NCSL

Strong States, Strong Nation

State Efforts to Protect the Electric Grid

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Overview

There are growing threats to the nation's critical infrastructure and state legislatures have been working diligently to address these issues through a variety of measures. Recent events have highlighted weaknesses in the nation's aging electrical grid, sections of which originated more than a century ago.[1] Even as Superstorm Sandy and Hurricane Irene continue to loom large in the collective memory, Hurricane Joaquin ushered in October 2015 by battering the Eastern seaboard with record levels of rain and 100-mph winds. The increased intensity of recent weather events is raising awareness about the physical threats to the grid. At the same time, a growing array of cyberthreats to energy infrastructure have led experts to increasingly draw attention to the grid's technological vulnerabilities.

Some legislators have sought to make the grid more resilient by diversifying energy production. More than a dozen states introduced legislation in 2015 that calls for greater diversity in power sources—from expanding renewables to supporting nuclear and fossil fuels. At the same time, there has been a significant push to encourage and incorporate microgrids into the electrical system. These standalone systems can operate independently and supply power to a specific area in the event of a broader disruption to the electric system. Some lawmakers are eager to promote microgrids, given the economic impacts of widespread power outages. It has been estimated that a single day without power in New York City would cost $1 billion.[2]

Many states are also considering legislation in support of smart grid technology to not only increase energy system resilience, but also improve reliability and efficiency. These policies can increase the reliability of the electrical grid by improving the management of electricity demand and by

allowing utilities to locate and address failing equipment or power outages more quickly. This technology comes with drawbacks, however, as it opens a door to cyberthreats.

As with many aspects of life, the electrical grid is increasingly interconnected. Millions of new intelligent components are operating in conjunction with legacy equipment that was not designed with modern cybersecurity in mind. These modernization efforts are changing the dynamics of the grid, connecting customer-based smart grid devices and utility control systems to the Internet. While this increased connectivity leads to improved efficiency and grid performance, it also increases the vulnerability to cyberattacks.

The scope of this threat has increased substantially in recent years—with persistent and documented cyber-intrusions into the power grid's critical infrastructure and control systems—leaving some experts to warn that the U.S. power sector is underprepared.[3]

Given that smart grid technologies are considered integral to establishing a 21st century grid, most of the cybersecurity legislation proposed in 2015 revolved around the creation of cybersecurity task forces or committees to study the issue and make recommendations on how to minimize these threats. All of this comes as concerns linger about the physical security of the nation's energy supply. At least 15 bills were introduced in 2015 that address the threat of electromagnetic pulse (EMP) attacks, and at least five bills exempt critical information about the grid and public utilities from disclosure under the Freedom of Information Act.

In all, more than 200 bills relating to energy security and resiliency were introduced in statehouses across the United States in 2015. These state policies play an important role in hardening infrastructure and preparing for disaster response in the event of disruptions and emergencies.

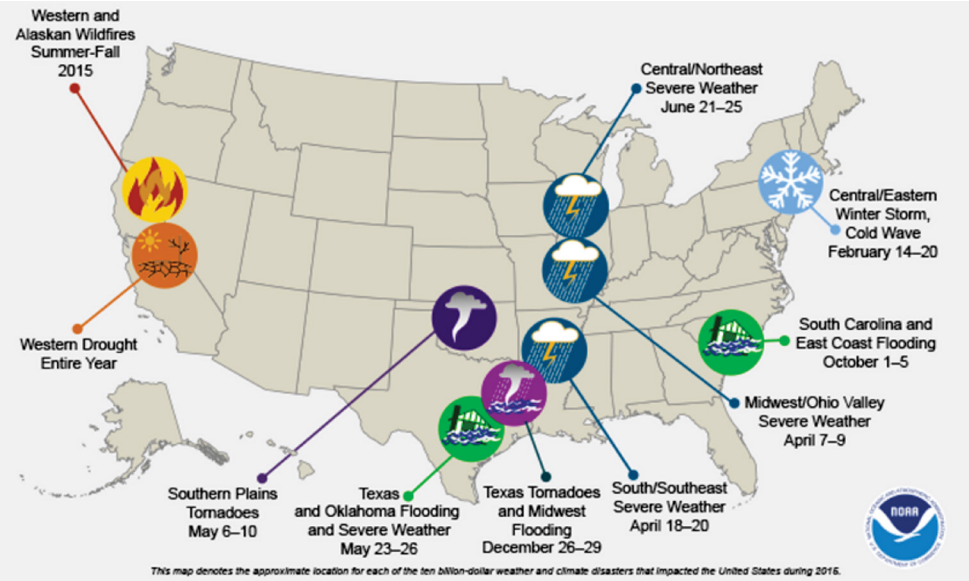
Disaster Preparedness

States have taken a number of steps to ensure that lights will stay on and water will continue to flow in the event of an emergency. These range from requiring standby generators at certain critical facilities to making it easier for out-of-state workers to help with disaster response.

