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PRESS RELEASE

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KET

AEG Power Solutions Equips the Microgrid Laboratory Emulator of Paderborn University

- Microgrid emulation environment enables load profile optimization and emulation of up to 16 prosumers. Each power node converts up to 250 kVA emulating arbitrary decentralized power units such as battery storage systems, wind power generators or industry loads
- AEG PS engineered the solution and customized UPS systems so they can act as flexible power converters in real time emulation
- Research project is funded and supported by the European Regional Development Fund within the framework of the Northrhine-Westphalian initiative 'Forschungsinfrastrukturen'

The Netherlands, 13. January 2021 – **AEG Power Solutions,** a global provider of power supply systems and solutions for industrial, critical infrastructure and innovative power electronic applications **announced its selection to deliver the power electronics for the power research emulation environment of the new microgrid laboratory of the University of Paderborn**.

Microgrids are local networks consisting of energy sources, storage facilities and consumers in various sectors. Their advantages: the energy consumption share of renewable energy can be increased and the peak power required at the grid connection point can be reduced. They represent an important solution component to ensure a secure, clean, efficient and cost-effective energy supply in the future.

The Competence Center for Sustainable Energy Technology (KET) at Paderborn University, under the leadership of the Department of Power Electronics and Electrical Drive Technology (LEA), is developing the infrastructure with which the behavior of power system such as battery storage systems, wind turbines, photovoltaic systems or combined heat and power plants can be emulated in the laboratory.
In combination with control and component modelling, the microgrid laboratory offers a highly flexible and modular development and validation platform on which a wide range of questions on local grids can be investigated and solutions developed.
The microgrid emulator will provide a test environment to emulate up to 16 energy system components. These can act as power source or consumer and will be programmed individually as

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rectifier or inverter via a rapid control prototyping system (RCP). The whole system can emulate a total power of 2 MVA. External loads can also be integrated in the setup to study their behavior under certain grid conditions.

Paderborn University and AEG PS worked closely together – trusting AEGPS' expertise to engineer and customize the systems for the emulator project. The reliability of the systems is key for the project to achieve accurate simulation results. The solution delivered comprises 8 customized UPS systems based on the reliability proven Protect UPS series. The added rapid control prototyping systems will let each UPS system behave as inverter and/or rectifier to emulate up to 16 different components. Further AEGPS' flexible Convert SC Flex - usually used as storage converter with on- and off-grid capabilities – will connect the emulation environment to the public power grid.

The systems have been delivered in December 2020 while commissioning of the emulation environment is planned in Q1 2021. The project is financed by 50% from the European regional fond, by 40% from Northrhine-Westphalia and by 10% from Paderborn University.

Further information on the microgrid laboratory at Paderborn University is available here:
https://go.uni-paderborn.de/microgrid-lab

About AEG Power Solutions

AEG Power Solutions ensures continuous power availability and the safe operation of critical applications thanks to with a wide portfolio of power supply systems and services: AC and DC UPS, battery chargers, rectifier systems, service and maintenance on 24/7 basis, as well as fully customized UPS systems to customer specifications.
AEG Power Solutions has developed a distinctive expertise and world-class engineering capacities that bridge both AC and DC power technologies and span conventional and renewable energy platforms. AEG Power Solutions has decades of experience with UPS and power electronics, and grid integration, and is leveraging its conversion expertise to engineer and deliver solutions for energy storage applications.

AEG Power Solutions is the sole subsidiary of the holding company 3W Power.
For more information, visit www.aegps.com.

About the Competence Center for Sustainable Energy Technology (KET) at Paderborn University

The Center for Sustainable Energy Technology (KET) was founded by Paderborn University in January 2012. The main tasks of KET include research, teaching and transfer of technology in the area of environmentally friendly and innovative energy generation, transformation and utilization. The background and expertise of the four cooperating research groups belonging to the mechanical and electrical engineering departments allow the development of interdisciplinary solutions for energy-related challenges from a single source.
Acting as an interface between industry and academic research, KET addresses institutional and industrial users and offers wide and comprehensive opportunities for cooperation by consulting, development, simulation and application in the area of modern energy technology.

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