



BCSE-NASEO Views on Disaster Response and Preparedness

This document represents views from a number Business Council for Sustainable Energy (BCSE) members and the National Association of State Energy Officials (NASEO) regarding initiatives that should be undertaken by Congress to upgrade the nation's aging energy infrastructure and built environment, with a specific focus on disaster response and preparedness.

BCSE is a coalition of companies and trade associations from the energy efficiency, natural gas and renewable energy sectors. It includes investor-owned utilities, public power, independent power producers, project developers, equipment manufacturers, and environmental and energy market service providers. As a diverse coalition, not all members endorse or take a position on the issues discussed in this document.

NASEO is the only national non-profit association representing the governor-designated energy officials from each of the 56 states and territories. Formed by the states in 1986, NASEO facilitates peer learning among state energy officials, serves as a resource for and about state energy offices, and advocates the interests of the state energy offices to Congress and federal agencies.

Objective

Federal and state government tax incentives, funding and market conditions should advance electric grids, power supplies and building stock that are reliable, more resilient, agile, cost effective, cyber-secure, and environmentally sound.

Statutory Changes

- Congress should enact the House-passed, H.R. 3050, the Enhancing State Energy Security Planning and Emergency Preparedness Act of 2017, which would provide states with federal financial assistance to implement, review, and revise their energy emergency plans, improve energy emergency preparedness and cooperation with federal agencies, and place a greater emphasis on cybersecurity across the energy sector. The bill would allow states to leverage federal resources, knowledge, and expertise to build stronger partnerships with public and private stakeholders to improve energy emergency preparedness and response.

- The Supplemental Appropriations Bill for disaster assistance in the aftermath of the 2017 hurricanes and wildfires (P.L. 115-123) requires the Federal Emergency Management Agency (FEMA) to issue guidance on Stafford Act reforms that allow disaster relief funds to be used to repair buildings and structures to standards beyond their pre-disaster condition. FEMA is required to issue guidance on what mitigation steps will qualify the state for higher cost-share of future disaster relief funding. Congress should provide oversight to ensure this guidance is issued in a timely manner and should consider these changes for future disasters.

This may include statutory reforms to the Stafford Act to enable a rebuilding effort that can utilize the full suite of energy technologies for a new and improved grid (distributed generation, etc.) and an improved building stock that can withstand future catastrophic events. By way of comparison, a November 2017 report from the National Association of Regulatory Utility Commissioners (NARUC) on [Natural Gas Access and Expansion](#)¹ addresses the benefits and opportunities for access and expansion of natural gas lines while existing gas lines are being replaced. The report proposes logistical and financial solutions to expand natural gas distribution lines and provides a summary of recent natural gas expansion activities by state.

- Congress should encourage privately financed pilot projects for the military, the hospitality industry, first responders, and mission critical facilities such as state and local government buildings, school and university buildings, hospitals, nursing homes, police stations, and shelters. Examples include projects and work with the Defense Department in Alabama, Florida, Texas, Colorado, and Hawaii². Criteria for use of these funds should include providing continuity of electric operations during extreme events, reducing long-term operating costs, promoting economic development and having some match with public or private funds.
- Other legislative vehicles should be considered including draft legislation from Senator Shaheen (NH) To amend the Homeland Security Act of 2002 and the Energy Policy and Conservation Act to require the Secretary of Energy to carry out certain programs to improve the resilience of energy systems.
- Direct DHS in conjunction with other relevant agencies and industry to create a plan for deployment of non-fuel distributed energy resources for disaster relief and recovery, particularly focused on critical facilities.

State and Local Programmatic Changes

- The Department of Energy should reexamine building and energy codes to encourage high performance and zero energy buildings to address physical and thermal-performance

¹ On the web at <https://www.naruc.org/report-of-the-naruc-task-force-on-natural-gas-access-and-expansion/>

² For further information please see Air Force Office of Energy Assurance activities

characteristics, and other vulnerabilities in buildings, to optimize their ability to withstand catastrophic events and the potential for grid-building integration to allow for load shifting.

- Peer to peer mentoring among state and local officials, builders, and technology experts should be encouraged to leverage expertise. Technical assistance should be provided through states so that best practices can be shared and the expansion of energy-saving and resilient building practices can be facilitated.
- Utility regulations and standards should be reviewed to prevent inadvertent roadblocks to the establishment of community infrastructure microgrids where appropriate.

