

Transmission Facilitation Program

Enables DOE to finance and enter capacity contracts with new or upgraded transmission facilities with $\geq 1,000$ MW of capacity.

Guiding Criteria

- Prioritize interstate projects that facilitate renewables and regional power flows
- Design program to facilitate rapid fund recycling
- Upsize transmission projects in anticipation of future renewables integration

Draft Project Screening Criteria

- **Tier One** projects are in advanced development or shovel ready
 - Interconnection agreements signed, 90%+ ROW, major permits ready (e.g. NEPA), 25% of capacity sold, 3rd party study showing capacity likely to be filled, developer with significant financial resources
- **Tier Two** projects are in mid stage development
 - Interconnect process started, ROW acquisition underway, major permit app. submitted & under review, interest from future capacity consumers, explanation for project need, financial backing to carry project through development phase
- **Tier Three** projects are in early stages
 - Interconnect applications submitted, ROW process outlined, studies to support major permits underway, project rationale articulated, financial backing for early development in place

Transmission Facilitation Program (Cont'd)

Application Process

- Applications would be accepted on a rolling basis and re-qualified periodically
 - Previously qualified projects will see their tier upgraded after review of development advancement
- If Tier One projects exceed funding, they will be evaluated against one another
 - Project enabling more renewable MWs/DOE dollar will advance
- At project proponent's request, DOE will make projects' status public to signal other branches of government that such projects merit support

Suggested Mechanics for Capacity Purchases

- Project must have 25% of capacity sold before DOE purchases any
 - DOE would purchase up to 50% available capacity, but no more than 2/3 of open capacity
 - E.g., Project is 33% subscribed, DOE purchases 44%, leaving developer with an open position of 23%
- As developer sells capacity, DOE can “tag along” on a 2:1 ratio, a mechanism which will optimize the revolving fund dynamic

Mechanism for Loans

- Loans should be structured so that DOE, as lender, takes risk on whether transmission capacity is filled up
- DOE would lend against half the value of capacity of the line
 - Proponents required to have sold some project capacity (e.g. 25%)
 - Projects borrow against market capacity & DOE capacity sales
 - As projects sell capacity, DOE's loan is paid back, replaced by commercial lender
- Involvement of a commercial lender (e.g., lent against 25% capacity of sales), allows DOE to piggy back on lender's due diligence efforts

Smart Grid Investment Program

Accelerates the integration of smart grid functionality including, but not limited to, dynamic line rating, software enhancement, advanced conductors, etc.

Guiding Criteria

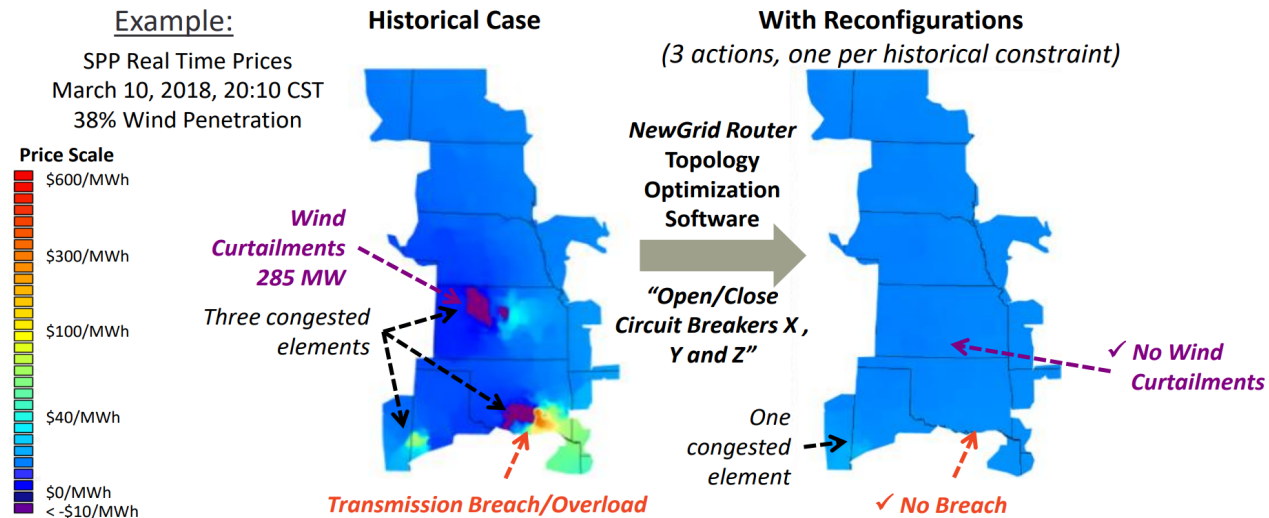
- Maximize use of existing transmission to facilitate high volumes of zero carbon energy
- Enable projects & technology deployment that would not happen on their own
- Prioritize projects that facilitate regional & interregional flows, debottleneck transmission interconnect queues, and provide the greatest benefit-cost ratio

