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netz.con 2022 in Essen: VDE FNN drives the transformation of power grid to a climate protection grid forward

- **300 decision-makers and experts from the energy sector will discuss how to make the power grid fit for the energy transition**
- **Millions of weather-dependent power plants, plus heat pumps, wallboxes for EV and energy storage systems, must be integrated into the grid**
- **Energy, mobility and heat transitions – the power grid must be prepared**

(Essen, October 12, 2022) The Forum Grid Technology/Grid Operation in VDE (VDE FNN) is accelerating the conversion and expansion of the power grid in preparation for the energy transition. At today's press conference at netz.con 2022 in Essen, VDE FNN gave an overview of the solutions which are already being implemented and where the need for action is currently greatest. "By 2030, 80 percent of Germany's electricity demand must be met from renewable energy sources. The pressure to achieve this goal has been increased further by the current energy crisis. Our power grid needs to accommodate millions of weather-dependent power plants while also handling concurrent operations from large numbers of heat pumps, electric cars and energy storage systems. In order to achieve this, our energy system needs to be rebuilt and expanded," explains Dr. Joachim Kabs, Board Chairman at VDE FNN. The system transformation must be carried out with no disruption to the country's safe, reliable electricity supply. For this purpose, renewable generation plants must take on their role as supporting pillars of the system, and flexibility must be increased in order to integrate loads efficiently.

Structural expansion

The power grid will form the foundation for the energy, mobility and heat transitions, but the requirements will change considerably. These issues will be discussed by experts from grid operators, energy suppliers, manufacturers and academia at netz.con on October 12–13. One of the challenges is that electricity from renewable energy sources is often generated at locations far away from industrial plants and other large consumption centers. "Direct current

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transmission lines will play a greater role in transporting electricity over long distances. However, the distribution grids which bring electricity to consumers are also essential for the energy transition, and the burden on them will increase considerably. Bear in mind, for example, that in the future more and more households will be feeding energy into the grid. The structures need to be updated to handle that," says Dr. Dirk Biermann, Vice-Chairman at VDE FNN.

Leveraging digitalization

The key here will be using digitalization to expand observability and controllability in the distribution grid and to implement mass processes. VDE FNN therefore welcomes the revision of Paragraph 14a of the German Energy Industry Act (EnWG) for the control of consumption equipment such as wallboxes for EV and heat pumps, as well as the measures to accelerate the rollout of the intelligent metering systems. "Our multi-phase traffic-light concept describes exactly what this control system could look like in practice and provides a reliable framework for action. In the yellow phase, grid operators should work together with other market participants in taking measures to prevent an impending power grid crisis. Grid operators should only take control and intervene to ensure system stability in the case of red phases," says Dr. Kabs.

Connecting renewable energy plants to the grid poses another major challenge. The market and the variety of products on offer are increasing, requiring grids and their equipment to be compatible and manufacturer-independent. "Without standardized technical connection rules based on practicability and performance, it will not work. The adaptation of regulatory frameworks, market design and technical regulation must all go hand in hand. Everything has to fit together," says Dr. Biermann.

About VDE FNN

The Network Technology and Operation Forum within VDE (VDE FNN) develops the electricity grids with foresight. The aim is to ensure reliable system operation at all times with 80 percent renewable energies. VDE FNN makes innovative technologies practicable and provides answers to the grid technology challenges of tomorrow. Here, various specialist groups with different interests work together on solutions. Its members are over 470 manufacturers, grid operators, suppliers, system operators, authorities, and scientific institutions.
For more information, visit www.vde.com/fnn

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The VDE (VDE Association for Electrical, Electronic & Information Technologies) is headquartered in Frankfurt am Main. For more information, visit www.vde.com

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