Concerns are growing over the frequency and intensity of natural catastrophes. Data from the U.S. Department of Energy (DOE) shows that weather-related blackouts in the United States doubled between 2003 and 2012. In that same period, 679 widespread power outages occurred due to severe weather, at an annual cost of between $18 billion and $33 billion (Figure 1), according to a report issued by the Department of Energy.[4]

The Atlantic seaboard—where the U.S. Geological Survey says sea-level rise is occurring at rates three-times faster than the global average—is considered especially vulnerable. Two recent reports have compiled information on a number of coastal metropolitan regions, and assessed the vulnerabilities to energy infrastructure by combining factors of sea-level rise and storm surge. The report from the DOE Office of Electricity Delivery and Energy Reliability[5] found that infrastructure in certain regions—such as New York City, Houston and Miami—have a heightened level of risk. New York City alone has around 50 substations and 33 power plants that currently are located in areas that could be affected by rising seas and storms. A similar report by the Union of Concerned

Figure 1. U.S. 2015 Billion-Dollar Weather and Climate Disasters



Scientists[6] found that more than 400 major substations and nearly 70 power plants currently are exposed to flooding from hurricanes and storm surge in five metropolitan regions.

This trend is expected to continue and even increase in the coming decades. A flurry of recent studies have explored this issue and found that major storms are expected to occur more frequently,[7] and that the resultant flooding will be more severe by the close of the century.[8] A report commissioned by the Massachusetts Senate[9] warned that the state's infrastructure—including 12 power plants and LNG storage facilities located on land less than 10 feet below high tide—will face growing risks of flooding if steps are not taken quickly.

Nearly 40 percent of the U.S. population—over 123 million people—live in coastal shoreline counties, according to U.S. Census Bureau data.[10] Officials across the political spectrum in these communities are working to address the threat posed by rising seas and other concerns that could affect the electric grid. However, far from being a strictly coastal issue, nearly 20 cities across the United States—including Dallas, New Orleans, San Francisco, Norfolk and Pittsburgh—have hired a "chief resilience officer," whose role is to develop and lead a comprehensive resilience strategy.

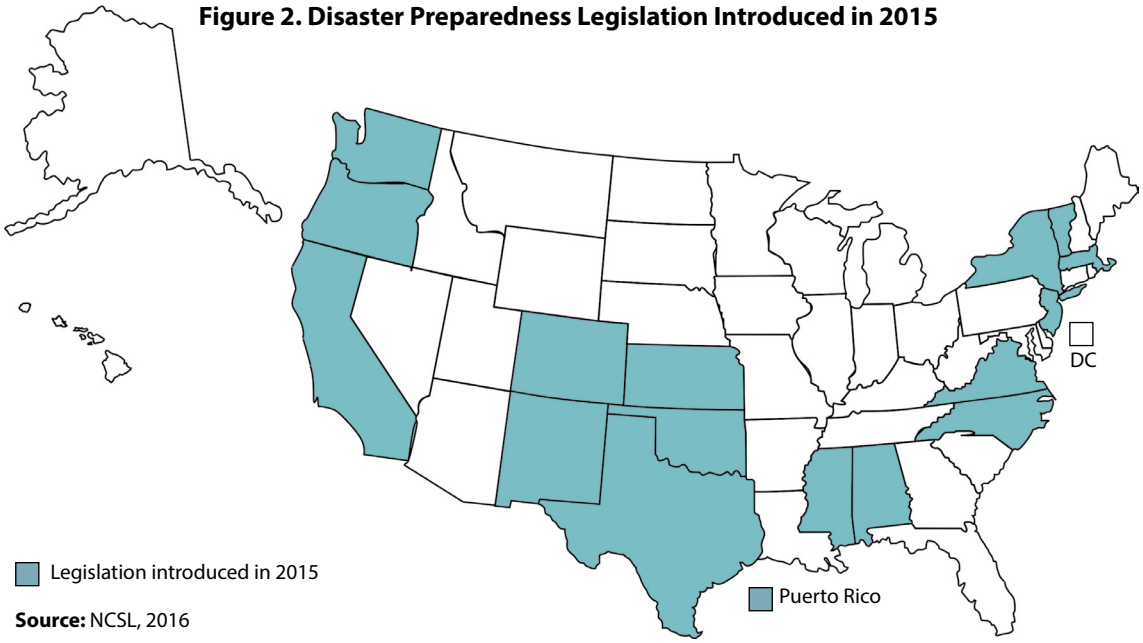
Lawmakers in 16 states and Puerto Rico introduced at least 29 bills to address disaster preparedness in 2015 (Figure 2), while 22 bills were introduced in 2014. Seven states—Alabama, Kansas, Mississippi, New Mexico, Oregon, Vermont and Virginia—introduced at least 12 bills that would exempt out-of-state workers and businesses from certain tax and registration requirements when they are responding to disasters.

