



# Objective Strategic Session (OSS)

Grid Deployment Office (GDO)

PPO-CWX-010-GDO

December 5, 2024 (2 PM ET)

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# ConnectWerx (CWX) Resources



## COMMUNICATIONS

Stay **engaged and connected** with our various outreach channels

- CWX web & opportunities page
- CWX emails and outreach
- **Join the Network!**
- CWX social media
- CWX newsletter (coming soon)



## VIRTUAL EVENTS

Take part in **opportunities** through virtual events

- CWX & DOE Objective Strategic Sessions (OSS/Webinars)
  - Learn about PIA opportunities facilitated by CWX.
  - Overview of opportunity and additional details to participants.
  - Q & A
- CWX & DOE Office Hours
  - Ask direct question to DOE and CWX.
  - Note: review application prior.



## CONFERENCES

Encourage & coordinate **involvement** at conferences

*Submit your conference today at [info@connectwerx.org](mailto:info@connectwerx.org) for our review and consideration to post under our CWX events page!*

The mission of ConnectWerx is to **Engage, Match,** and **Collaborate** across the US Industrial and Academic base to help the Department of Energy (DOE) address **energy, environmental** and **nuclear** challenges through transformative science and technology solutions.



@connectwerx



info@connectwerx.org

Join the Network!



# AI for Interconnection (AI4IX)

Objective Strategic Session (OSS)

December 5, 2024



# Agenda

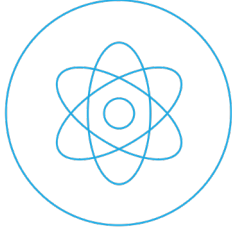
- Introductions & Overview of Grid Deployment Office
- Interconnection Challenges
- AI4IX Opportunity
- Application Process
- Q&A Session



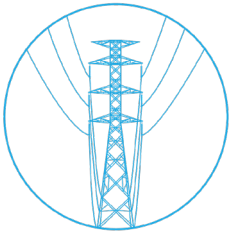


# Introductions & GDO Overview

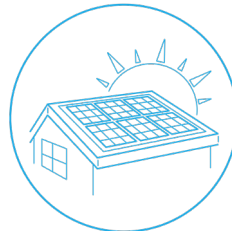
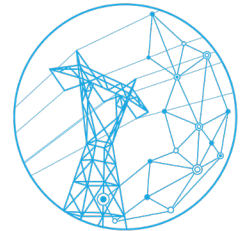
# GDO Mission and Goals



Ensure **resource adequacy** by supporting **critical generation sources** and expanding and enhancing **electricity markets**.



Catalyze the development of new and upgraded **high-capacity electric transmission lines** and an improved **distribution system** nationwide.



Prevent **outages** and enhance the **resilience** of the electric grid.

# GDO PROGRAMS AT A GLANCE

## Resource Adequacy

- **Civil Nuclear Credit Program**
- **Hydro Incentives:**  
More than \$750 million
- **Wholesale Electricity Market Studies and Engagement**

## Transmission Permitting

- **Coordinated Interagency Transmission Authorizations and Permits (CITAP)**
- **Presidential Permits**
- **Export Authorizations**
- **Environmental Reviews**

## Transmission Planning, Financing, and Commercial Facilitation

- **Transmission Facilitation Program: \$2.5 billion**
- **Transmission Facility Financing: \$2 billion**
- **Transmission Siting and Economic Development Grants: \$760 million**
- **National Transmission Needs Study**
- **National Transmission Planning Study**
- **Offshore Wind Convenings**
- **National Interest Transmission Electric Corridors (NIETCs)**

## Grid Modernization

- **Grid Resilience State/Tribal Formula Grants: \$2.3 billion**
- **GRIP Program: \$10.5 billion**
- **Puerto Rico Energy Resilience Fund: \$1 billion**
- **Territory Recovery Assistance**



# GRID RESILIENCE TECHNICAL ASSISTANCE ACTIVITIES

**Capacity building & training**











25 Clean Energy Innovator Fellows     
 Regional Trainings  
 State Regulators, State Energy Offices     
 Technology Guides     
 Tribal Workshops

**Tool Development**








TASTI-GRID outage analysis     
 ClimRR - Climate Risk and Resilience Portal     
 NAERM North American Electric Reliability Model     
 POET - Power Outage Economics Tool

**Assessments & Analysis**





















Grid Resilience Analysis & Climate Change Impacts     
 Direct, Custom TA to States and Tribes

