NASEO
National Association of State Energy Officials

GRIP Guidance for State Energy Offices: Lessons Learned from Grid Resilience Innovation Partnership Awards

Photo Credit: NASEO Staff

Purpose of this Guide

The purpose of this guide is to provide project management ideas and identify lessons learned for State and Territory Energy Offices (henceforth State Energy Offices) that may be planning to apply for Round 3 of the U.S. Department of Energy's (DOE) Grid Resilience Innovation Partnership (GRIP) Program funding opportunity. It includes an overview of the GRIP Program along with a summary of State Energy Office-led projects that have been funded through Rounds 1 and 2. Round 3 is expected to open in early 2025.

Background

The National Association of State Energy Officials (NASEO) is the only national non-profit organization that represents State Energy Offices from all 56 states and territories. NASEO serves as a resource for and about State Energy Offices through a variety of means, including hosting standing committees on a wide breadth of energy topics and holding national and regional dialogues on emerging energy issues. NASEO also represents the interests of State Energy Officials before Congress and the Administration.

NASEO's Electricity Program focuses on the breadth of transmission and distribution planning issues along with the integration of generation at the distribution and bulk power-level. In addition to looking at interdependencies with other sectors (e.g., transportation, buildings, oil and natural gas, water, etc.), NASEO Electricity Program's focus is on enhancing the resilience of the electrical grid. The NASEO Electricity Program team has been actively engaged in supporting State Energy Offices in their grid resilience efforts through various initiatives. The NASEO Electricity Committee and Transmission Working Group have brought together State Energy Offices and NASEO Affiliate members for discussions, sharing best practices and peer learning on electricity issues.

NASEO's Electricity Program team has also been actively engaged in supporting the states in the implementation of DOE's Grid Resilience State and Tribal Formula Grant (Section 40101(d)). In the majority of states, State and Territory Energy Offices have been designated by their respective governors as leads for this grid resilience funding. The GRIP Program in many cases complements this funding, further enabling states to enhance the resilience and reliability of their electrical grids.

Following the announcement of the Round 2 GRIP awards, NASEO recognized the need to facilitate peer exchange among State and Territory Energy Offices regarding this funding opportunity. The goal was to gather insights from states where a State Energy Office served as lead applicant and successfully secured a GRIP award.

Overview of Grid Resilience Innovation Partnership Program

The GRIP Program was established under the Infrastructure Investment and Jobs Act. The GRIP Program is a $10.5-billion initiative aimed at enhancing the flexibility and resilience of the grid. Administered by the DOE Grid Deployment Office (GDO), this competitive grant program was designed "to accelerate the deployment of transformative projects that will help to ensure the reliability of the power sector's infrastructure, so all communities throughout the U.S. have access to affordable, reliable, clean electricity."[1]

Through federal investments from the GRIP Program, DOE is relying on the innovation of states and their utility partners to maximize grid infrastructure modernization at scale

[1] U.S. Department of Energy, Grid Resilience and Innovation Partnerships (GRIP) Program, https://www.energy.gov/gdo/grid-resilience-and-innovation-partnerships-grip-program.

and leverage private sector and non-federal public capital to advance grid and transmission goals. It addresses the increasing threats posed by extreme weather, reduces costs for communities, and expands grid capacity to accommodate growing demand, manufacturing, data centers, and electrification.

The funding opportunities provided through the GRIP Program are organized into three topic areas, as outlined below:[2]

Grid Resilience and Utility Industry Grants (Section 40101c – Topic Area 1)

- $2.5 billion for resilience projects that reduce the likelihood and consequence of impacts to the electrical grid due to extreme weather, wildfire, and natural disaster
- Eligible entities: grid operators, storage operators, electricity generators, transmission owners/operators, distribution providers, fuel suppliers

Smart Grid Grants (Section 40107 - Topic Area 2)

- $3 billion for innovative and ambitious uses of cutting-edge, market-ready technologies
- Eligible entities: Institutions of higher education, for-profit entities and non-profit entities, state and local governmental entities, tribal nations

Grid Innovation Program – (Section 40103b - Topic Area 3)

- $5 billion for high-impact, innovative projects that improve grid reliability and resilience on the local, regional, and interregional scales
- Eligible entities: States or a combination of states, tribal nations, units of local government, public utility commissions

Since the GRIP Program was launched in 2022, GDO has issued two rounds of funding, the first in October 2023 and the second in October 2024. Through the two rounds combined, the GDO has awarded nearly $7.6 billion in funding for 104 selected projects in all 50 states and the District of Columbia:

[2] Source: U.S. Department of Energy, Grid Resilience and Innovation Partnerships (GRIP) Program, https://www.energy.gov/gdo/grid-resilience-and-innovation-partnerships-grip-program.