At least 15 bills encouraged backup power generation, either by requiring that certain critical infrastructure or public shelters maintain backup generators or by offering incentives to residents who invest in energy-generating technologies. Two states—Oklahoma and Texas—proposed bills that would make it illegal for a homeowners' association to prohibit standby generators. At least four bills were intended to ensure access to motor and heating fuels in the event of an emergency. At least six bills relate to creating state response plans, and instruct state agencies to assess the grid's vulnerabilities and make recommendations.

Key bills from 2015

- **California** A.B. 184—(failed-adjourned) would provide energy efficiency and disaster preparedness guidance and assistance for small businesses.
- **Massachusetts—**Four bills (all pending) would establish a comprehensive adaptation management plan in response to climate change.

Figure 2. Disaster Preparedness Legislation Introduced in 2015



Source: NCSL, 2016

- **New Jersey**—A.B. 2579 (vetoed) would authorize municipalities to facilitate private financing of water conservation, energy improvements, storm shelter construction, and flood and hurricane resistance projects. Four bills (all pending) deal with backup generators and on-site generation for critical facilities. A.B. 2586 (vetoed) would establish a commission to study and make recommendations for improving the state's electric utility infrastructure.
- **New York**—A.B. 3007 (enacted) requires an energy audit and disaster preparedness review of residential health care facilities. A.B. 8390 and S.B. 5271 (both pending) would require the state, its political subdivisions, utilities and health care facilities improve preparedness and response and would require critical infrastructure to be protected.
- **North Carolina**—S.B. 436 (failed-adjourned) would direct the utilities commission to perform an assessment on the extent to which the state's electrical grid is prepared for an emergency.
- **Vermont**—H.B. 320 (enacted) establishes a petroleum set-aside system for liquid fossil fuels to be used in times of emergency or shortages.
- **Puerto Rico**—H.R. 108 (enacted) orders a comprehensive study of infrastructure, including systems for electricity, water and sewage, and other matters relating to security during a public disaster.

Key bills from 2014

- **New Jersey**—Five bills (all failed-adjourned) would require or offer incentives for installation of emergency generators at certain dwellings and facilities. Three bills (all failed-adjourned) would require public utilities to file emergency response and flood mitigation plans. Two bills (both failed-adjourned) would address the issue of motor fuel availability during emergencies. A.B. 1199 (failed-adjourned) would require electric distribution lines to be located underground in areas that are affected by severe weather or natural disasters.
- **New York**—A.B. 8387 (failed-adjourned) would direct several cities to conduct studies on the preparedness and readiness to respond to certain disasters.