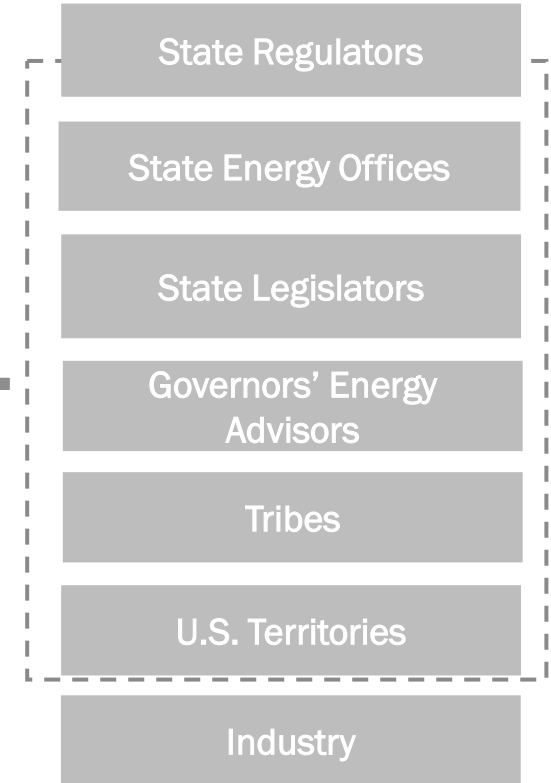
**Peer sharing and examples**



7 Energy Security & Grid Resilience Cohorts     
 CHEERS Energy Resilience State Cohort     
 Utility Climate Risk Analysis Cohort     
 Case Studies

## TA Recipients

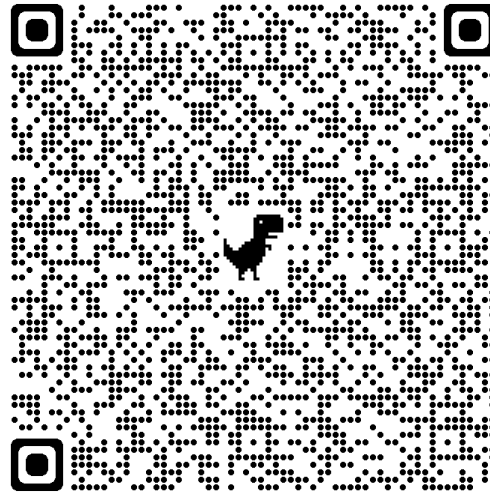


# LEARN MORE ABOUT GDO'S FINANCING OPPORTUNITIES

The Grid and Transmission Programs Conductor acts as a clearinghouse for GDO's transmission and grid resilience financing programs.

Find more information on Grid and Transmission programs within:

- Bipartisan Infrastructure Law
- Inflation Reduction Act
- And other existing DOE transmission and grid programs



<https://www.energy.gov/gdo/conductor>

## Grid and Transmission Program Conductor

Grid Deployment Office

Grid Deployment Office » Grid and Transmission Program Conductor

The **Grid and Transmission Program Conductor** acts as a clearinghouse for GDO's transmission and grid resilience financing programs, as well as other existing DOE transmission and grid programs.

The Conductor consists of an interactive tool to find the opportunities best suited to individual projects. Scroll down to the **program summary** below or visit the **Conductor Guide** for more comprehensive information about the available funding opportunities and the application process.

*For funding opportunities, any content within this website that appears discrepant from a Funding Opportunity Announcement or Request from Proposal is superseded by the FOA or RFP language.*

Use this tool to find the best program for you:

