



EVALUATING A RANGE OF BENEFITS FROM LARGE-SCALE TRANSMISSION PROJECTS

Transmission Spanning Regions with Different Weather Patterns and Load Profiles Can Protect Ratepayers from Extreme Events

Reston, Va. – The Energy Systems Integration Group (ESIG) has released a new report, [Multi-Value Transmission Planning for a Clean Energy Future](#), demonstrating a methodology for evaluating a broad range of benefits from large-scale transmission expansion.

A robust transmission network is essential as levels of renewable energy continue to rise. When a network spans regions with different weather patterns and load profiles, it has increased resilience stemming from neighboring areas experiencing periods of scarcity and abundance at different times. However, today's transmission planning processes focus primarily on local improvements. While the current planning framework may adequately address average conditions on the grid, it fails to protect consumers from low-probability, high-impact, and costly extreme events. To evaluate the value of large-scale transmission projects requires going beyond production cost savings and identifying, analyzing, and quantifying a broader range of benefits. ESIG's new report, *Multi-Value Transmission Planning for a Clean Energy Future*, demonstrates a methodology to do this.

"This report illustrates how different types of transmission may have different benefits," said Debra Lew, associate director of ESIG. "This study showed the different sets of benefits from transmission that delivers energy from remote, high-quality resource zones and leads to fuel savings, and transmission that links diverse regions, resulting in less need to build generation capacity and thus capital cost savings."

The study modeled three potential transmission lines and quantified six types of benefits in each case: production costs, emissions reductions, generation capital cost savings, risk mitigation, resource adequacy, and resilience benefits.

"Our regional planning efforts today are as antiquated as the underlying infrastructure," said Derek Stenclik, ESIG task force chair. "This multi-benefit framework can be used by transmission planners across the country to consider risk, resource adequacy, and resilience in their planning efforts."

The use of a multi-benefit framework can more accurately value transmission projects that serve as an insurance policy against macroeconomic volatility, extreme weather, and other unexpected events. Individual regions can achieve reliability with less capacity investments and lower cost than if they were unable to share energy with neighbors and had to build a full suite

of generation resources themselves. The methodologies demonstrated in the report can be applied by system planners to plan for the long term according to their systems' resources, constraints, and needs.

[Click here](#) to download the full report.

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