

Record high for renewable energy: Germany's electricity supply will remain very stable in 2023

- **In 2023, the average power interruption time per customer was 13.7 minutes**
- **Power supply in Germany remains one of the most reliable in the world**
- **Feed-in from renewable energies higher than ever before - successful intervention by grid operators to ensure grid stability**

(15.10.2024, Berlin/Frankfurt a. M.) The new fault and availability statistics from the VDE Network Technology/Network Operation Forum (VDE FNN) confirm that the power supply in Germany will remain one of the most stable in the world in 2023. Every consumer was supplied with electricity around 99.997% of the time, which corresponds to an average interruption duration of 13.7 minutes per year. The statistics are based on comprehensive data from the grid operators. In 2022, the interruption duration was 11.8 minutes and only around two minutes less than the value for 2023.

Force majeure, construction activities and planned shutdowns

One reason for disruptions is the generally high level of construction activity since 2020, both in road construction and in broadband expansion, which repeatedly leads to damage to power cables. The number of interruptions per customer was 0.34 in 2023 (2022: 0.25), which means that each customer is only affected by a disruption once every three years on average. This does not include interruptions due to force majeure and planned shutdowns.

Force majeure led to interruptions of 4.3 minutes in 2023. These included, for example, the local effects of hurricanes Ronson, Denis and Zoltan or the Robin snowstorm. Planned shutdowns accounted for around five minutes at a consistently low level.

Share of renewable energies increases, grid operators ensure stability

Renewable energies accounted for 55% of the total feed-in in 2023 (2022: 48.42%). Due to the conversion of the energy system to renewable energies, grid utilization is increasing and grid operation is becoming more demanding. As a result, grid-related measures are becoming increasingly necessary in order to maintain secure grid and system operation. These include, for example, switching operations and market-related measures such as the use of balancing energy to compensate for power fluctuations or the use of power plants. The expenses for this have been increasing for several years. According to figures from the Federal Network Agency, a total of around 34,000 gigawatt hours of electricity from generation plants could not be fed into the grid as planned in 2023. This means that over 96 percent of renewable generation was fed into the system.

VDE FNN fault and availability statistics: High added value for network operators

The VDE FNN statistics, which are published annually, are based on voluntary information from grid operators on disruptions and availability of electricity, with the data representing around 75 percent of the German electricity grid and covering all voltage levels. Grid operators use the statistics to classify their own disruption levels and compare them with other grid operators. Thanks to the high level of detail in the statistics, anomalies in systems or system components can also be detected. This makes it possible to monitor the quality of technical equipment, as conclusions can be drawn, for example, as to whether one type of cable is damaged more often than another.

For 2023, the calculation method was adapted to that of the Federal Network Agency, resulting in a slight increase in the figures. For example, according to the old method, the interruption duration in 2022 was 10.6 minutes, now it is 11.8 minutes.

A short version of the statistics with the most important key figures is now available free of charge on the [VDE FNN website](#) (German version). The detailed version for 2023 can be purchased from [VDE Verlag](#) from the end of November.

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 100 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 480 manufacturers, grid operators, suppliers, system operators, authorities, and scientific institutions.

For more information, visit <https://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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