State Energy Offices Receiving GRIP Awards

The GRIP Program provides significant opportunities for states to improve the resilience of the electrical grids operating in their states. Historically, federal funding to enhance grid resilience or smart grid enhancements were not as readily available to states or utilities. This funding provides an opportunity for State Energy Offices and their utility partners to play a more active role in ensuring the resilience of the electrical grid as well as support grid innovation. State Energy Offices' expert understanding of the electricity issues in their states make them the ideal public-sector partners to work with utilities and identify high priority grid upgrades. The GRIP Program supports states in leveraging utility investments and funds to under-resourced utilities and innovative projects that can be replicated.

The opportunities provided to states through the GRIP program have been widely recognized. The aging condition of the country's electrical grid —with over 70 percent of transmission lines being more than 25 years old —along with increasing demand due to AI-driven data center growth, domestic manufacturing expansion, and beneficial electrification trends, mean that states are facing grid challenges that both threaten reliability and economic growth. These challenges also include increased frequency of outages, greater susceptibility to weather events, and cyberattacks.

The GRIP Program enables states, utilities, and the private sector to implement projects that enhance the resilience of the grid by leveraging federal and private investment. Through the implementation of a wide spectrum of grid resilience projects from battery energy storage to utilization of grid enhancing technologies to advanced reconductoring to enabling cost-effective integration of new generation, the benefits of the GRIP program are extensive. In addition, State Energy Offices' approach to engaging a wide range of stakeholders in the grid planning process and the Community Benefits Plans required in GRIP applications help to ensure GRIP-funded projects fully consider community and workforce development needs, as well as the priorities of electric utilities and businesses.

The following State Energy Offices served as lead applicants and were successful in receiving GRIP awards under Topic Area 3, the Grid Innovation Program. An overview of each project, along with a link to each project's fact sheet, is included below:

Project Name	Project Name	Project Name	Project Name
Railbelt Innovative Resiliency Project	Addresses interregional interconnection, increasing transfer capacity between regions; resilience and reliability improvements.	Alaska Energy Authority	$206,500,000
CHARGE 2T: California Harnessing Advanced Reliable Grid Enhancing Technologies for Transmission	Expands transmission capacity through deploying advanced conductors and dynamic line ratings and improving transmission interconnection process.	California Energy Commission	$600,561,319
Regional Grid Improvements to Address Reliability in Georgia with a Focus on Remote or Hard-to-Reach Communities	Enables grid resilience through investments in battery storage, local microgrids; new transmission lines; advanced grid control systems.	Georgia Environmental Finance Authority	$249,129,382
Enabling High Penetration of Renewables with Synchronous Condenser Conversion Technology	Provides for grid resilience through deployment of synchronous condenser conversion technology and enhanced use of energy storage and combination of solar/storage/pumped hydro systems.	Hawai'i State Energy Office and Hawai'i Department of Business, Economic Development, and Tourism	$1,675,000
Utility Solar Grid Forming Technology	Enhances grid resilience through battery storage and advanced, grid-forming inverters to existing solar power plants.	Hawai'i State Energy Office and Hawai'i Department of Business, Economic Development, and Tourism	$16,250,000
Louisiana Hubs for Energy Resilient Operations Project	Enables a comprehensive, data-driven integrated community energy planning process and a modernized network of Community Resilience Hubs supported by microgrids.	Louisiana Department of Natural Resources	$249,329,483
Power Up New England	Addresses transmission and storage through new and upgraded points of interconnection for offshore wind and energy storage system to support reliability and resilience.	Massachusetts Department of Energy Resources	$389,345,755

