Artificial Intelligence, Analysis, and Automation for Resilience in the West

Established by the Bipartisan Infrastructure Law, the Grid Resilience and Innovation Partnerships (GRIP) Program is a $10.5 billion investment to enhance grid flexibility, improve the resilience of the power system against extreme weather, and ensure American communities have access to affordable, reliable, electricity when and where they need it. GRIP funding is administered by the U.S. Department of Energy's Grid Deployment Office (GDO). This project was selected through the second round of GRIP funding.

The INERTIA project brings together a diverse coalition of small, mid-sized, and large grid operators, technology providers, and community partners in the Intermountain and Pacific Northwest regions to enhance grid resilience and safeguard high-risk communities from extreme environmental disruptions. This collaborative initiative addresses the growing threat of extreme environmental disruptions—such as wildfires, windstorms, ice storms, and extreme heat—by accelerating the deployment of innovative technologies and best practices across the energy sector. Situational awareness and automated response systems deployed through the INERTIA project will equip utilities to anticipate, respond to, and recover from increasingly unpredictable weather patterns.

Anticipated Outcomes and Benefits

Community and system benefits: The coalition—including Idaho Power, Northern Lights, NV Energy, and Puget Sound Energy—will implement technology deployment and data integration, knowledge sharing, and prioritization of grid planning and investment. Ongoing knowledge exchange, with the adoption of market-ready technologies, ensures the utilities are equipped to help high-risk communities. Some or all of this project will be implemented in collaboration with the International Brotherhood of Electrical Workers (IBEW).

Improved reliability and resilience: The project will deploy microgrids to provide backup power technology for high-risk areas, ensuring continuity in energy reliability services. The project expects to achieve a reduction in the duration and frequency of public safety power shutoffs (PSPS) by approximately 85% for certain impacted circuits or feeders where microgrids will be deployed.

Enhanced situational awareness: Predictive analytics and comprehensive wildfire risk modeling will identify wildfire risk days in advance and provide on-demand spread predictions, allowing for better preparedness. Additionally, by integrating advanced sensing technologies and AI-driven analytics, INERTIA aims to improve the speed of grid fault detection by 60% on average over non-automated solutions. Leveraging satellite imagery and AI for precise vegetation management near power lines, INERTIA targets around a 60% increase in proactive identification in the number of possible vegetation-related outages.

Project Details

- **Project:** Increasing Energy Resilience via Technology Investment Acceleration (INERTIA)

- **Applicant/Selectee:** E Source

- **GRIP Program:** Smart Grid Grants (Bipartisan Infrastructure Law, Section 40107)

- **Federal cost share:** $77,021,741

- **Recipient cost share:** $88,413,069

- **Project location:** Idaho, Montana, Nevada, Washington

- **Project type:** Situational Awareness and System Automation Solutions

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