

What are grid-enhancing technologies?

Grid-enhancing technologies (GETs) maximize the electricity transmission across the existing system through a family of technologies that includes sensors, power flow control devices, and analytical tools. These technologies will help us continue adding clean, renewable energy like solar and wind to decarbonize the grid.

Do grid-enhancing technologies reduce the need for grid expansion?

The proliferation of such technologies enhances transfer capability over the current transmission network, thus reducing the need for grid expansion. This paper offers a comprehensive review of grid-enhancing technologies.

Could grid-enhancing technologies help reduce congestion?

The U.S. electric grid is experiencing significant congestion issues. The implementation of grid-enhancing technologies would help alleviate that. How can the U.S. squeeze the most energy out of its electric grid? That's one of the challenges transmission operators face today.

What are the environmental impacts of grid-enhancing technologies?

The paper offers a comprehensive review of an extensive range of grid-enhancing technologies, including both principles of operation and state-of-the-art developments. Environmental impacts of grid-enhancing technologies, including renewable energy curtailment and carbon emission reduction, are also discussed.

Could a grid-enhancing technology help ease a backlog of power?

This congestion increased consumers' bills by an estimated \$20.8 billion in 2022. Grid-enhancing technologies (GETs) are a promising near-term solution to this problem, and one that could help ease a backlog of an estimated 2,600 gigawatts of power--95% of which is from solar, wind, or battery projects--that is ready to flow to consumers.

The Innovative Grid Deployment Liftoff report is focused on identifying pathways to accelerate deployment of key commercially available but underutilized advanced grid solutions on the existing transmission and distribution system to address near-term hotspots and modernize the grid to prepare for a wide range of energy futures.

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This paper offers a comprehensive review of grid-enhancing technologies, incorporating insights from worldwide academic papers and various existing industrial projects that address current challenges and enhance the functionality, reliability, and sustainability of transmission grids.

Building a Better Grid: How Grid-Enhancing Technologies Complement Transmission Buildouts. Prepared for the WATT Coalition. Share. The U.S. energy industry is going through a massive transition, partially driven by decarbonization initiatives that significantly increase renewable generation resources. The preferred locations for many of these ...

Double the amount of renewables that can be integrated into the electricity grid prior to building new large-scale transmission lines; 90 million avoided tons of carbon emissions per year, equivalent to taking 20 million cars off the road; \$5 billion in yearly energy production cost savings, with upfront investment paid back in just 6 months

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Grid-Enhancing technologies (GETs) increase the capacity and flexibility of the electric transmission system. The combined value of dynamic line ratings (DLRs), advanced power flow control, and topology optimization makes the round hole of the transmission system square enough to handle twice as much renewable energy development as it can ...

Goal: Analyze how much additional renewables can be added to the grid using Grid- Enhancing Technologies (GETs): Use the Southwest Power Pool (SPP) grid (focused on Kansas and Oklahoma, looking at 2025) as an illustrative case study. - SPP Generation Interconnection Queue * (GI Queue) shows ~9 GW

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Grid-enhancing technologies (GETs) encompass a broad range of hardware and software tools that enable reconfiguration of the transmission grid and adjustment of its parameters. The proliferation of such technologies enhances transfer capability over the current transmission network, thus reducing the need for grid expansion.

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