DOE’s Grid Deployment Office:  
Taking Advantage of Federal Opportunities  

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July 31, 2022
Engagement & collaboration
- Tribal Nations
- Federal agencies
- States
- ISO/RTOs
- EROs
- Stakeholders

Transmission Planning
- Transmission Needs Study
- National Transmission Planning Study
- Atlantic Offshore Wind Transmission Study

Financing tools ($20+B)
- Transmission Facilitation Program ($2.5B)
- Smart Grid Investment Grant Program ($3B)
- Grid resilience grants for states, Tribes, and utilities ($10+B)
- Loan guarantee programs
  - WAPA Transmission Infrastructure Program ($3+B)
  - Loan Programs Office

Transmission Permitting
- Improve federal permitting regimes with federal agency partners
- Public private partnerships
- Designation of national interest electric corridors

Transmission-related R&D
- Next generation electricity delivery technologies
- Supporting activities
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Transmission Needs Study

Objectives: Review current and anticipated future needs of the grid

“Needs” include:
• Reliability and resilience
• Congestion
• Transfer capacity limits
• New generation delivery
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Analysis includes:
- Historic transmission and generation installations
- Historic wholesale electricity prices
- Review of nearly 40 industry, academic, lab reports
- Results of capacity expansion models

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*** Study responds to several DOE authorities, including FPA § 216 enabling designation of National Interest Electric Transmission Corridors (NIETCs)
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This study is being conducted by a joint National Renewable Energy Laboratory (NREL) and Pacific Northwest National Laboratory (PNNL) project team.

This study builds on past projects and expertise at NREL and PNNL with the support and direction of DOE’s Office of Electricity.
Objectives of the study

1. Identify **interregional and national strategies** to accelerate cost-effective **decarbonization** while maintaining system reliability

2. Inform regional and interregional transmission planning processes, particularly by **engaging stakeholders** in dialogue

3. Identify **viable and efficient** transmission options that will provide broad-scale benefits to electric customers
National Transmission Planning Study Scope

- Baseline analysis
- Scenario analysis
- Public engagement
Public Engagement: Timeline

- **JAN 2022**: Public Kickoff Webinar, June follow-up Subcommittee Meetings, Initial TRC Workshop
- **APR**: TRC Workshop, Initial Modeling Results
- **JUL**: Public Webinar, Public Kickoff Webinar
- **OCT**: Public Webinar, TRC Workshop, Round 2 Modeling Results
- **JAN 2023**: Public Webinar, TRC Workshop
- **APR**: Public Webinar
- **JUL**: Public Webinar, TRC Workshop, Final Results
- **OCT 2023 +**: Follow-on work as needed

**Legend**:
- Baseline analysis
- Scenario Analysis
  - Initial scenario modeling
  - Round 2 scenario modeling
  - Final refinements, sensitivity analysis, and stress tests

**Note**: TRC = Technical Review Committee
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Offshore Wind Deployment: Goals, Challenges, Status

Federal goal (3/21): 30 GW of new offshore wind by 2030 and 110 GW by 2050
Supports the Administration’s national goal of carbon-free electricity mix by 2035

High Level Regional Challenges
• Current interconnection queue greatly exceeds existing transmission capacity
• Limited POIs for landfall
• Transmission topologies vary between regions and policies vary by state
• Higher capacity transmission often does not reach the coast
• New transmission build-out on land is challenging
• Changing policy can slow down development in the near term
TECHNICAL ASSISTANCE:
Provide analysis support for stakeholder research and data needs.

IMPLEMENTATION:
Execute the recommended action plan for the OSW Transmission on the Atlantic Coast.

ASSESS NEED AND VALUE:
Determine whether the process should be repeated for other regions of the US (West Coast, Gulf of Mexico, Great Lakes, Gulf of Maine) and determine appropriate timeline.
Offshore Topology Candidates

- Two basic archetypes of topology (radial and network), many possible permutations.
- Any proposed transmission topology involves trade-offs, including cost, reliability, expediency, expandability, and potential environmental and community impacts.
- Topologies that bridge multiple states or RTOs face added difficulty of reaching consensus among approving bodies, particularly with the assignment of costs between groups of ratepayers who may benefit differently.
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Transmission Facilitation Program (40106)

TFP is funded through a $2.5B revolving fund to facilitate the construction of electric power transmission lines and related facilities.

Legislation allows DOE to engage with eligible entities through:

- **Capacity Contracts** to buy up to 50% of planned eligible project commercial capacity for up to 40 years.
- **Public Private Partnerships** where DOE participates in designing, owning, developing, maintaining or owning an eligible project.
- **Loans** to carry out eligible projects.
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## Grant Funding Highlights

### Delivering Reliable, Clean, and Affordable Power to More Americans

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Funding Amount</th>
<th>Next Milestones</th>
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| **Grid Resilience Grants** (40101): Preventing Outages and Enhancing the Resilience of the Electric Grid / Hazard Hardening | $5 billion     | • NOI/RFI for state, territory and tribal formula grant program; [released in mid-April](#)  
                           |                | • NOI/RFI for utilities and industry competitive program expected to be released in Summer 2022 |
| **Grid Resilience Demos** (40103): Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency | $5 billion     | • NOI/RFI expected to be released in Summer 2022                                |
| **Smart Grid Grants** (40107): Deployment of Technologies to Enhance Grid Flexibility | $3 billion     | • NOI/RFI expected to be released in Summer 2022                                |