Financing

- Congress should consider a combination of direct spending, bonding, and public private partnerships that incorporate third-party financing and public funds, such as Energy Savings Performance Contracts (ESPCs), Utility Energy Savings Contracts (UESCs), energy-as-a-service³, micro-grids, and Power Purchase Agreements⁴
- A business supported environment should exist to attract investment
 - A reliable counterparty with whom to sign contracts is needed for utility, government, and quasi-government entity contracts
 - Contracts should be awarded competitively

A new federal tax credit bond for infrastructure with an emphasis on energy efficiency and resilience in public buildings and facilities should be created. The Resilient Efficient Community Bond (RECB) would provide low-cost financing to public issuers to invest in technologies that increase the issuer's energy resilience capability. The RECB program would be administered by the U.S. Department of Treasury and would allow for public issuers (states, cities, counties, territories, Indian tribal governments or any political subdivision thereof) to qualify for projects that support critical energy loads in public buildings, facilities, and infrastructure.

³ The US Air Force Office of Energy Assurance is working in the area of energy as a service

⁴ Both NJ and RI have infrastructure-oriented energy banks (vs green banks) operated by the state. In the case of NJ it is targeted to resilience and was created following hurricane Sandy. Supporting state development of financing entities focused in this area utilizing some type of federal bonding, funding, incentives etc would be beneficial.

Resilience

- Short-term and long-term spending packages and tax credit bonds should aim to encourage investment in smart and advanced technologies – particularly in mission critical facilities – that can serve the short-term and longer-term needs of the affected communities and businesses using the following criteria:
 - Resilient
 - Should have islanding capabilities from the main grid during a power outage
 - Should have controls and two-way communications to prevent outages at individual electrical substations and protect critical infrastructure
 - Should include cyber security strategies and protection
 - To the extent possible, projects should be built to withstand future threats from extreme weather events (e.g., microgrids, storage, undergrounding, combined heat and power, SCADA, and software management smart inverters, etc.)
 - Should address fuel diversity and potential supply interruptions
 - Should consider resilient co-benefits in non-energy community and facility services, including, but not limited to waste management (including disaster debris) steam/heat supply, space for shelter and essential community services, and material and equipment staging
 - Have low water needs
 - Advance sustainable waste management practices
 - Be cost effective over the lifetime of the project

Technical Recommendations to Ensure Rebuilding is More Resilient

- Replace downed electric lines with higher efficiency transmission wires which maximize inputs of natural gas and the entire portfolio of renewable energy resources, including biomass, waste, geothermal, hydropower and marine, solar, wind and waste heat. The new transmission wires need to have additional capacity where renewables are likely to be interconnected.
- Substations and distribution grids should incorporate increased loops and architectures which include: smart switching, and bi-directional sectionalizers and reclosers to maximize smart controls and other energy efficiency measures, distributed renewable energy and distributed natural gas generation -- so that electric power can be isolated and directed towards critical needs during the various stressors on electric grids.
- Efforts should be made to integrate micro-grids and community renewable grids, where applicable, to enhance further resilience and access to energy when certain portions of the grid are disabled. And special attention needs to be planned for and supported to ensure that shared public infrastructure can be operational at all times through on-site energy generation that do not have extended fuel delivery chains or which have locally sourced feedstock, relying more

heavily on on-site renewable energy, municipal renewable infrastructure, and natural gas along with energy storage.⁵

- Leverage the resilience expertise and lessons learned from island and remote communities and states such as Hawaii and Alaska. Utilize a public-private approach that engages state and local government experts and private sector experts to provide island and remote communities with technical assistance, input, and ideas on a peer-exchange basis to ensure innovative technologies and approaches used in other states are leveraged.
- Advance transportation system resilience through inclusion of propane, natural gas, electricity, and other alternative fuels in some emergency and disaster recovery fleets. A number of states and cities are taking steps to diversify some critical vehicle fleets to ensure capabilities during petroleum disruptions. Similarly, New Jersey has taken steps to utilize micro-grids for some mass transit applications that may need to function for evacuations during emergencies.

Weather Forecasting

- Existing programs and data from the federal government on weather trends, forecasting, and resilience should be compiled and made available to communities.
- Studies from private sector weather services predict higher amounts of storms, and storms with more intensity for the United States. Appropriate entities within the Executive Office of the President, including the Council on Environmental Quality, Office and Management and Budget, and Office of Science and Technology Policy, should use information on storm intensity and frequency to engage with the private sector to help identify risks facing communities, and craft appropriate federal responses. Such responses could include establishing a dialogue with the private sector, a strategy to identify, prioritize, and guide federal investments to enhance resilience against future disasters.

Preparing for Cyber Security Risks

- Preparedness and mitigation measures emphasizing combined heat and power (CHP), storage, energy efficiency, etc., offer more rapid restoration following cyber events if properly applied.

⁵ Of note, post-Superstorm Sandy, Camden, New Jersey invested in a microgrid pilot project, which utilizes various technologies to take critical municipal infrastructure like water treatment facilities off grid.