STATE, LOCAL, TRIBAL, AND TERRITORIAL ENERGY ASSURANCE AND SECURITY

2018 Year in Review

U.S. DEPARTMENT OF ENERGY | Cybersecurity, Energy Security, and Emergency Response

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INTRODUCTION

Through the newly established Office of Cybersecurity, Energy Security, and Emergency Response (CESER), the U.S. Department of Energy (DOE) addresses the emerging threats of tomorrow while protecting the reliable flow of energy to Americans today. An important part of CESER's critical energy infrastructure security mission is the engagement with State, Local, Tribal and Territory (SLTT) officials and industry partners.

CESER maintains strong relationships with state and local communities to build and sustain capacity and preparedness through technical assistance, development of tools, risk analysis, education, and exercises to facilitate response in times of energy disruption. CESER also partners with state and local organizations to support these efforts, including the National Association of State Energy Officials (NASEO), the National Association of Regulatory Utility Commissioners (NARUC), the National Conference of State Legislatures (NCSL), the National Emergency Management Association (NEMA), the National Governors Association (NGA), and the American Public Power Association (APPA).

By encouraging energy security planning that is risk-based, operationally-focused, and cross-jurisdictional, CESER builds the SLTT capacity to serve national security interests for cybersecurity, energy security, and emergency response. The office also enhances government and private sector decision making through shared understanding of risks and hazards and facilitates relationships within and across SLTT governments and agencies.

Relevant Policy Developments in 2018

In 2018, the President released a National Cyber Strategy that reflects the commitment to protecting the country from cyber threats. DOE plays an active role in supporting the security of the Nation's critical energy infrastructure in line with the implementation of that strategy.

This past year, Congress also passed the Disaster Recovery Reform Act of 2018 (DRRA) as part of the Federal Aviation Administration Reauthorization Act of 2018. The DRRA acknowledges the shared responsibility for disaster response and recovery, reduces the complexity of the Federal Emergency Management Agency (FEMA), and builds the nation's capacity for the next catastrophic event. The law amends the Stafford Act to allow for cost-effective pre- and post-disaster risk mitigation and for rebuilding using the latest hazard-resistant designs, codes, and standards. DOE is working with states and industry to inform FEMA's implementation of DRRA. DOE also continues to support the development of state and local preparedness and mitigation measures to protect and secure energy infrastructure.

Purpose of the SLTT Energy Assurance and Security 2018 Year in Review

The *SLTT Energy Assurance and Security 2018 Year in Review* highlights actions taken by DOE, in partnership with several national associations, industry, and SLTT government officials, that promote energy security at all levels of government and build the resilience of the Nation's energy sector.

KEY ACCOMPLISHMENTS IN 2018

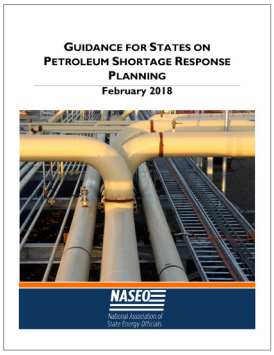
CESER's SLTT Program supports a wide variety of projects. This report highlights only a few key accomplishments under each of the SLTT Program's three overarching goals:

- Enhancing the understanding of risks and improve related information sharing across the sector;
- Clarifying industry and government roles in cybersecurity; and
- Building energy security capacity across government and industry and improve workforce development opportunities.

Enhancing the Understanding of Risks and Improve Related Information Sharing Across the Sector

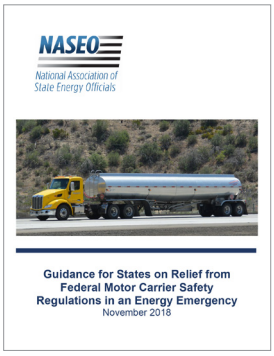
To increase SLTT and industry awareness of hazards to the energy system and help mitigate the impacts of disruptions and make more informed response decisions, ISER supported the development of several scalable, easily-applied analytical tools, methods, and processes – a few of which are highlighted below:

NASEO's Guidance for States on Petroleum Shortage Response Planning



In response to the needs identified by states and others for improved planning and mitigation in the petroleum sector, NASEO developed a Petroleum Shortage Response Planning Guide designed to provide assistance to states as they update their energy assurance plans. It also summarizes key guidance and serves as a companion to NASEO's suite of energy assurance technical assistance offerings, energy emergency exercises, and coordination workshops. The guide includes a variety of templates to request waivers and address other needs in the event of a petroleum supply disruption, providing states with a toolkit as they plan and respond to petroleum shortages. Oregon, Montana, Michigan, and Wisconsin have already drawn from the guidance in the process of updating their plans, and ten states have indicated they intend to use the guide as they update their plans in the future.

