



Grid Enhancing Technology Solutions for Policymakers

SAFE, RELIABLE, PROVEN TECHNOLOGY

The transition to a clean energy future is well underway; new wind and solar power plants are replacing coal, EVs are replacing gasoline combustion engines, and many commercial and industrial segments are transitioning to cleaner and more electrified operations. The electric grid is the conduit between clean energy generation and consumers of that electricity. Transmission capacity and innovation must keep pace to accommodate the increasingly clean and evolving electric load.



3X transmission capacity by 2050¹



New transmission builds take > 10 years²



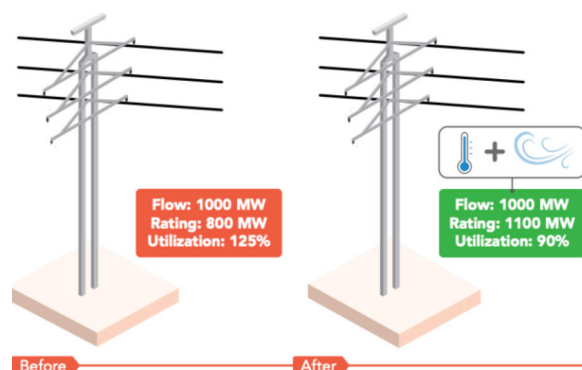
>2 TW of renewables in interconnection queues³



\$20.8B congestion costs to consumers in 2022⁴

GETS ARE THE SOLUTION

- **Grid Enhancing Technologies (GETs)** maximize the transmission of electricity across the grid through a family of technologies that include sensors, power flow control devices, and analytical tools including Dynamic Line Ratings (DLR). GETs enable the addition of new, clean power sources to the grid in a fraction of the time and cost.
- **Dynamic Line Rating (DLR)** is a GET that allows electric utilities to utilize the true maximum safe capacity that can be transmitted through transmission lines. DLR works by measuring the real-time weather conditions' impact on the temperature of power lines, which determines how much power a line can safely carry. Carrying more power on existing infrastructure allows utilities to save on transmission upgrades, reduce congestion, and ultimately save consumers money.



¹ Center on Global Energy Policy, Princeton University, 2020.

² J.P. Morgan, 2023.

³ U.S. Department of Energy, 2023.

⁴ Grid Strategies, 2023.

DYNAMIC LINE RATINGS:

- Can add up to **40% more capacity** on lines
- Fast - Are up and running in **~3 months** from approval, at about **5% of the cost** of building new lines
- May help defer some infrastructure investments made for economic reasons or increase the utilization of existing lines

BENEFITS TO CONSUMERS, CONSTITUENTS, AND CLIMATE:

- **Reliability** - Enhanced situational awareness and power supply to minimize the impact of outages/blackouts
- **Cost** - Able to reduce congestion and optimize the existing grid
- **Industry** - Helps support clean power needs of data centers and other large industrial projects
- **Climate** - DLR brings renewables on the grid, resulting in clean air, better health, and progress towards climate goals

LINEVISION LINERATE® DYNAMIC LINE RATINGS IN THE FIELD

DLR increases capacity on existing infrastructure in advance of grid reinforcement and expansion measures

- LineVision Installations have avoided 1.1 Million Megatons of CO2 to date
- **Duquesne Light Company** found [25% more capacity](#) on transmission lines equipped with DLR
- **National Grid** in upstate New York has [installed a DLR system](#) that is enabling an additional 350MW of renewable energy to be used. At 1/26th the cost of a new build, saving consumers money.
- [LineVision sensors were installed](#) in **Xcel's** territory. Average DLR exceeded static reference ratings by 9-33% in winter months and 26-36% in summer months. Overall, increased capacity was available 85% of the time.

POLICYMAKERS AGREE - GETs ARE INTEGRAL TO TRANSMISSION

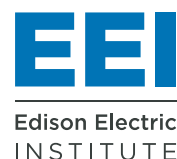


FERC Chairman Phillips: *"I believe that Grid Enhancing Technologies like advanced reconductoring, dynamic line ratings, ambient adjusted line ratings are essential to planning for our future"*

White House calls on Congress to *"direct the use of existing authorities to accelerate deployment of Grid Enhancing Technologies and transmission line upgrades that could double new renewable energy integration into the existing grid infrastructure."*



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