

Renewable energy connection point justification to eliminate bottlenecks in power grid.

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In present Russia, there is an established practice of searching for and eliminating bottlenecks in the power system, characterized by exceeding the limitations on parameters of the electrical regime (voltages, currents, active power, etc.). This results in the need to use power supply interruption to avoid damage in grid infrastructure. Although, in the established practice, automation tools and measures to strengthen the existing network are successfully used to deliver the electrical regime within the limitations, the authors propose an approach to eliminating bottlenecks, which is based on the wind farm's optimal connection to complement the existing practice.

In the article, the authors analyze the data of the Scheme and program for the development of the Unified Energy System of Russia for 2024–2029. Based on this analysis the authors concluded that it seems rational to conduct an additional analysis of grid bottlenecks at the early stage of wind farm design to optimize the costs of developing the electrical network, including both the investor's costs and the costs of eliminating the bottleneck.

Key words: power output scheme, renewable energy, grid bottlenecks, discounted spends.