global Energy Storage Competence Cluster (GECC) will help ensure that industry requirements in the Asian region are met. More importantly, Asia would be able to benefit from the latest developments in energy storage from other parts of the world, thanks to the close network of the GECC."

The GECC launch ceremony was held during the opening of the Asia Clean Energy Summit in the presence of Senior Minister of State, Ministry of Trade and Industry, Dr. Koh Poh Koon, Lim Kok Kiang, Assistant Managing Director of the Singapore Economic Development Board, Prof. Lam Khin Yong from NTU, Ansgar Hinz, from the VDE Association, and Dario Danelutti, Managing Director of Allianz Climate Solutions. "We are glad that VDE Renewables has chosen Singapore as its regional base to serve Asia, a key growth market for energy storage. The launch of the VDE Energy Storage Prime Lab in Singapore, in collaboration with esteemed partners Fraunhofer ISE and ERI@N, will increase the vibrancy of Singapore's clean energy ecosystem. The bankability certification for energy storage systems will also be a highly differentiated offering which will strengthen Singapore's value proposition in energy management and microgrids," concluded Lim Kok Kiang, Assistant Managing Director at the Singapore Economic Development Board.

Caption: The GECC launch ceremony during the opening of the Asia Clean Energy Summit in Singapore with witnesses (W) and signatories (S) (left to right): Burkhard Holder, Managing Director, VDE Renewables (S), Dr. Matthias Vetter, Head of Department, Electrical Energy Storage, Fraunhofer ISE (S), Ansgar Hinz, CEO, VDE Association (W), Dr. Koh Poh Koon, Senior Minister of State, Ministry of Trade and Industry (W), Prof. Lam Khin Yong, Chief of Staff and Vice President (Research), President's Office, Nanyang Technological University (W), Dario Danelutti, Managing Director, Allianz Climate Solutions (W), Prof. Choo Fook Hoong, Co-Director, Energy Research Institute at Nanyang Technological University (ERIAN) (S), Lim Kok Kiang, Assistant Managing Director, Singapore Economic Development Board (W). ©VDE

About VDE Renewables and the ESS Prime Lab Singapore

VDE Renewables is 100% owned by VDE, the Association for Electrical, Electronic and Information Technologies. It conducts the marketing, business development, and project management activities for certification and non-certification activities in the area of quality assurance for the global renewable energy sector. VDE Renewables works closely with leading institutions around the world, such as the VDE Testing and Certification Institute and Fraunhofer ISE, to carry out testing of components and systems according to the highest levels of quality. www.vde.com/renewables.

Product and services portfolio of VDE ESS Prime Lab Singapore:

- ESS performance and safety testing according to international standards
- Tailored safety testing beyond standard requirements
- Battery cell research and development

- Battery systems design prototyping
- Tailored services for financial institutions: bankability, investability, and insurability certification
- Energy storage and battery technology consulting

About Fraunhofer ISE

With a staff of 1150, 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 and offers accredited testing facilities and other expert lab services to clients. 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 Nanyang Technological University, Singapore

A research-intensive public university, Nanyang Technological University, Singapore (NTU Singapore) has 33,500 undergraduate and postgraduate students in the colleges of Engineering, Business, Science, Humanities, Arts, & Social Sciences, and its Interdisciplinary Graduate School. It also has a medical school, the Lee Kong Chian School of Medicine, set up jointly with Imperial College London. NTU is also home to world-class autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre for Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI), Energy Research Institute @ NTU (ERI@N) and the Institute on Asian Consumer Insight (ACI). Ranked 11th in the world, NTU has also been ranked the world's top young university for the last four years running. The University's main campus has been named one of the Top 15 Most Beautiful in the World. NTU also has a campus in Novena, Singapore's medical district. For more information, visit www.ntu.edu.sg