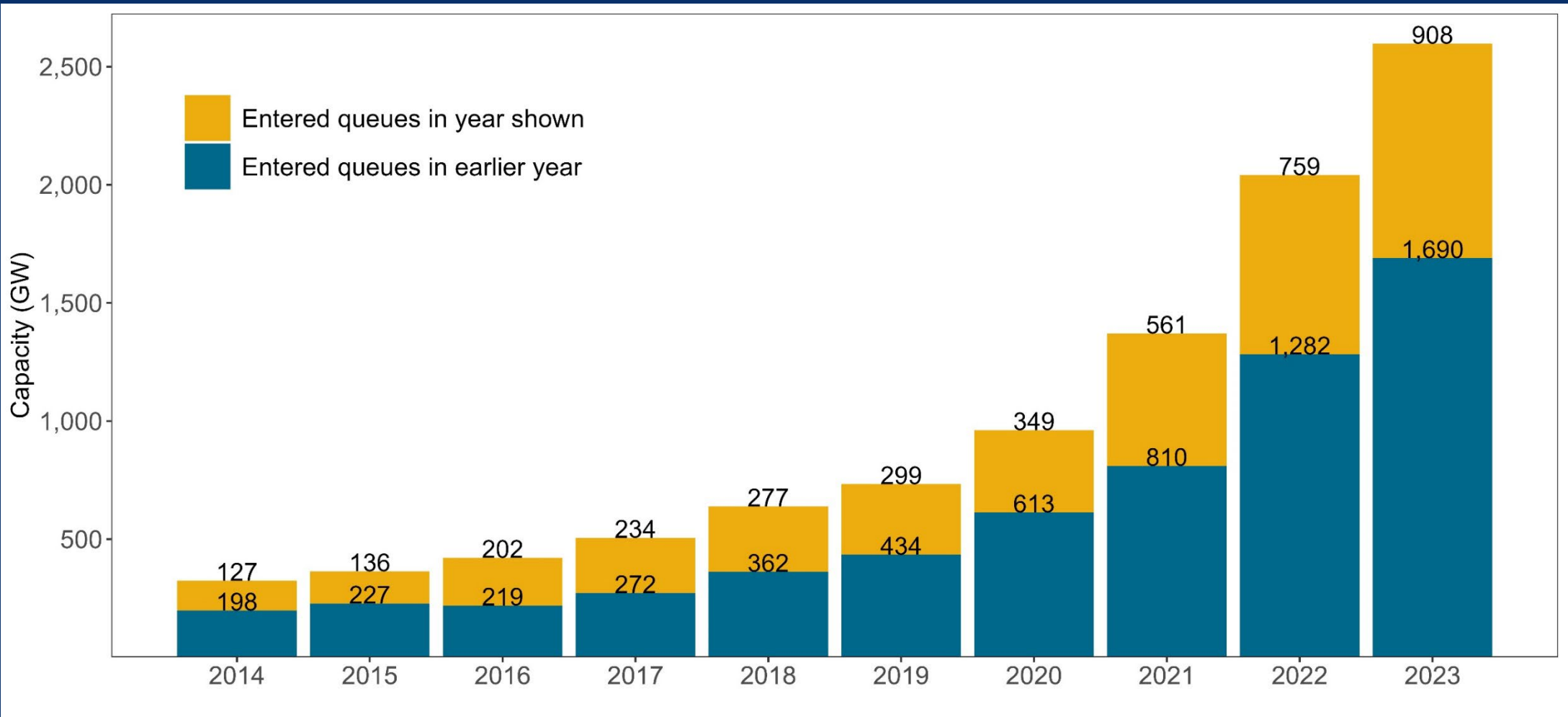
A screenshot of the interactive tool interface. It features a question "What type of entity are you?" with three dropdown menu options: "Public Entity (e.g., State, Tribal Nation, Territory, or other form of local or regional government)", "Private Industry (e.g., electric utility, grid operator, for-profit entity)", and "A public or private entity that operates in a rural or remote community". Below the options is a "Back" button and a horizontal scrollbar. At the bottom of the screenshot, there are small icons for "Reuse", "Embed", and "H/P".