Project Name	Project Name	Project Name	Project Name
Joint Targeted Interconnection Queue Transmission Study Process and Portfolio	Supports a coordinated, long-range, interregional interconnection assessment that studies multiple projects at once, allowing for regionally optimized transmission plans and an innovative cost allocation.	Minnesota Department of Commerce	$464,000,000
North Plains Connector Interregional Innovation	Enables the deployment of a 3,000 MW HVDC transmission line between the Western and Eastern Interconnections, leading to increased transfer capacity and supporting the buildout of Tribal wind resources.	Montana Department of Commerce	$700,000,000
North Carolina Innovative Transmission Rebuild	Supports the deployment of advanced reconductoring of an existing transmission line, enhancing the resilience and reliability while meeting growing demand.	North Carolina Department of Environmental Quality and State Energy Office	$57,099,386
Reliable Electric Lines: Infrastructure Expansion Framework (Project RELIEF)	Enhances transmission capacity and reliability and enables integration of renewable energy through the deployment of advanced conductors using existing rights of way.	Utah Office of Energy Development	$249,557,047
Data Center Flexibility as a Grid Enhancing Technology	Enables the deployment of battery storage and clean energy solutions that improve resilience for local and regional power grids and support data centers.	Virginia Department of Energy	$85,433,351

Key Takeaways and Lessons Learned

In November 2024, the NASEO Transmission Working Group focused its meeting on State Successes: Grid Resilience and Innovation Partnerships Program Roundtable. The objective was to showcase State Energy Offices that have been successful in receiving GRIP awards and to highlight lessons learned for other State Energy Offices that may be planning to apply for Round 3 of this federal funding opportunity. Following an overview from GDO regarding the program and high-level information and statistics about the awards made through Rounds 1 and 2, speakers from the California Energy Commission, Georgia Environmental Finance Authority, and Minnesota Department of Commerce shared their experiences. Based on discussions at the GRIP Roundtable, as

well as feedback from State Energy Offices through other forums, the following key takeaways and lessons learned have emerged:

Be Prepared to Assess and Manage Risk
Those entities successful in obtaining federal funding through GRIP must be prepared to face risks that could impact the timely and effective implementation of their projects due to factors outside of their control. Issues such as supply chain delays should be considered at the outset and factored into applications. Additionally, potential delays due to the availability of Buy America Build America certified products should be included in planning. Time and cost estimates included in applications should factor in these types of variables. While these outside factors are difficult to predict, care should be taken to consider them during the application phase. Flexibility should be built into budgets and timelines to accommodate challenges that may arise.

Summary of main points:
- Lead applicants must include flexibility in their applications to account for unanticipated factors outside of their control.
- Lead applicants should assess project risks and develop mitigation plans to address them.

Partnerships are Key
The concept of effective partnerships has been integral to the GRIP Program. One of the main objectives of the GRIP Program, as outlined in the guidance provided by GDO, was to "enhance collaboration between and among eligible entities and private and public sector owners and operators on grid resilience."[3] () This program has proven to be effective in achieving that objective, enabling state and local governments, utilities, and the private sector to all work together on projects, leveraging federal and private dollars toward projects that improve the resilience of the electric power grid.

By collaborating with other entities, State Energy Offices with limited in-house capacity can leverage pooled resources from their partners. One key role identified for State Energy Offices was to convene the various relevant state entities to review the state's grid needs and potential projects against the GRIP eligibility criteria. This exercise was cited as key in helping determine the structure of the partnerships, namely, which entity would be best suited to serve as lead and which entities would be best suited as supporting partners.

A fundamental prerequisite for effective partnerships is having a shared and clear vision for projects and their requirements. Collaborating with partners before applying to fully scope the project and understanding where each entity can take the lead ahead of time may prevent complications later. Additionally, transparency and mutual trust among the partner organizations was also cited as critical for fostering effective collaboration.

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[3] GDO Grid Innovation Program Fact Sheet

Summary of main points:
- Need partners with clear vision of project requirements.
- Need partners with resources.
- Need partners with mutual trust.

Role of Lead Applicants Should Not be Underestimated
Even those with effective partnerships noted that the role of lead applicants for federal funding is more demanding and time intensive than they had anticipated, both during the application phase and after the funding was awarded. As many of these projects are construction-oriented infrastructure that require expertise in overseeing this type of activity, ensuring that partners have a demonstrated track record in dealing with complex construction and installation activities is important. During the application phase, several states mentioned that they did not foresee the level of resources needed. In some cases, they lacked the in-house capacity to complete all the portions of the funding applications and had to rely on external resources.

