Transmission Update: DOE’s Grid Deployment Office

Gretchen Kershaw
Senior Advisor, Transmission

Rail Electrification Council Meeting
November 15, 2023
GDO’s Mission
To provide reliable, affordable electricity to everyone, everywhere

Invest in electric infrastructure by...

► Maintaining and investing in critical generation facilities
► Improving and expanding transmission and distribution systems
► Developing high-capacity electric transmission lines nationwide
► Providing access to technical assistance and national laboratory expertise, modeling, and analytical capabilities
DOE’s Grid Deployment Office

The **Generation Credits Division** works with existing generation facilities to ensure resilience and reliability and works to improve electricity markets at the wholesale and distribution level.

The **Transmission Division** supports innovative efforts in transmission reliability and clean energy analysis and programs, and energy infrastructure and risk analysis in support of the Administration’s priorities to enhance grid resilience.

The **Grid Modernization Division** oversees activities that prevent outages and enhance the resilience of the electric grid.
### GDO Funding at a Glance

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<th>Generation Credits</th>
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<td>Civil Nuclear Credit Program: $6 billion</td>
<td>Transmission Facilitation Program: $2.5 billion</td>
<td>Grid Resilience State/Tribal Formula Grants: $2.3 billion</td>
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<td>Hydro Incentives: More than $750 million</td>
<td>Transmission Facility Financing: $2 billion</td>
<td>GRIP Program: $10.5 billion</td>
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<td>National Transmission Planning and Needs Studies; Offshore Wind Convenings</td>
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<td>National Interest Electric Transmission Corridor (NIETC) Designation Process</td>
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Recent Announcements
$10.5 billion in competitive grant funding to enhance grid flexibility and improve the resilience of the power system.

Three funding mechanisms:
- Utility/Industry Resilience Grants ($2.5B)
- Smart Grid Grants ($3B)
- Grid Innovation Program ($5B)

In October, GDO announced the first round:
- $3.5B in federal funding
- 58 projects across 44 states

On November 14, GDO opened the second round:
- Up to $3.9B in federal funding
- Webinar November 20
- Concept papers due January 12
Transmission Facilitation Program (TFP)

What is it?
► $2.5 billion revolving fund borrowing authority (from Bipartisan Infrastructure Law)
► Three tools: (1) capacity contracts; (2) public private partnerships; and (3) loans

Why is this program important?
► Provides federal support to overcome the financial hurdles associated with the development of large-scale new transmission lines, the upgrading of existing transmission, and the connection of microgrids in select States and U.S. territories

First RFP: Capacity Contracts
► Focus on “shovel ready” projects = begin construction by year-end 2027
► Projects would otherwise not be constructed, or be constructed with less capacity
► Strengthen resilience and reliability via interregional connections and resource diversity
► Community Benefits Plans, including labor agreements
First RFP Selections

- Three capacity contract selections announced in October 2023
- Up to $1.3B in value across all three projects

Southline
- 748 MW
- 175 miles

Cross-Tie
- 1,500 MW
- 214 miles

Twin States
- 1,200 MW
- 75 miles
Federal Power Act § 216(a) directs DOE to conduct assessments of:

- historic and expected transmission capacity constraints and congestion
- every three years
- with consultation from States, Indian Tribes, and regional grid entities

Serves as the Department’s triennial state-of-the-grid report

Released October 30, 2023
National Takeaways

1. There is a pressing need for new transmission infrastructure.

2. Interregional transmission results in the largest benefits.

3. Needs will shift over time.
Executive Summary

Visual summary of national and regional findings of need

Current or Anticipated Need:
- Improve reliability and resilience
- Alleviate congestion & unscheduled flows
- Alleviate transfer capacity limits between neighbors
- Deliver low-cost generation to high-priced demand

Anticipated Need:
- Meet future demand with within-region transmission
- Meet future demand with interregional transfer capacity

* Wholesale market price data is limited for non-RTMISO regions and capacity expansion modeling data is limited for Alaska and Hawaii. Absence of data does not necessarily indicate that there is no need for new transmission.
Existing Rights-of-Way
Needs Study – Key Takeaway: Co-location of transmission corridors is possible in some cases.

Analysis of buried HVDC along interstate highways

Select siting factors:
A) Road crossings
B) Natural obstacles
C) Buried pipelines
D) Tree removal

Additional factors:
- Railroads • Parcels • Soils
- Surface management • Mines
- State/County • Urban areas
- Terrain • Land cover • Buildings
- Geology • Existing transmission
- Protected areas • Historic sites
- Social vulnerability index

Lopez, A. National Renewable Energy Lab (2023)
Transmission Facilitation Program

Eligible project:

► Construction of a new or replacement transmission line of at least 1,000 MW;
► Upgrade of an existing transmission line or construction of a new transmission line in an existing transmission, transportation, or telecommunication infrastructure corridor of at least 500 MW; or
► Connection of an isolated microgrid to an existing transmission, transportation, or telecommunications infrastructure corridor located in Alaska, Hawaii, or a U.S. territory.
National Interest Electric Transmission Corridors (NIETCs)

► Federal Power Act Section 216(a)
  § Authorizes DOE to designate as an NIETC any geographic area that—(i) is experiencing transmission capacity constraints or congestion that adversely affects consumers; or (ii) is expected to experience such transmission capacity constraints or congestion.
  § Based on the results of the National Transmission Needs Study or other information plus additional discretionary statutory criteria
    o Section 216(a)(4)(G)(i) – DOE may consider whether the NIETC designation “maximizes existing rights-of-way”

NIETC designation focuses public and policymaker attention on greatest areas of transmission need, and unlocks statutory tools to advance transmission deployment, including:
  § Public Private Partnerships under the Transmission Facilitation Program
  § Transmission Facility Financing loans
  § FERC permitting authority under FPA section 216(b)

► Final guidance on designation process expected by end of 2023
Thank You!

Gretchen Kershaw, Senior Advisor, Transmission
gretchen.kershaw@hq.doe.gov