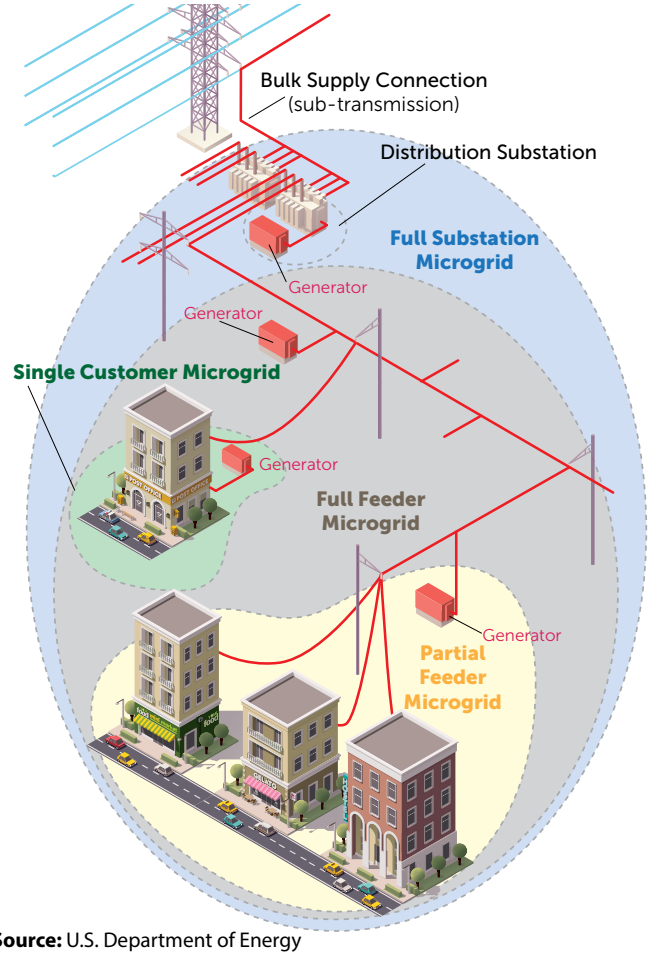
Microgrids

Legislators in at least 17 states introduced bills in 2015 that promote microgrids, often noting that these systems can serve an important role in an emergency. Microgrids can be designed in various ways and can include a variety of resources—utilizing everything from renewables to diesel generators—but they all provide independent power generation to a specific geographic area. The key resiliency component is the microgrid's ability to operate independently from the larger grid (Figure 3).

So, when a major power outage occurs, as happened in the aftermath of Superstorm Sandy, a microgrid can supply homes and businesses with electricity. In fact, while Superstorm Sandy knocked out power for 8.7 million customers across 24 states, a microgrid known as "Co-op City" in the Bronx was able to provide heat, electricity and hot water for 60,000 residents. Similarly, Princeton University and New York University were able to supply heat and power to parts of their campuses throughout the storm.

Figure 3. How a Microgrid Works

A system with its own power resources, loads and definable boundaries that can operate independently or in conjunction with the area's main electrical grid.



Source: U.S. Department of Energy

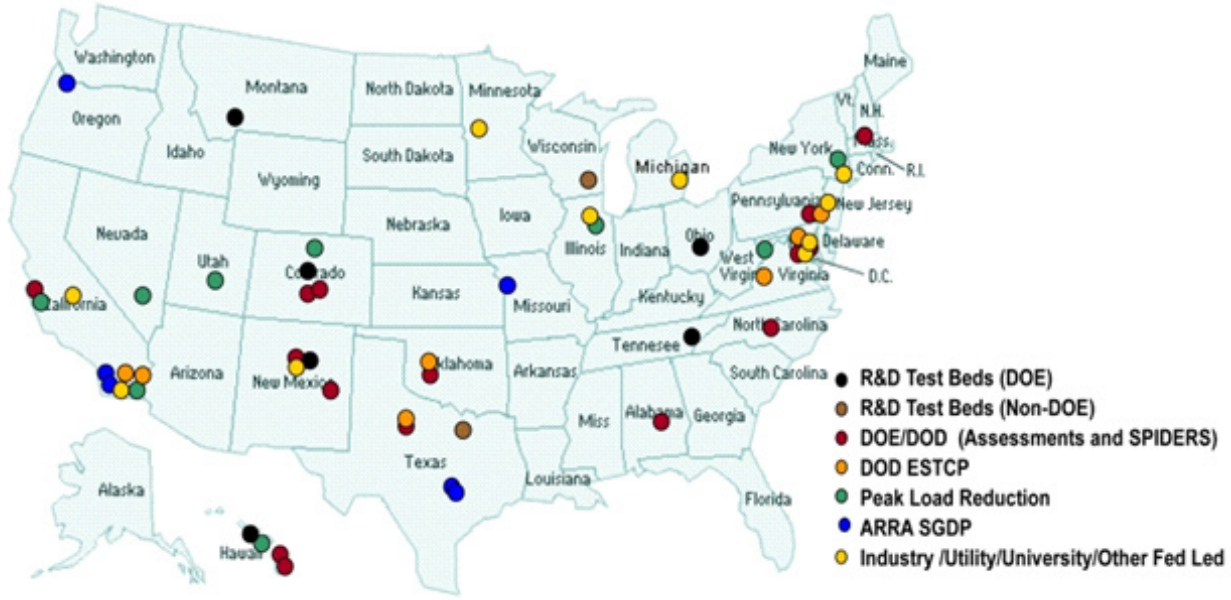
The East Coast is not the only area where microgrids are gaining ground. There are several federal initiatives through the DOE that support microgrid development across the United States (Figure 4). At the state level, bills emerged in a number of states that face hurricanes, earthquakes, tornados, winter storms and other threats. In the West, wildfires have been a regular cause of power outages in recent years, and some California tribes have developed microgrids that expand access to electricity in rural areas and help prepare for emergencies. On several occasions, a Miwuk Indian-owned microgrid has proven its ability to supply its own power for up to 10 days without grid access during wildfires.

