

USEA Advances Georgia's Energy Security Through Grid Resilience Study

The United States Energy Association's Georgian Resilience Study equipped Georgia with a comprehensive risk assessment of its high-voltage grid, identifying vulnerabilities and guiding targeted reinforcement strategies. By enhancing grid resilience and supporting national energy security goals, the initiative strengthened U.S.-Georgia technical cooperation and created future opportunities for American technology and investment.



In collaboration with the Georgian State Electrosystem (GSE), the United States Energy Association (USEA) advanced Georgia's energy security through the Georgian Resilience Study. This critical initiative strengthens the country's ability to assess and mitigate risks to its high-voltage transmission network.

The study provided a thorough, system-wide evaluation of risks and vulnerabilities, examining the grid's susceptibility to two human-made threats – cyberattacks and military conflict – and seven natural hazards: avalanches, wildfires, earthquakes, floods, landslides, windstorms, and icing. Using advanced geospatial analysis and hazard modeling, USEA classified each transmission line segment as sustainable, moderate,

or severe, offering a structured and transparent view of system vulnerabilities.

A key output of the study was the development of a detailed risk registry for each hazard, which consolidates segment-level exposure data into clear, actionable profiles. Supported by regional maps and visualizations, the study identified geographic hotspots and provided GSE with a practical toolset to guide infrastructure reinforcement and emergency planning.

Beyond hazard classification, the study suggests the need for targeted infrastructure reinforcement and resilience planning. It provides a technical starting point for future modeling of cascading grid failures and may help inform long-term

strategies, including considerations for a national electricity defense framework.

Aligning with Georgia's national priorities for energy independence and infrastructure protection, this initiative provides decision-makers with the necessary data and analysis to reduce systemic risk and build a more resilient transmission backbone.

This project highlights the importance of U.S. technical assistance in helping allied nations achieve their energy security objectives. It demonstrates how U.S.-led engineering and analytical expertise can strengthen critical infrastructure abroad while laying the groundwork for future collaboration and investment opportunities for U.S. technology providers and partners.