



U.S. DEPARTMENT OF
ENERGY

DOE Programs to Bolster Grid Resilience

Secretary of Energy Advisory Board Meeting | October 25, 2022

Chief of Staff Christopher Davis



DOE Toolbox for Grid Reliability

- **DOE emergency powers to preserve grid reliability**
 - Lead office: Cybersecurity, Energy Security, and Emergency Response Office (CESER)
- **Convening and coordinating abilities**
- **Technology research and development to improve grid reliability, efficiency, flexibility, functionality, and security**
 - Lead office: Office of Electricity (OE)
 - National Labs
- **Historic funding opportunities in the Bipartisan Infrastructure Law and the Inflation Reduction Act**
 - Lead office: Grid Deployment Office (GDO)
 - Certain investments run through Loan Program Office (LPO)



The Federal Power Act Section 202(c)

- As climate-fueled crises have become more prevalent, the use of 202(c) authority has evolved.
- It has moved from one where the government authorizes a specific intervention in response to a specific need, to one that **grants more flexibility to grid operators during emergencies.**

Federal Power Act (FPA) Section 202(c)

- **In certain emergencies, the Secretary of Energy may require by order temporary connections of facilities, and generation, delivery, interchange, or transmission of electricity as the Secretary determines will best meet the emergency and serve the public interest.**

Uses of 202(c) Prior to 2020

- **April 2017:** DOE issued an emergency order authorizing Grand River Dam Authority in Oklahoma, to operate its Unit No. 1 until replacement generation becomes available.
- **September 2008:** In response to **Hurricane Ike**, DOE issued an emergency order authorizing CenterPoint Energy to temporarily connect electricity lines to restore power to Entergy Gulf State, Inc., and electric cooperatives and municipal customers within Texas
- **August 2003:** In response to a **blackout in the Northeast and Upper Midwest**, DOE directed the New York ISO and New England ISO to require Cross-Sound Cable Company to operate the Cross-Sound Cable and related facilities

Recent uses of 202(c)

- **September 2022:** In response to the **California heat wave**, DOE issued several emergency orders to preserve reliability and provide relief to the **bulk power system**
 - California Independent System Operator (CASIO) authorized to operate certain units at maximum generation output levels
 - Balancing Authority of Northern California (BANC) authorized to operate specific electric generating resources when directed, under specific conditions
- **September 2021:** In response to an **extreme heat, ongoing wildfires, and drought**, DOE issued an emergency order authorizing CASIO to operate specific generating units to operate at maximum output levels
- **February 2021:** In response to the **Texas freeze**, DOE issued an emergency order to the Electric Reliability Council of Texas (ERCOT) authorizing specific electric units to operate at max generation output levels

Historic Legislation to Fight Climate Change, Bolster Grid

- A generational opportunity to rebuild the grid for the modern world
- The Department has restructured around infrastructure, with a key piece being the new Grid Deployment Office (GDO)
- Billions of dollars in financial assistance to States, Indian Tribes, utilities, and other entities who provide products and services to the grid

Bipartisan Infrastructure Law

- **\$14+ Billion** for enhancing the reliability, resilience, and efficiency of the electric grid.

Inflation Reduction Act

- Support for building transmission lines, transmission planning, and grants to facilitate transmission siting and permitting

DOE Mobilization on Grid Resilience

- Grid Deployment Office build out
- Building a Better Grid Initiative
 - Launched January 12, 2022
 - Catalyzes the nationwide development of new and upgraded high-capacity electric transmission lines and creates a more resilient electric grid
 - National Transmission Planning Study
- **RESOURCE: Grid and Transmission Program Conductor** – Online clearinghouse for transmission and grid resilience financing programs

Grid and Transmission Program Conductor

Grid Deployment Office

Grid Deployment Office » Grid and Transmission Program Conductor

The Grid and Transmission Programs Conductor acts as a clearinghouse for GDO's transmission and grid resilience financing programs made available through President Biden's Bipartisan Infrastructure Act and Inflation Reduction Act, as well as other existing DOE transmission and grid programs.

The Conductor's goal is to provide resources and open lines of communication to maximize the effectiveness of these programs and work with state and local governments, tribes and territories, utility and industry partners, and other stakeholders to catalyze the development of a resilient, modern grid and transmission infrastructure for a reliable, affordable, and clean energy future.

Programs Summary

	SOLICITATION	FUNDING MECHANISM	NEXT STEPS
TRANSMISSION FACILITATION PROGRAM	Open Fall 2022	Capacity Contracts	Solicitation for loans, public private partnerships, and additional capacity contracts in Spring 2023
GRID RESILIENCE FORMULA GRANTS - 4010(D)	Opened on July 6, 2022, and closes March 31, 2023.	Formula grant funds disbursed on a rolling basis	TBD
GRID RESILIENCE & INNOVATION PARTNERSHIPS (GRIP)	RFIF and Draft FOAIF open for comment August 30, 2022 - October 14, 2022 Funding Opportunity open Fall 2022 <ul style="list-style-type: none">• Grid Resilience Utility & Industry Competitive Grants - 4010(C)• Grid Innovation Program - 4010(B)• Smart Grid Grants - 40107	Grants and Financial Assistance	TBD
LOAN PROGRAMS OFFICE TRANSMISSION LOANS	Open for Applications	Loans	
WESTERN AREA POWER ADMINISTRATION TRANSMISSION INFRASTRUCTURE PROGRAM	Open for Applications*	Loans	
TRANSMISSION FACILITY LOANS (INFLATION REDUCTION ACT)	Check back November 2022 for additional information.		