While much of the discussion about microgrids has centered on their use in disaster scenarios, some lawmakers have also noted their ability to help diversify sources of energy generation. At least 28 bills were introduced in 2015. At least 11 bills in six states—Alaska, Connecticut, Colorado, Massachusetts, Maryland and New Jersey—offered grants, loans or other incentives to encourage the development of microgrids or similar structures.

Key bills from 2015

- **California**—A.B. 1530 (pending) would promote deployment of clean distributed energy and prioritizes deployment of smart grids and microgrids.
- **Connecticut**—H.B. 6991 (enacted) authorizes the Connecticut Green Bank to help finance energy improvements, including clean energy resources used in the creation of a microgrid, along with any related infrastructure.
- **Hawaii**—H.B. 264 (pending) would require the Public Utilities Commission to establish a process for electricity consumers to form microgrids to provide secure and reliable power when the central grid is down. Three resolutions urged utilities and the Public Utilities Commission to adopt policies that would support microgrids.
- **Illinois**—H.R. 3327 (pending) would require a report and workshops to illustrate how development of microgrids could strengthen the electric grid through reliance on the diverse supply options.

Figure 4. U.S. Department of Energy Microgrid Landscape



- **Maryland**—H.B. 1087 and S.B. 398 (both enacted) establish a pilot program for community solar.
- **Minnesota**—H.B. 3a (enacted) makes changes to energy provisions and requires that utilities issue reports that outline investments considered necessary to modernize and enhance the reliability of the grid, including energy storage and microgrids.
- **New Jersey**—At least eight bills have been introduced over the past two years that require or encourage backup generators. A.B. 4180 and S.B. 2691 (failed-adjourned) would establish microgrid pilot programs to equip critical public facilities with microgrids.
- **New York**—A.B. 6746 (pending) would require the Public Service Commission to develop recommendations for establishing microgrids, including critical buildings and the geographic areas where microgrids should be a priority.
- **Washington**—H.B. 1095 (enacted) requires a life-cycle cost analysis before construction or renovation of critical government facilities to determine the potential for combined heat and power systems that are able to serve public health and safety during a natural disaster or other emergency in which there may be a widespread power outage.

Distributed Generation and Diversification

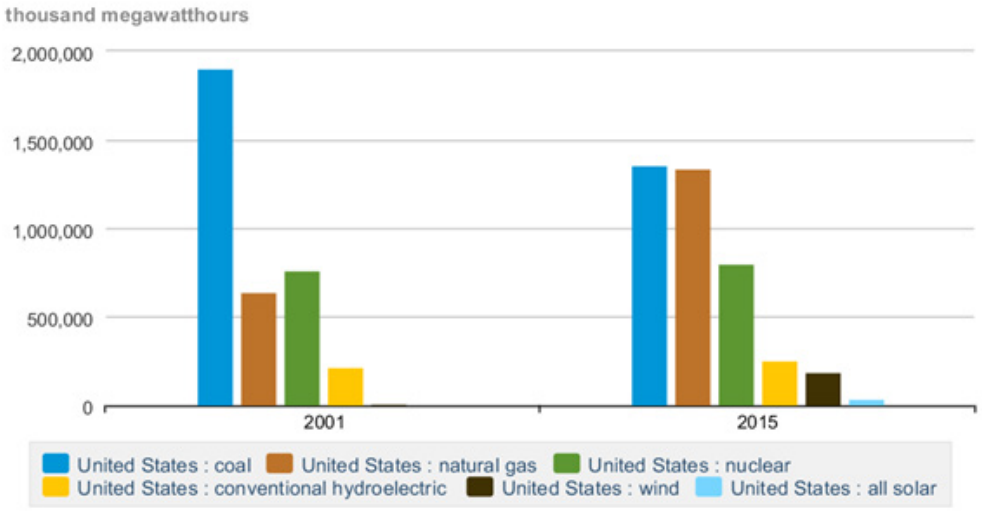
Distributed generation—power generation at the point of consumption—can help keep the lights on during a disaster. In addition, these resources have the potential to lower a utility's peak load, which can improve reliability.[11]

In crafting legislation, however, some lawmakers also used the concept of distributed generation to call for the continued diversification of state energy portfolios (Figure 5). The West Coast—and Hawaii, in particular, where electric rates are higher than in any other state due to dependence on imported fossil fuels for electricity generation—pushed this message by offering incentives to invest in renewables as a means of achieving energy independence. Other states encouraged diversification of the energy supply through coal, natural gas, biomass, offshore wind, nuclear and waste-to-energy.

