

Bringing more hydropower onto the grid: Connection of small plants in medium voltage to be simplified

- **With the amendment to the TAR Mittelspannung, VDE FNN reduces the certification effort in the individual verification procedure, especially for operators of smaller hydropower plants.**
- **The preliminary version is available in the VDE Shop, the final version after EU notification is expected to follow in April 2023.**

(Berlin/Frankfurt am Main, 26.01.2023) Currently, the generation capacity of hydropower plants is around 5,000 megawatts. In order to bring more hydropower into the grid, VDE FNN has simplified the individual verification procedure with the revised [“Technische Anschlussregeln \(TAR\) Mittelspannung”](#) (amendment 2023, VDE-AR-N 4110). In order for all generation plants to contribute to system stability, they must demonstrate the relevant characteristics before being connected to the grid. For smaller generation plants with a capacity of between 135 and 950 kilowatts that operate with individually designed generation units such as generators or turbines – especially hydropower plants – this previously required extensive simulations and models. With the new simplified procedure, this is no longer necessary. This reduces the cost of certification. In addition, the verification process has been simplified. Existing hydropower plants can continue to supply into the grid after conversion or renewal with a manageable outlay.

Further adjustments to the connection rules by 2025

The experts at VDE FNN are planning extensive revisions to the “Technische Anschlussregeln” for all voltage levels by 2025. In the future, the converters of generation plants will have to make important contributions to system stability, as these will no longer be provided by the large conventional power plants with 100 percent renewables. In addition, multiple grid connections in a building or metering equipment for the operation of energy management systems are to be included in the low voltage, as are rules for the installation of modern metering equipment in customer systems. The requirements for grid connection and operation of e-mobility

(bidirectional charging), emergency generators and battery storage systems will also be updated. Further simplifications and improvements to the verification process are to be made. The system characteristics of generation plants and their verification are particularly important so that renewable plants can replace large-scale power plants.

Process under time pressure

The need to update technical connection rules is reviewed every five years at the latest. If technological or political developments make it necessary to revise them at shorter notice, a VDE FNN project group prepares a draft and publishes it. Any person may submit proposals for amendments within two months. Suggestions for changes received are reviewed by the project group and taken into account as far as possible. This benefits the quality of the rules, but also takes time.

The content of the 2023 amendment to the “TAR Mittelspannung” has already been finalized and is now available as a pre-publication in the [VDE Shop](#). This provides users with advance preparation for implementation. The preliminary version is currently being notified to the European Commission and is then expected to enter into force unchanged – this is planned for April 2023.

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

About VDE

VDE, one of the largest technology organizations in Europe, has been regarded as a synonym for innovation and technological progress for more than 130 years. VDE is the only organization in the world that combines science, standardization, testing, certification, and application consulting under one umbrella. The VDE mark has been synonymous with the highest safety standards and consumer protection for more than 100 years.

Our passion is the advancement of technology, the next generation of engineers and technologists, and lifelong learning and career development “on the job”. Within the VDE

network more than 2,000 employees at over 60 locations worldwide, more than 100,000 honorary experts, and around 1,500 companies are dedicated to ensuring a future worth living: networked, digital, electrical. Shaping the e-dialistic future.

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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