Once the funding was awarded, some states serving as the lead applicant found that day-to-day management responsibilities were more extensive than anticipated. The lead applicant serves as the primary point of contact with DOE, handling all communications. Regardless of how effective their team was, the work to oversee the day-to-day management of the award fell to them alone. Additionally, serving as the fiscal agent for the award meant that they were responsible for managing any associated subcontracts.

A key recommendation was to factor additional administrative costs into project applications. Items to consider include the estimated staff time needed to establish and manage agreements with subrecipients, legal and accounting costs, compliance monitoring and reporting costs, and any estimated need for outside contractors to assist with any of these tasks.

Another key recommendation proposed by several states was to develop a governance structure for managing the grants for their duration. With clear governance structures in place, all partners can understand roles and responsibilities, which is essential for successful project implementation. Discussions highlighted the importance of lead applicants budgeting additional funds to ensure sufficient resources for the administrative aspects of project implementation.

Summary of main points:
- Lead applicant must manage the partnerships, oversee any subcontracts, and handle the day-to-day management of awards.
- Lead applicants serve as main points of contact for DOE.
- It is essential to set up governance structures for long-term management of partnerships.
- Additional funds should be budgeted to support necessary administrative tasks.

Explore Additional Support to Augment Project Implementation Efforts
Some of the awarded GRIP projects involve build-out of additional transmission lines. While these tasks may be funded through GRIP, there are additional resources available to assist with stakeholder and community engagement. As community engagement has long been identified as critical to successful transmission projects, securing additional support for these tasks could significantly enhance project outcomes.

In October 2024, DOE's Grid Deployment Office announced the launch of Transmission Acceleration Grants. This program was created in response to feedback from state and Tribal entities facing growing transmission needs and project backlogs and will support capacity building and local and regional transmission planning or siting and permitting process reforms. States and Tribes can apply for a grant to study or implement modern approaches to assess the need for and impacts of new transmission infrastructure, or to increase the speed of transmission project reviews. Example approaches include:

- Identifying preferred transmission corridors;
- Streamlining permitting processes;
- Coordinating with other jurisdictions; or
- Enhancing or expanding transmission planning and facilitation-related activities.

Regarding additional assistance needs that may be encountered for the implementation of GRIP projects, the DOE Resources and Assistance for State Energy Offices and Regulators Program should be considered. This program offers technical assistance to State Energy Offices working on a wide spectrum of electricity topics, including grid planning and operations, resilience, and reliability, among others. Included in this offering are three levels of technical assistance options:

1. Help Desk: Help Desk technical assistance is available to State and Territory Energy Offices as well as Public Utility Commissions to address inquiries that require a quick, short, and narrow response from a National Lab subject matter expert.

2. Expert Match: Expert Match technical assistance is intended to address inquiries that require a deeper, longer, and broader response from one to two National Lab subject matter experts. This assistance can be delivered in the form of virtual consultations, customized virtual research presentations, customized resource materials, or simple and limited customized technical analysis.

3. Deep Dive: The Deep Dive technical assistance is designed to address inquiries that require a very deep, lengthy, and detailed response from a team of National Lab subject matter experts. This form of technical assistance can entail virtual or in-person consultations, customized virtual or in-person research presentations, customized resource materials, complex and sizable customized technical analysis, virtual or in-person trainings, or virtual or in-person stakeholder engagements.

State and Territory Energy Offices requiring assistance at any stage throughout GRIP projects —from application phase to implementation phase —should reach out to NASEO. NASEO staff can identify existing and upcoming resources as well as make connections to other State and Territory Energy Offices that may be encountering similar challenges. Additionally, NASEO can make introductions to potential partners from the private sector or other states to help form project teams.

GRIP Program Website

Information about the GRIP Program and Round 3 of the funding opportunity is available at DOE's Grid Deployment Office website.

February 2025

Acknowledgements

This document was authored by Catherine Reed and Camille Norton of NASEO. The National Association of State Energy Officials (NASEO) would like to thank Breakthrough Energy for their insights that informed the development and scope of this issue brief.

Breakthrough Energy Foundation provided financial support for this work.