Key bills from 2015

- **California**—S.B. 350 (enacted) requires an increase in the amount of electricity generated and sold from renewable energy resources in order to strengthen the diversity and resilience of the electrical system.
- **Hawaii**—H.B. 1273 (enacted) authorizes the construction of hydroelectric facilities of not more than

Figure 5. Net Generation for all Sectors, Annual



Data Source: U.S. Energy Information Administration

500 kilowatts on agricultural lands. H.B. 1286 (enacted) encourages energy efficiency, renewable energy and a reduction in state dependence on fossil fuels. S.B. 1050 (enacted) allows utility customers to elect to participate in renewable community energy projects. S.B. 1047 (pending) would authorize bonds to help develop a waste-to-energy plant.

- **New York**—A.B. 107 (pending) would require the development of a statewide shared renewable energy zone map and would provide for the interconnection of shared solar, farm waste, micro-combined heat and power, fuel cell, micro-hydroelectric and wind generation.
- **Ohio**—H.C.R. 9 (enacted) establishes a sustainable energy abundance plan to meet future energy needs, including new nuclear generation technology.
- **Utah**—S.B. 280 (enacted) promotes development of diverse energy resources, including nonrenewable and renewable resources, nuclear and alternative transportation fuels.
- **Vermont**—H.B. 40 (enacted) creates a program for electric utilities, sets certain requirements for renewable energy or renewable energy credits, and encourages distributed generation.
- **Virginia**—S.B. 1349 (enacted) requires that electric utilities file integrated resource plans in order to diversify their generation supply portfolio.
- **Washington**—Three bills—H.B. 1897 (enacted), S.B. 5024 (enacted), and H.B. 1912 (pending)—extend or would extend incentives for renewable energy and encourage or would encourage development of clean energy. S.B. 5113 (pending) would support small modular reactor siting and development.

In addition, at least nine bills sought to study or develop energy storage. Energy storage has been viewed as another form of redundancy in the grid, with the potential to provide backup power in the event of an outage by storing electricity in batteries. Several states also have sought to explore the possibility of vehicle-to-grid technologies, which would allow electric vehicles to supply backup power to the electric grid in the event of an energy shortfall or outage. Another seven bills addressed alternative fuels.

Key bills from 2015

- **California**—Three bills (all pending) would address energy storage and require the Public Utilities Commission to study energy storage and the role that electric vehicles could play. Three bills (all failed) would promote alternative fuels by adopting a renewable gas standard or providing support to in-state production of alternative fuels.
- **Connecticut**—S.B. 1078 (enacted) requires the state to seek proposals that provide for passive demand response, including energy storage solutions. Two other bills addressed energy storage and the role of electric vehicles.
- **Hawaii**—S.B. 349 (vetoed) would have established a renewable fuels production tax credit to encourage local production of renewable fuels.
- **Massachusetts**—H.B. 2852 and S.B. 1770 (both pending) would offer tax exemptions and other promotions to encourage community shared solar systems and energy storage programs.
- **Minnesota**—H.B. 1320 (pending) would establish a rebate plan to encourage purchase of energy storage

systems that can help with load management. H.B. 2081 and S.B. 1948 (both pending) would require public utilities to file plans that promote electric vehicles and would require a pilot program for vehicle-to-grid technology.

- **Oregon**—H.B. 2193 (enacted) directs electric companies to procure energy storage systems, allowing them to recover all costs through electrical rates.

Comprehensive Plans and Utilities

The electrical grid is undergoing rapid transformations, and states are playing a major role in that development. There is momentum across the country to modernize the grid. This often refers to the promotion of smart grid technologies, which allow customers and utilities to use energy more effectively and efficiently. In 2015, legislators in six states introduced at least 12 bills outlining comprehensive plans to modernize the electrical grid and make it more reliable through a combination of policies that promote energy efficiency, demand-response programs and on-site generation.