# Interconnection Challenges

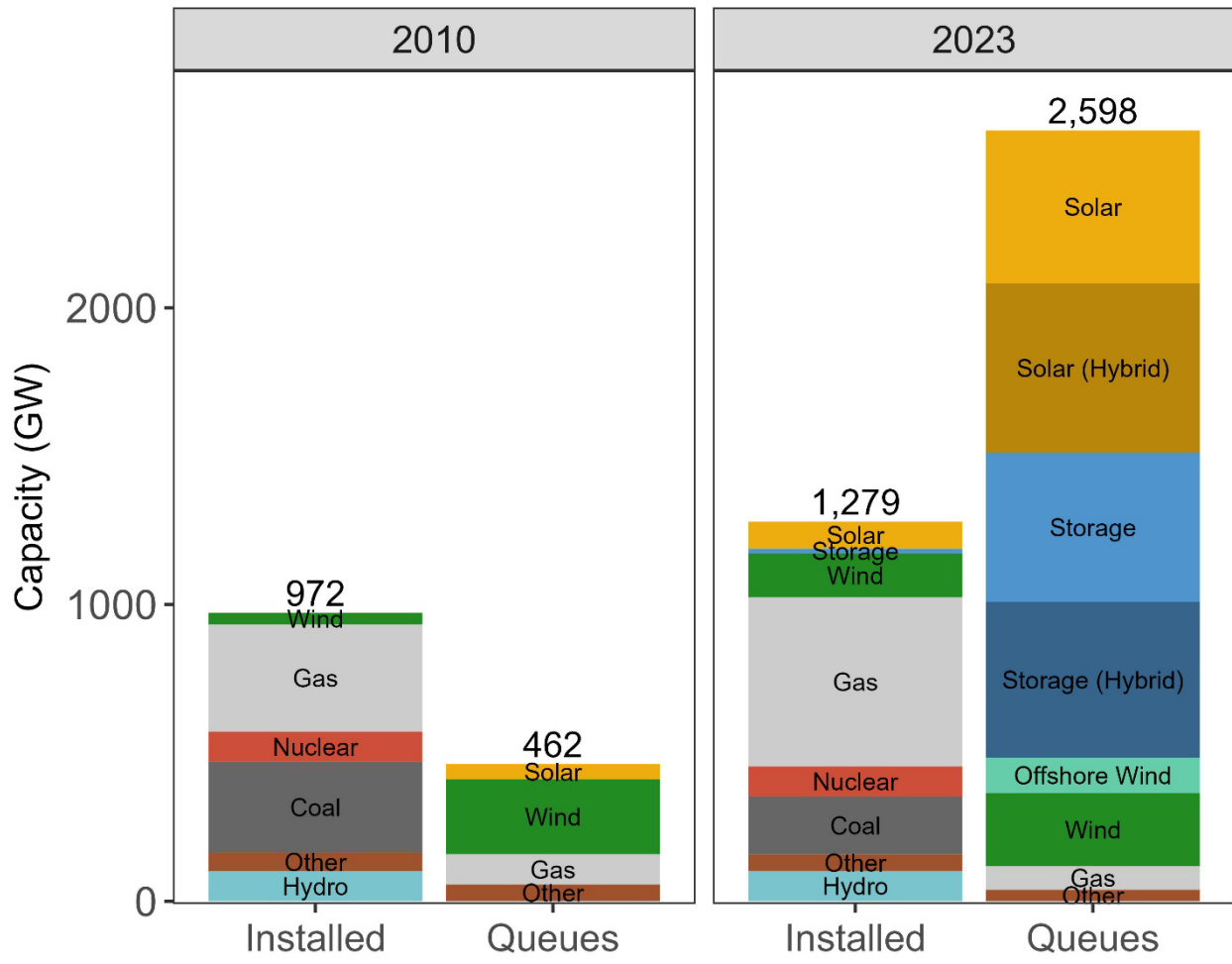
# Active Interconnection Requests: ~2.6 TW !

Includes data from all 7 ISO/RTOs and 44 non-ISO balancing areas, totaling 11,597 active requests

