

July 31, 2023

Submitted via website

U.S. Department of Energy
Grid Deployment Office
1000 Independence Avenue SW
Washington, DC 20585

www.regulations.gov

RE: Notice of Intent and Request for Information: Designation of National Interest Electric Transmission Corridors

To whom it may concern:

The Working for Advanced Transmission Technologies (WATT) Coalition appreciates the opportunity to provide input on the U.S. Department of Energy (DOE) process for applicant-driven, route-specific National Interest Electric Transmission Corridors (NIETCs). WATT supports the intentions of the program to

“advance the development of transmission facilities necessary to relieve current and expected capacity constraints and congestion and spur the buildout of a reliable and resilient national transmission system that facilitates the achievement of national and subnational greenhouse gas emissions reduction goals and reduces the cost of delivered power for consumers,”

as well as support economic vitality and energy independence. Increasing transmission capacity through advanced transmission technologies and new infrastructure is the only affordable path to reliable economy-wide decarbonization.

WATT’s key recommendation to the DOE is to require NIETC applicants to include a plan to evaluate the use of Grid Enhancing Technologies (GETs) to maximize the value of the proposed transmission infrastructure.

About the WATT Coalition:

The WATT Coalition is a trade association focused on facilitating the adoption of advanced technologies on the US electric transmission system that improve reliability, lower costs, and accelerate decarbonization—benefiting American citizens and businesses. The WATT Coalition represents GETs vendors and companies that support broader deployment of GETs in the renewable energy, energy finance and transmission industries.

GETs are hardware, software and sensors that increase the capacity, efficiency, and/or reliability of transmission facilities at a fraction of the cost of tradition upgrades by unlocking the grid’s dynamic capabilities. Grid operators use Dynamic Line Ratings (DLR), Advanced Power Flow Control (APFC), and Topology Optimization to access more usable grid capacity, more

flexibility, and greater situational awareness. GETs reduce congestion costs, enable low-cost generation to interconnect to the grid, and maximize the value of new transmission investment.

Response to Question 3: Recommendation for Section III.A.iii: NIETC projects should maximize infrastructure value with Grid Enhancing Technologies

The NOI says in Section III.A.iii.viii that applicants will include

“A discussion of whether planned or anticipated transmission project(s) within the potential NIETC would use innovative transmission technologies or combinations of technologies that would impact the size and scope of the proposed route (e.g., advanced conductor technologies that would allow for more capacity in a smaller corridor);”

The WATT Coalition recommends that the DOE look to innovative technologies to maximize the value of the new infrastructure, in addition to the scope of the route as stated above. Research by the Brattle Group¹ found that GETs could increase the utilization of new transmission lines by 15-22%.

Projects supported by the DOE should maximize their system and consumer value through the use of GETs. This approach is aligned with the Federal Power Act Section 216, which allows the Secretary to consider if the designation of a NIETC would maximize existing rights-of-way, in addition to minimizing affected areas.

We respectfully recommend that the DOE require applicants to submit a plan for evaluating DLR and APFC for cost-effective deployments at facilities that will be constructed or upgraded as part of the NIETC project or other facilities impacted by the new infrastructure. Projects should also evaluate the application of Topology Optimization software to maximize the system value of the project.

Response to Question 5: Recommendation for Section III.A.iv. Evaluation and Designation Process and Decision

GETs can significantly increase the value of a transmission line on many of the proposed evaluation metrics. NIETC projects that evaluate or plan to evaluate GETs deployments in conjunction with new infrastructure are most likely to maximize these benefits listed in the NOI, and should be rated accordingly:

- a. Alleviating congestion or transmission capacity constraints and/or responding to concerns identified in the Needs Study
GETs can reduce congestion by 40% or more by increasing available transmission capacity.²
- b. Grid reliability and resilience

¹ Tsuchida et al., “Building a Better Grid: How Grid Enhancing Technologies Complement Transmission Buildouts,” April 20, 2023. Available at: <https://watt-transmission.org/wp-content/uploads/2023/04/Building-a-Better-Grid-How-Grid-Enhancing-Technologies-Complement-Transmission-Buildouts.pdf>

² Ibid.

The flexibility enabled by GETs can improve reliability and grid resilience. DLR, APFC and Topology Optimization have all been deployed to reduce costs and disruptions associated with outages.³ DLR also offers situational awareness and asset monitoring capabilities which give transmission owners real-time information on line performance and disruptions, allowing them to respond faster and more effectively.

c. Reducing greenhouse gas emissions

Research by the Brattle Group found that GETs can double capacity for new renewable generation when deployed strategically across a system, which would achieve 90 million tons of greenhouse gas emissions reductions per year if deployed nationally.⁴

d. Generating host community benefits

Strategic deployment of GETs across Kansas and Oklahoma would create 12,000 new jobs and \$47 million in yearly land lease and local tax revenue. The renewable energy projects enabled by GETs would lead to production cost savings in the region of \$175 million per year. GETs deployments could bring these benefits to any community across the country – the total projected community benefits that could be unlocked by GETs are *thirty times* the numbers calculated for Kansas and Oklahoma.⁵

f. Improving energy equity and achieving environmental justice goals

Because GETs can increase the capacity of the transmission grid by 40%, they can reduce the total cost of needed transmission buildout by almost as much. Compared to traditional transmission upgrades, GETs are often 1/20th of the cost. Cost containment should be a key priority for energy equity.

h. Maintaining or improving energy security

The flexibility unlocked by GETs offers operators optionality in extreme circumstances. In a situation where some grid infrastructure or generation is compromised, GETs would allow the remaining system to deliver the maximum possible service. For example, Topology Optimization software automates the assessments of grid reconfigurations based on available assets, which would otherwise be impossible for engineers to discover in near-real time. DLR would allow engineers to know the true capacity of the lines that remain in service, and APFC would be able to reroute power over alternative circuits.

The WATT Coalition recommends that the DOE consider whether a project has utilized GETs to maximize these target impacts.

Respectfully submitted,

³ Ibid.

⁴ Tsuchida et al., “Unlocking the Queue with Grid Enhancing Technologies: A Case Study of the Southwest Power Pool,” February 1, 2021

⁵ Ibid.



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