Key bills from 2015

- **California**—S.B. 83 (enacted) requires public utilities to enact net metering tariffs to enhance diversification and reliability of the state's energy resources and to encourage private investment in renewable energy and energy efficiency.
- **Illinois**—S.B. 1879 (pending) would establish a renewable energy fund, photovoltaic requirements, voltage optimization, demand-response, net metering, microgrids and low-income programs.
- **Minnesota**—H.B. 3a (enacted) requires that utilities issue reports every other year that describe transmission and distribution plans that outline investments considered necessary to modernize and enhance the reliability of the grid, including improvements to physical and cybersecurity, net metering, control technologies, energy storage, demand-response and microgrids.
- **New Hampshire**—H.B. 362 (enacted) requires each utility to file a resource plan in which it forecasts future demand; assesses energy management and supply options; and assesses distribution and transmission requirements, including benefits and costs of smart grid

technologies and other programs to ensure a more reliable and resilient grid. H.B. 614 (enacted) implements the goals of the 10-Year Energy Strategy, which include grid modernization.

- **New York**—A.B. 2371 (pending) would address aging infrastructure, establish a grid modernization program and create the Smart Grid Advisory Council.
- **Rhode Island**—S.B. 2439 and H.B. 7991 (both enacted) establish a framework for the state to coordinate with other New England states to make strategic investments in resources and infrastructure.

Another 21 bills introduced in 2015 required specific grid updates to improve system reliability. These actions include requiring utilities to file plans for the acquisition of smart grid technologies, requiring public utilities commissions to consider changes to the regulatory structure in light of distributed generation, and authorizing the development of regional organizations to improve reliability and efficiency.

Key bills from 2015

- **California**—A.B. 793 (enacted) requires weatherization and electrical and gas corporations to develop programs for acquisition of certain technology. S.B. 155 (pending) would authorize the independent system operator to enter into a multistate entity that would enhance the reliability and supply of the electrical grid.
- **Colorado**—S.B. 120 (pending) relates to a requirement that each provider of retail electric service in Colorado develop an electric grid modernization plan.
- **Illinois**—H.B. 3975 (enacted) provides for upgrades and modernizes the state's transmission and distribution infrastructure, including smart grid electric system upgrades.
- **Minnesota**—H.B. 2032 (pending) would require a study of the feasibility of creating a state public power authority with the power to construct and operate electric generation and transmission facilities.
- **Virginia**—H.B. 2237 and H.B. 1334 (both enacted) allow utilities to set rate increases to recover the costs of installing solar energy facilities and making improvements to the distribution system.
- **Washington**—H.B. 1895 (pending) would require electrical companies to file a smart grid technology report.

Cybersecurity

Since the U.S. Department of Homeland Security's Industrial Control System Cyber Emergency Response Team (ICS-CERT) began publishing reports in 2011, the energy sector has been the most targeted sub-sector of all U.S. critical infrastructure.[12] The energy sector has gone from being the target of nearly 60 percent of reported incidents in 2013 down to 16 percent in 2015,[13] when attackers turned their attention to industrial control system vendors.[14] A successful attack on a vendor could compromise vendor devices and provide access to power sector industrial control systems that regulate power management. This exemplifies how cyberthreats are evolving, requiring diligent surveillance and constant adaptation. More than half of all reported incidents were advanced persistent threats or sophisticated actors, according to ICS-CERT.

The nation's energy infrastructure faces a new range of threats as grid modernization efforts bridge the gap between two very different generations of technologies. "New components will operate in conjunction with legacy equipment that may be several decades old, and provide little to no cyber security controls," according to a report from the Electric Power Research Institute (EPRI).[15] In addition, information technology and operations technology have converged, linking computer systems with physical, equipment-oriented technology.

Concerns exist about what this means for the U.S. grid. Several high-profile incidents have proven that malware and other cyberthreats can result in physical damage to equipment and even service disruptions. However, most of these examples have occurred in areas of the world without the same level of cyberdefenses which have been deployed in the United States. In fact, an ICS-CERT 2015 report notes that, while there continue to be a number of incidents that result from "insufficiently architected networks," there have also been signs of significant improvement, given that nearly 70 percent of reported incidents had no evidence of successful intrusion by attackers. Attackers were almost 20 percent more successful at intruding networks in 2014.[16]