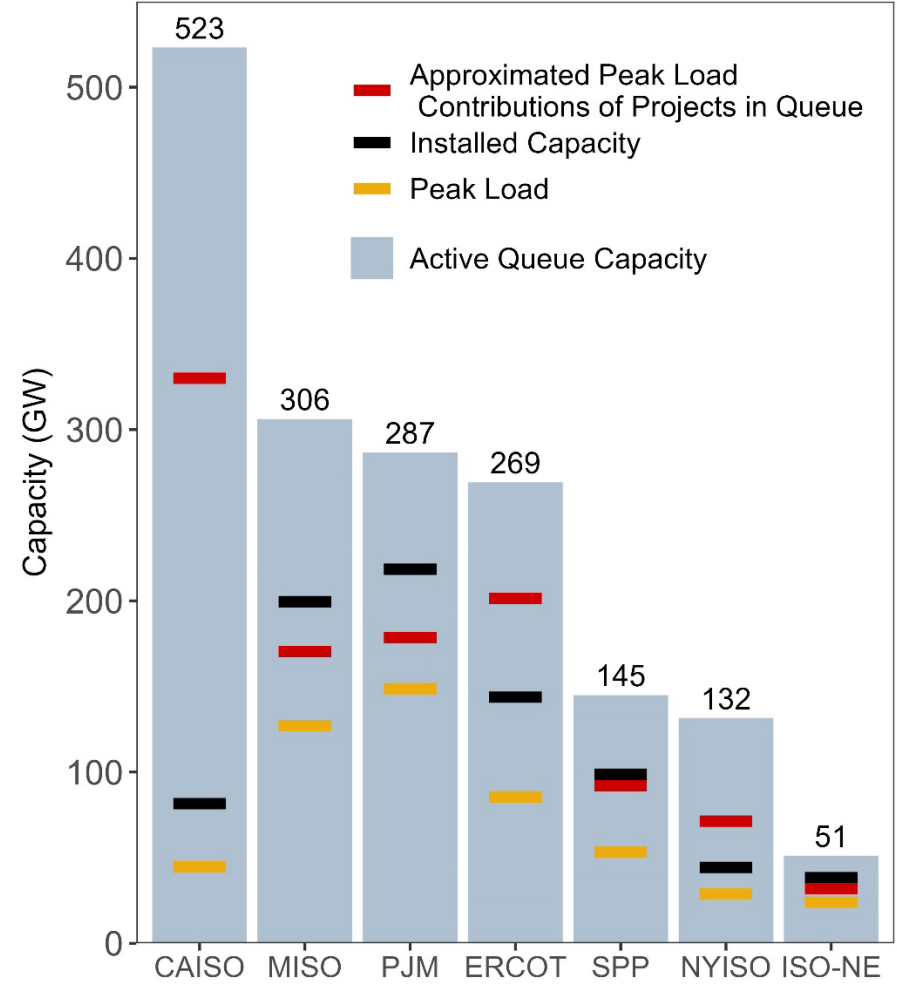


# Active capacity in queues (~2,600 GW) is twice the installed capacity of U.S. power plant fleet (~1,280 GW); greater than peak load and installed capacity in all ISOs

Entire U.S. Installed Capacity vs. Active Queues



RTO Installed Capacity & Peak Load vs. Active Queues



Notes: (1) Hybrid storage in queues is estimated for some projects. (2) Total and RTO installed capacity from EIA-860, December 2023. (3) Peak load data from RTO websites. (4) Peak load contributions by region relies on [NERC 2023 reliability assessments](#) for standalone solar, onshore wind, and hydro. Storage, gas, coal, and nuclear are approximated with a peak load contribution of 100%, even though in practice their contributions will be smaller. Offshore wind contributions are based on recent reliability studies.





# AI4IX Program

# PROGRAM OBJECTIVES

- **Apply AI software tools to accelerate the interconnection process.**
- Help accelerate the interconnection study process through the introduction of artificial intelligence and automation techniques within the interconnection application process.
- Verifying site control for interconnection applications is a major driver for deficiencies and increased labor burden.



# GOALS: ALIGNMENT WITH I2X



**Challenge:** Backlogs and delays are the result of rapid growth in interconnection requests and inefficiencies in process. What changes can be made to handle larger quantities of requests while reducing study process timelines and maintaining access?

## Topical Area

## Example Solutions

### Queue Management

Key tradeoff: *rationing quantity* of proposed projects while *maintaining competition* and open access industry principles



- *Automate* data input, study validation, and customer communications (short-term)
- Better utilize *fast-track options* for interconnection (medium-term)
- Consider *market-based approaches* to rationing (long-term)

### Affected System Studies





Key tradeoff: creating more *consistent and harmonized* interregional processes while *maintaining independence* of individual balancing areas

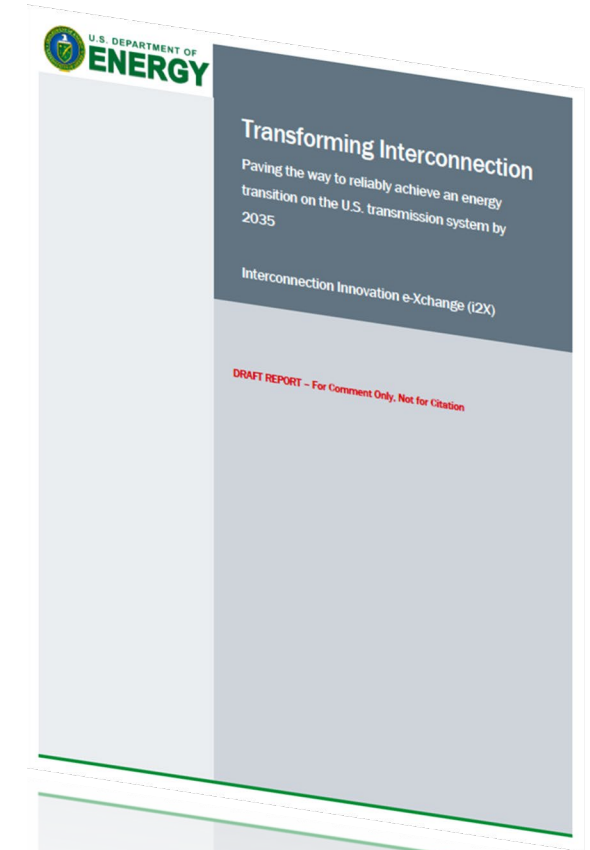


- Increase *collaboration and standardization* on affected system studies (short-term)
- Develop processes for *joint transmission planning* efforts on neighboring affected systems (medium-term)