NASEO's Update to Federal Motor Carrier Safety Administration Guidance



NASEO completed an update to its "Guidance for States on Relief from Federal Motor Carrier Safety Regulations in an Energy Emergency," which provides clarification on changes in the law and includes market factors and conditions that can assist states in making decisions on whether waivers are needed. It also explains how the waivers apply to intra- and inter-state trucks and those with hazardous material designation. Finally, it encourages communication among the states and the Federal Motor Carrier Safety Administration (FMCSA) on the use of state and federal regional waivers for emergency relief.

NGA's State Resilience Assessment and Planning Tool (SRAP Tool)

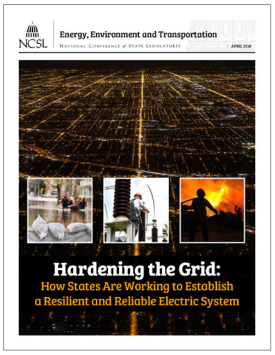
Governors and their states increasingly face a host of human and natural disasters such as severe storms, wildfires, cybersecurity threats, and terrorism. These threats can all negatively impact the viability of energy, water, transportation and other critical infrastructure assets. To help governors understand their states' resilience

by identifying gaps in planning and preparedness for future disasters, NGA is developing the State Resilience Assessment and Planning Tool (SRAP Tool). NGA piloted a beta version of this tool with governor-led teams from Idaho, Maryland and Oregon in 2018, holding subsequent in-state retreats to further explore gaps and opportunities identified by the tool. Based on feedback from those state teams and the results of the in-state retreats, NGA is revising the SRAP Tool for a future public release. Through this project, NGA was able to identify some of the following resilience needs in the energy sector:

- Improve coordination between state government, the energy sector, and other critical infrastructure sectors to identify and prioritize resilience investments for critical infrastructure, coordinate risk assessments, identify planning gaps or misalignments, and improve response and restoration activities;
- Increase support for local communities and consumer-owned utilities; and
- Develop more state and regional tabletop exercises to facilitate local planning, relationship building, and state, local, and private sector coordination.

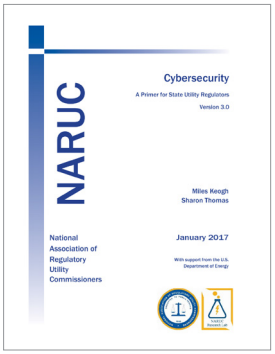
NCSL's Publications on Hardening the Grid as well as Open Government Laws for Critical Energy Infrastructure

Energy security touches on how resilient energy systems are against extreme events, how reliably systems operate as the grid changes and modernizes, how well they're protected against malicious attacks, along with how well federal, state and local governments prepare for these scenarios.



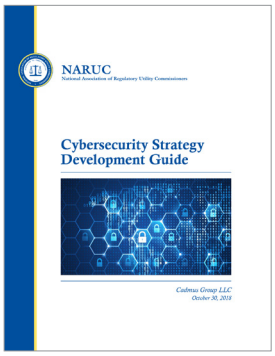
State legislatures play a key role in the process of developing policies that contribute to energy security. They can signal the legislature's support or opposition to certain policies, urge action on the part of the federal government, initiate dialogue, establish study committees to develop policy recommendations, or issue reports. More directly, they can provide funding, incentives, and mandates for technologies that help strengthen the grid. In the same way, they can impose restrictions, planning requirements or action from state agencies. NCSL's Hardening the Grid Report highlighted key bills in 2017 across states and energy security issues - throughout 2017, legislators in at least 40 states considered more than 260 bills, with more than 35 bills and resolutions from at least 16 states passing. These bills focused on disaster preparedness, energy storage measures, and manmade threats to the electric grid. NCSL also published a web brief on Open Government Laws and Critical Energy Infrastructure, which provides a comparison of state open government laws and exemptions related to critical energy infrastructure and has become a key resource for state policymakers, regulators and energy officials.

Clarifying Industry and Government Roles in Cybersecurity



To improve the coordination and cybersecurity emergency response by refining the Federal role in cybersecurity across agencies and classifying the state jurisdictional authorities and roles (e.g., state public utility commissions (PUC), National Guard), CESER's SLTT Program is supporting several projects spanning 2018 and 2019. In 2018, work focused primarily on supporting regulators in taking the next step on cybersecurity issues following the 2017 updated cybersecurity manual. In 2019, CESER's SLTT Program will support the development of more tools for regulators to assess cybersecurity in the regulated utilities, a report on how state energy officials can support cyber workforce development, and guidance on the role of state and federal offices on cyber issues in the energy sector.