Program Implementation

- Allow utilities, independent developers, manufacturers, and others to propose projects (i.e. not just utilities)
- DOE and FERC should hold joint conference that explores effective collaboration to support GETs deployment on the grid
- DOE should make grants to RTOs to study GET deployment in their systems
- Public power utilities should have access to DOE technical & modeling assistance as they consider how GETs impact their systems
- GET installation costs like software upgrades, personnel training, data links, and more should qualify as a match under the bill's match requirements
- Accurate forecasting of conditions dependent on additional variables is necessary, but not available through traditional load forecasting techniques
- DOE should find opportunities to improve net load and DER forecasting techniques to determine DER impact at each T-D interface substation

Topology Optimization – Example

Topology optimization complements resource-based congestion management by automatically finding reconfigurations to route flow around congested elements



A smarter grid reduces curtailments, prevents transmission breaches, and minimizes congestion. These effects combine to reduce energy prices

Additional DOE Considerations

- Majority of program funds should be reserved for adding intelligence, control, and capability to the bulk transmission grid
- Remaining funds should be allocated to electric distribution improvement
- Retail level smart meters, already broadly adopted
- Transmission projects should be evaluated on congestion relief & renewables connected
- Set a grant program to support nationwide revamping of line ratings
- Small grant program to states, state energy offices, ratepayer advocates for studies to do benefit-cost analysis

Interregional Resiliency Matching Grant Program – Draft Concept

Under certain provisions of the Infrastructure Bill, DOE can provide matching grants of up to 50% for transmission projects enhancing grid resiliency

Grid Resiliency Needs

- During Winter Storm Uri, transfer capability was critical to reliability and resiliency of the grid. Resiliency often overlooked when considering transmission value
- Transmission capacity available and heavily used was built for reasons unrelated to extreme events
- DOE might consider a program focused on grid resiliency, incentivizing relevant parties to build necessary transmission. Interregional transmission should be focused on

Consider and Encourage Interregional Collaboration Efforts

- Transmission network upgrades along seams necessary for many reasons:
 - Systems currently at capacity, contributing to queue problems
 - Local transmission upgrades too costly for small groups of interconnection customers
 - Allows for interconnection of the evolving resource mix across the seams
 - Enhance reliability and resiliency of both regions, improving extreme weather response
- DOE might create program to pay a portion of the cost to interregional upgrades
- Alternatively, DOE advances part or all the funding for lines & gets paid back as generators interconnect
 - Renewable developers participate cost sharing
 - Lines create resiliency benefits & reduce ratepayers' costs through the enabled low-cost renewables

Fund Allocation Criteria

- Groups of projects with difficult cost allocation;
- Projects that don't create windfalls to utilities or independent developers
- Projects enhancing reliability, especially during extreme weather events
- Projects maximizing renewable penetration & carbon reduction
- Projects which foster interregional collaboration

Grid to Grid Projects

- Studies show HVDC connections between East/West interconnects & ERCOT would enhance reliability and allow for new renewables integration
- Unfortunately, HVDC enhancements face many challenges
 - No planning approval to facilitate siting of HVDC projects due to the lack of interregional planning process
 - Much of the value of grid to grid connections accrue to consumers on either side of connection
- Similar solution needed for projects enhancing reliability and renewable integration:
 - Via an applicant driven process, DOE could pay for part of project cost. Remaining costs could be allocated RTO's/trans. providers on each end of the line at a reduced cost to ratepayers