



Transformation of the Power Generation and Distribution Industry.

Services that respond to the demands of a changing power generation landscape, transitioning to sustainability for a safe and successful power supply.

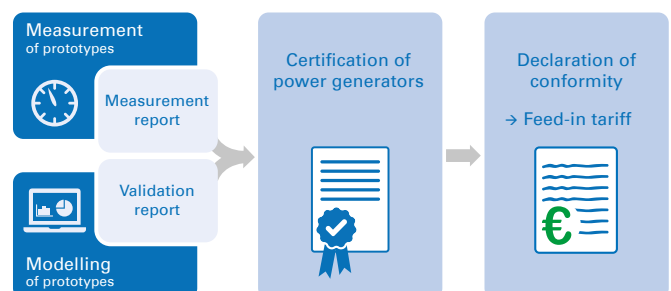
POWER GRID SERVICES

With the global shift toward renewable energy, the power generation and distribution industry are undergoing a transformation accompanied by new technologies and a regulatory framework designed to ensure the stability and safety of the power supply. Carried out by a team of experts, our power grid services address:

- Power grid integration (ISO 17065)
 - Certificates for power generating units and systems
 - Declaration of conformity for feed-in tariffs
- Power system and machine studies
 - Low voltage networks
 - Transport and distribution grids
 - Analysis of electrical machines
- Failure analysis
 - Component failures
 - Failures in distribution systems
 - Black Outs / Brown Outs
 - Measures for preventive protection of operating supplies

POWER GRID INTEGRATION

We certify both power generating units and systems (PGU and PGS). Commissioned by the manufacturer, PGU certificates are required by law and indicate the electrical properties of the unit. A PGS certificate is required for grid integration by the system operator. It is specific to each system and validates the conformity of grid planning. For power generators, our experts measure and model prototypes and compile the reports necessary for a power generator certificate and a declaration of conformity to be issued.



The increasing number of small power plants and the transition to a bi-directional system present a special challenge to grid stability, so that developers of PGU and PGS are required to comply with national and international rules aimed at ensuring the reliability of the power supply. We are accredited to ISO 17065 and can certify grid integration of PGU (EZE) and PGS (EZA) in low, middle and high voltage networks in a range of countries.

POWER SYSTEM AND MACHINE STUDIES

Low voltage networks

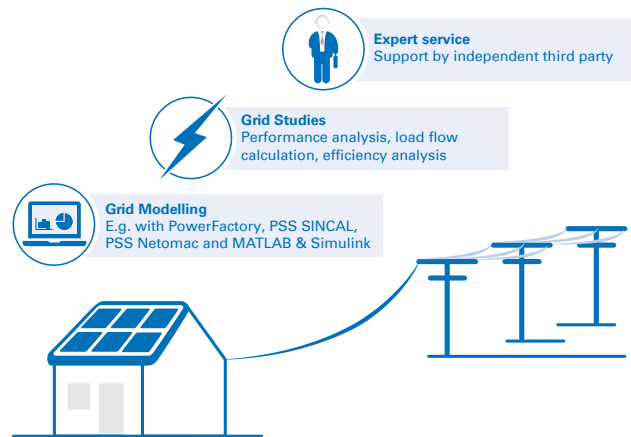
Security of supply is a crucial factor when it comes to low voltage networks as providers are often overwhelmed by the growing complexity of their systems. Our team thoroughly inspects our clients' low voltage systems together with relevant documentation and carries out grid modelling to reach a thorough understanding of network behavior even in the event of a failure, helping operators to avoid unnecessary losses. In addition, we perform short-circuit and selectivity calculations according to applicable standards and prepare a report and protection concept to optimize network performance.



Transport and distribution systems

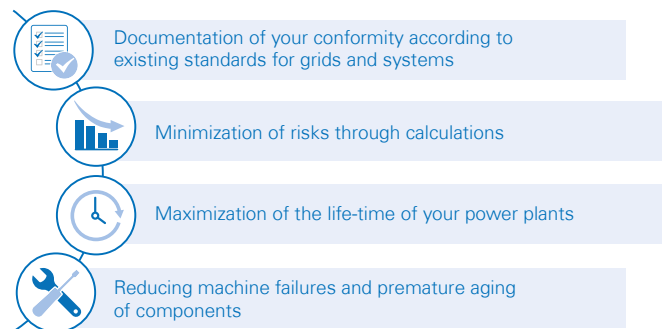
Renewable energy sources are by nature prone to fluctuation as wind and sunshine vary in strength and availability. Our [power grid services](#) help integrate renewable energy plants as well as conventional ones into the grid by providing necessary calculations and simulations. The goal is to ensure both sustainability and security throughout the energy distribution system with cutting-edge modelling software, grid studies and

comprehensive consulting in all areas related to power generation and electrical grids.



Analysis of electrical machines

Our specialists carry out a range of electrical and mechanical analyses based on modelling techniques to examine the functionality of electrical components. The benefits to you include documentation of compliance with relevant standards, minimization of risks, maximization of power plant lifetime and a reduction in failures and premature aging of components.



IF YOU WANT TO LEARN MORE ABOUT OUR POWER GRID SERVICES, PLEASE CONTACT US AT WWW.TUV.COM/POWER-GRID!

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