NARUC Cybersecurity Strategy Development Guide



To support state PUCs in developing cybersecurity strategies tailored for their own commissions, NARUC developed a Cybersecurity Strategy Development Guide. This document aims to guide commissions' interactions with their utilities on issues related to cybersecurity, drawing from the experiences of federal, state, and private-sector stakeholders, including state PUCs themselves. Further, it provides guidance and practices for regulators to consider as they develop and implement their strategies. Commissions that have already developed a strategy can use this guide to review and enhance their current strategy. Published in October 2018, the guide has been presented to NARUC's Critical Infrastructure Committee; widely circulated to NARUC members; and, described in detail during cybersecurity related presentations made by NARUC staff to relevant stakeholders. A recent survey conducted by NARUC shows that states have or are developing strategies that align with this guidance.

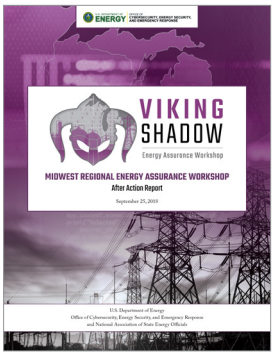
NARUC/New England Conference of Public Utilities Commissioners (NECPUC) Cybersecurity Training for State Regulatory Commissions

In conjunction with its work on cybersecurity, NARUC held the first of three planned regional cyber training events in October 2018 with support from New England Conference of Public Utility Commissioners (NECPUC). Commissioners and commission staff from Maine, Vermont, New Hampshire, Rhode Island, Connecticut, and Massachusetts attended. Training topics included an in depth look at utility operational technology (OT) system components and their function, cybersecurity threats to those systems, and relevant protection strategies that utilities employ. Cyber disaster response and recovery also were addressed. A session was dedicated to NARUC's Cyber Manual tool kit, which emphasized the complementary nature of individual components and their value to PUC's evaluation of utilities' cybersecurity risk management initiatives and costs. Key outcomes of the workshop included enhancing commissions' knowledge of utility information technology (IT) and OT technologies and the common approaches to securing them from cyberattacks; raising awareness of the current regulatory requirements for cybersecurity and incident reporting (e.g. North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) Standards); and discussing ways to improve coordination with state and federal partners and engagement with regulated and quasi-regulated entities on cybersecurity.

Building Energy Security Capacity across Government and Industry and Improve Workforce Development Opportunities.

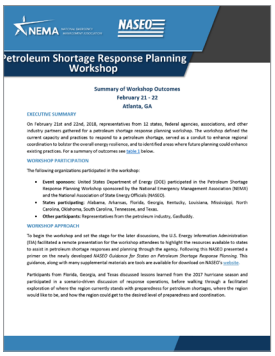
To enhance SLTT and industry energy incident preparedness and response through more organized, consistent, and adaptable training, CESER's SLTT Program supported a wide variety of projects across the national associations. This includes work with the NARUC Critical Infrastructure Committee and the NASEO Energy Security Committee, as well as support of national and regional meetings hosted by NASEO, NARUC, NGA, and NCSL – engaging all 50 states and the 6 territories. In addition, CESER's SLTT Program supported a variety of workshops and webinars, which highlighted a number of areas of successful emergency preparedness as well as areas of improvement:

NASEO Viking Shadow Midwest Regional Energy Assurance Workshop



The Viking Shadow Midwest Regional Energy Assurance Workshop in July 2018 in St. Paul, Minnesota, assessed 15 states' preparedness and response capabilities to a fuel disruption and a cyberattack impacting the electricity, petroleum, and natural gas sectors. The workshop scenarios examined state, federal, and private-sector roles and procedures in response to an emergency fuel disruption and a cyberattack that was complicated by weather events affecting the Midwest. Participants focused on discovering gaps and solutions in existing state, federal, and private energy emergency response planning, policies, roles, and procedures. They also explored cybersecurity issues that states and the private sector should consider as they oversee energy system (regulated and unregulated) investments and modernize policies to reflect the growing cyber threat, and special planning and response considerations where cyber events and natural disasters occur in the same time period.

NEMA/NASEO Petroleum Shortage Response Planning Workshop



In February 2018, representatives from 12 states, federal agencies, associations, and other industry partners gathered for a Petroleum Shortage Response Planning Workshop. The workshop defined the current capacity and practices to respond to a petroleum shortage, served as a conduit to enhance regional coordination to bolster the overall energy resilience, and to identify areas where future planning could enhance existing practices. Areas for improvement included better state public information strategies, including social media outreach and rumor control as well as the need to further integrate industry and associations in unified messaging efforts both during and before events; a more robust understanding of state and federal regulations and limitations on data sharing; and increased and more effective regional cooperation.

U.S. Virgin Islands Preparedness and Resilience Workshop

To highlight lessons learned and improvement opportunities in the wake of the 2017 hurricane season, the U.S. Virgin Islands Water and Power Authority (VI WAPA) and the American Public Power Association (APPA) held a storm preparedness and resilience workshop August 2018 in St. Thomas, VI.