# ALIGNMENT WITH I2X ROADMAP

	Target Value by 2030	Recent Value
 <b>Reduced interconnection process time</b> Average time from request to agreement	< 12 months	33 months (2022)
 <b>Lowered cost uncertainty</b> Standard deviation of interconnection costs	< \$150/kW	\$551/kW (2020-2021)
 <b>Increased Completion rates</b> Completion rate for projects that entered facility study phase	> 70%	45% (2016)
 <b>Maintained system reliability</b> Number of system disturbances due to modeling inaccuracy	Zero	4 (2022)





# Application Process

# Eligibility



Not-for-profit, and for-profit organizations that can certify their status as U.S. domestic entities are eligible to apply



Project members should include: software tool developers, utilities, Regional Transmission Operators (RTOs), Public Marketing Administrators and project developers



Applicant must certify it is not owned by, controlled by, or subject to the jurisdiction or direction of government of Country of Risk

# Application timeline

Milestones to Consider:	Target Date:
Project Application Period Open: DOE begins accepting applications.	November 25, 2024
ConnectWerx & DOE conduct Objective Strategy Session (OSS) with interested regional consortium performers	December 5, 2024
Office Hours for potential applicants	December 17, 2024 and January 6, 2025
Submissions Close	January 10, 2025 (1 PM ET)
Selections Made	Winter 2025
Start Work	Spring 2025



# Prioritization criteria

## Impact and Feasibility (60%)

- The degree to which the proposed approach addresses key bottlenecks in the interconnection process.
- The ability to demonstrate significant impact in reducing the interconnection process timeline and a pathway that builds confidence in the solution and approaches.
- The approach provides a data management plan that ensures the ability to incorporate the requisite datasets and models. Harmonizing data inputs, assumptions, and processes across different ISOs and utilities is critical for the successful implementation of AI solutions. Ensuring data is comprehensive, standardized, and secure.
- The adequacy of the proposed project management plan, including the clarity of project scope, cost, workplan, and key milestones to ensure project objectives are met.
- The ability to assist state energy offices, public utility commissions and utilities in accelerating the interconnection process.

# PRIORITIZATION CRITERIA

## Applicant qualifications and resources (20%)

- Expertise and experience of the project team to address all aspects of the proposed project with a high probability of success. The appropriate team members to demonstrate automation or AI solutions in a utility, RTO or multiple utilities/RTOs.
- Resources available within the organization to provide a cost-effective approach to the proposed project with a high probability of success.
- Whether the applicant has been a prior recipient of DOE grant funding within the last 2 years.
- Whether the applicant is a Minority Owned Business, Woman Owned Business, or Veteran Owned Business, or the degree to which the applicant demonstrates concrete plans to work with those businesses as vendors or contractors in the implementation of the funded project(s)
- *Minority owned business* is defined as a business of which not less than 51% is owned by one or more individuals who are: (A) citizens of the U.S.; and (B) Asian American, Native Hawaiian, Pacific Islander, African American, Hispanic, Puerto Rican, Native American, or Alaska Native.

## Impact on quantifying Community Benefits (20%)

- The degree to which the modeling tool, and methodology supports measurable impacts to community benefits based on analysis or scenarios of grid resilience implementation
- The approach will assist with states, tribes, and territories to better define community benefits and impacts.

DOE may consider portfolio-wide program policy factors in determining which full applications to select for awards



# Open Forum Q & A

# HOW TO PARTICIPATE

1. Review details on eligibility, evaluation criteria, and how to apply.
2. Attend or watch the informational webinar/Objective Strategic Session on December 5, 2024
3. Attend the Office Hours on December 17, 2024 at 2 PM ET, click here to [join](#).  
*Note: additional office hours may be held on January 6, 2025 at 2 PM ET.*
4. Download the Project Narrative template [here](#).
5. Complete the online application & upload completed Project Narrative in the application [link](#) for PPO-CWX-010-GDO. **Submissions are due no later than Friday, January 10, 2025 at 1 PM ET.**