View the Grid and Transmission Programs [Conductor Guide](#) and [Briefing Deck](#) for more information about eligibility and application requirements and funding opportunity or grant timelines.

If you have additional questions, please reach out to us at Transmission@hq.doe.gov and we will get back to you as quickly as possible.

BIL - Grid Resilience and Innovation Partnership Program

- **Grid Resilience Grants** – \$2.5 billion to modernize the electric grid to reduce impacts due to extreme weather and natural disasters.
- **Smart Grid Grants** – \$3 billion to increase the flexibility, efficiency, and reliability of the electric power system.
- **Grid Innovation Program** – \$5 billion for collaboration on innovative approaches to transmission, storage, and distribution infrastructure to enhance grid resilience and reliability.

***Funding Opportunity Announcement coming Fall 2022*

Additional Grid Resiliency Programs

- **BIL - Grid Hardening State/Tribal Formula Grant Program** – \$2.5 billion to strengthen and modernize America’s power grid against wildfires, extreme weather, and other natural disasters that are exacerbated by the climate crisis.
 - *Applications open through March 31, 2023*
- **Title 17 Innovative Clean Energy Loan Guarantee Program** – \$40 billion in loan guarantee authority for innovative transmission expansion projects and emerging technologies [received additional IRA funding]

APPENDIX

Grid Resilience Funding Available through BIL

Formula Grants	Funding Amount	Program Goal
Grid Resilience Formula Grants Preventing Outages and Enhancing the Resilience of the Electric Grid / Hazard Hardening (Sec. 40101(d))	\$2.5 billion	<ul style="list-style-type: none"> • Formula funding for Grid Resilience and Hardening Investments tied to State & Tribal led objectives, criteria and methods for resilience investments
GRIP Program	Funding Amount	Program Goal
Grid Resilience Industry Grants Preventing Outages and Enhancing the Resilience of the Electric Grid / Hazard Hardening (Sec. 40101(c))	\$2.5 billion	<ul style="list-style-type: none"> • Competitive funding for Grid Resilience and Hardening Investments tied to State & Tribal led objectives, criteria and methods for resilience investments
Smart Grid Grants Deployment of Technologies to Enhance Grid Flexibility (Sec. 40107)	\$3 billion	<ul style="list-style-type: none"> • Deployment of technology at scale, prioritization of technologies that increase transmission capacity, mitigate wildfires, manage load / electrification of “edge devices”, and incorporate secure communications / cybersecurity
Grid Innovation Program Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency (Sec. 40103(b))	\$5 billion	<ul style="list-style-type: none"> • Large infrastructure projects, including transmission, distribution and storage. • Partnership between State entities and project/infrastructure developers

BIL, IRA and Other Transmission Funding Programs

Program Name (DOE)	Total Funding	Program Goal
BIL: Transmission Facilitation Program	\$2.5 billion	<ul style="list-style-type: none">• Transmission deployment of new and upgrading high-capacity transmission lines. 3 tools: Capacity contracts, loans, and public-private partnerships
IRA: Transmission Facility Financing	\$2 billion	<ul style="list-style-type: none">• Loans for projects designated by the Secretary to be necessary in the national interest under section 216(a) of the Federal Power Act
Loan Programs Office: Title 17 Innovative Clean Energy Loan Guarantee Program	\$40 billion in loan guarantee authority	<ul style="list-style-type: none">• Innovative transmission expansion projects and emerging technologies (including HVDC deployment) are eligible
Loan Programs Office: Title 17 Energy Infrastructure Reinvestment (EIR) Financing (Loan Guarantees)	\$250 billion in loan authority	<ul style="list-style-type: none">• Retool, repower, repurpose or replace energy infrastructure (including transmission) that has ceased operations or enable operating energy infrastructure to avoid air pollutants
Western Area Power Administration Transmission Infrastructure Program	\$3.25 billion	<ul style="list-style-type: none">• Debt financing for qualifying transmission projects with at least one terminus in WAPA's 15-state footprint and that facilitate delivery of renewable energy

BIL – Additional GDO Programs

- **Transmission Facilitation Program** – \$2.5 billion to build out new interregional transmission lines across the country through revolving fund program
 - *Funding Opportunity Announcement coming Fall 2022*
- **Grid Hardening State/Tribal Formula Grant Program** – \$2.5 billion to strengthen and modernize America’s power grid against wildfires, extreme weather, and other natural disasters that are exacerbated by the climate crisis.
 - *Applications open through March 31, 2023*

Other Transmission Funding Programs

- **IRA – Transmission Facilitation Program** – \$2 billion in loans for projects designated by the Secretary to be in the national interest under section 216(a) of the Federal Power Act
- **Western Area Power Administration Transmission Infrastructure Program** – \$3.25 billion in debt financing for transmission projects that facilitate delivery of renewable energy in WAPA’s 15-state footprint
- **Title 17 Innovative Clean Energy Loan Guarantee Program** – \$40 billion in loan guarantee authority for innovative transmission expansion projects and emerging technologies [received additional IRA funding]
- **IRA - Title 17 Energy Infrastructure Reinvestment Financing** – \$250 billion in loan authority to retool, repower, repurpose or replace energy infrastructure (including transmission) that has ceased operations or enable operating energy infrastructure to avoid air pollutants