The workshop discussed the myriad logistics involved in restoring an island territory in the wake of a major disaster and noted improvement opportunities in the areas of:

- Mutual aid deployment and billeting;
- Investing in critical infrastructure (including strategic undergrounding of power lines);
- Shipping, storing and staging materials;
- Communications across the islands and with the mainland; and
- Pre-storm contracting (with utilities, contractors, port authorities, and others).

U.S. Department of Energy Exercises

In 2018 Clear Path VI, the sixth installment of DOE's flagship exercise series, was tied to FEMA's National Level Exercise 2018 (NLE 2018). Clear Path VI and the NLE shared a common scenario environment – the landfall of a major hurricane in the Mid-Atlantic region. Clear Path VI's objectives included to examine the energy sector's response processes, challenges, and related consequences, identify interdependencies and align priorities across critical partner sectors (energy, communications, transportation) in the preparation for and response to the impact of a major hurricane in the Mid-Atlantic region, and to establish and reinforce relationships across the energy sector and its partners to facilitate future preparedness and emergency response operations. Throughout the exercise, states and other participants identified several areas of improvement including comprehensive evacuation planning, which would integrate state and local evacuation plans and directives with fuel supply contingencies, and better data collection and modelling on fuel availability, damage to infrastructure, and other critical information in disaster areas.

In October 2018, CESER conducted its Liberty Eclipse 2018 tabletop exercise. This exercise focused on a national cyber incident impacting multiple electric power entities and oil and natural gas resources.

Liberty Eclipse is DOE's cybersecurity-focused exercise series. The series supports the Department's requirement to establish a cyber incident exercise program to test and enhance coordination procedures within the energy sector. Participants of Liberty Eclipse 2018 included representatives from federal agencies, state offices, energy trade associations, investor-owned utilities, and municipalities.

Response Efforts

DOE coordinated with the states during a number of emergency response efforts, such as Hurricanes Florence, Gordon, Isaak, Lane, Olivia and Michael, the wildfires in California, and typhoons Mangkhut and Yutu. During each activation and response, DOE held information calls with states, engaged the Energy Emergency Assurance Coordinators (EEACs), and provided situational awareness to states and local authorities. This allowed states to improve coordination with the Federal government, enhanced regional cooperation among states, and increased state-industry collaboration.

LOOKING AHEAD TO 2019

In 2019, the SLTT Program will continue to encourage holistic energy security planning and strengthen the SLTT offices' preparedness and response capabilities to better prepare the Nation for energy emergencies. Pursuing the same goals as outlined above, the SLTT Program will include:

- Guidance for PUCs on how to understand the cybersecurity posture of regulated utilities;
- An online energy security 101 training to institutionalize the fundamentals of energy assurance and security planning;
- An *Energy Security Accelerator for the Energy Offices of the U.S. Territories and Remote Communities of Alaska* to aid the territories' energy offices and Alaskan remote communities, through coordination with the Alaska Energy Authority, to improve their energy security, emergency preparedness, and response capabilities; and
- State-wide and multi-state trainings on existing emergency planning capabilities, including a Western and several in-state workshops on natural gas and petroleum fuel supply disruptions.

APPENDIX A: POINTS OF CONTACT

This report was prepared by the U.S. Department of Energy's Office of Cybersecurity, Energy Security and Emergency Response (CESER) under the direction of Karen S. Evans, Assistant Secretary, CESER, and Adrienne Lotto, Acting Principal Deputy Assistant Secretary, CESER, and Deputy Assistant Secretary, Infrastructure Security and Energy Restoration (ISER) Division.

For questions about the State, Local, Tribal, and Territorial Program, please contact Kate Marks (kate.marks@hq.doe.gov) and Kirsten Verclas (kirsten.verclas@hq.doe.gov).

APPENDIX B: ACRONYMS

APPA	American Public Power Association
EEAC	Energy Emergency Assurance Coordinators
CESER	Office of Cybersecurity, Energy Security, and Emergency Response
CIP	Critical Infrastructure Protection
DOE	U.S. Department of Energy
DRRA	Disaster Recovery Reform Act
ISER	Infrastructure Security and Energy Restoration Division
IT	Information Technology
FEMA	Federal Emergency Management Agency
FMCSA	Federal Motor Carrier Safety Administration
NARUC	National Association of Regulatory Utility Commissioners
NASEO	National Association of State Energy Officials
NCSL	National Conference of State Legislatures
NECPUC	New England Conference of Public Utility Commissioners
NERC	North American Electric Reliability Corporation
NGA	National Governors Association
NLE	National Level Exercise
OT	Operational Technology
PUC	Public Utility Commission
SLTT	State, Local, Tribal, and Territorial
SRAP Tool	State Resilience Assessment and Planning Tool
USVI WAPA	U.S. Virgin Islands Water and Power Authority

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