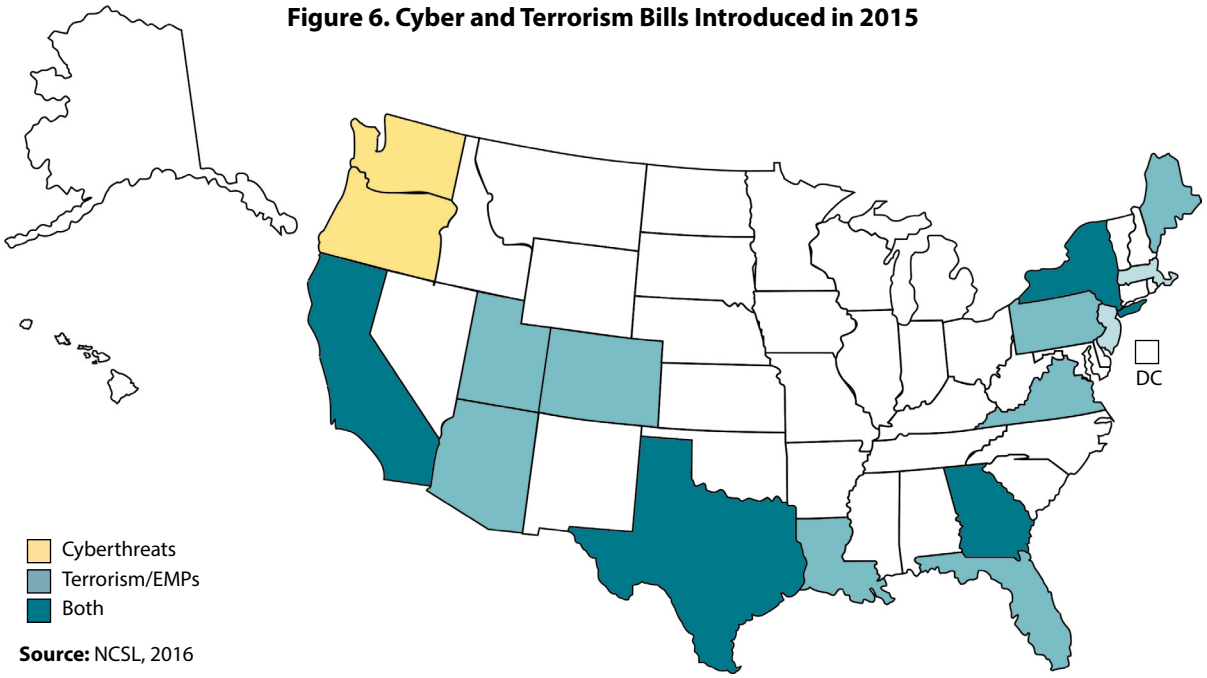
Supervisory control and data acquisition (SCADA) systems are one type of industrial control which are of particular concern. SCADA systems, in use since the 1970s, allow for the remote control of complex system operations over a wide territory. However, these systems were not designed with the Internet—let alone cybersecurity—in mind, and there have been documented incidents in which SCADA systems have been compromised through malware.

It will be decades before legacy equipment is phased out. In the meantime, EPRI suggests that systems be designed and implemented with cybersecurity as a primary concern.[17] "Cyber security must be included in all phases of the system development life cycle, from the design phase through implementation, operations and maintenance," according to another EPRI report.

To address these vulnerabilities, the electric power industry has been coordinating with the North American Electric Reliability Corporation (NERC) and federal agencies such as the National Security Agency (NSA), the Federal Energy Regulatory Commission (FERC), the U.S. Department of Homeland Security and the U.S. Department of Energy. FERC has approved new cybersecurity standards developed by NERC that aim to enhance the grid's protections. These updated standards—Critical Infrastructure Protection Version 5 (CIP V5)—are considered more robust and proactive. Previous versions applied only to utilities of a certain size, but CIP V5 affects the grid at all levels.

Although the federal government plays a significant role in countering these threats, utilities and states are also taking steps to strengthen cyberdefenses. Not only do states participate in NERC-sponsored grid security exercises like GridEx, but many also are exploring ways to address grid vulnerabilities and ensure that state response agencies are prepared. At least 16 bills or resolutions sought to address the issue at the state level in 2015 (Figure 6).

Figure 6. Cyber and Terrorism Bills Introduced in 2015



Source: NCSL, 2016

Key bills from 2015

- **California**—A.B. 853 (pending) would require that utilities use their own employees for work involving computer and other critical systems of nuclear, electrical and gas infrastructure in order to protect the integrity and security of the state's critical infrastructure. A.B. 1172 and A.B. 2200 (both pending) would require the state's Cyber Security Task Force to meet quarterly, and would create the Cyber Security Steering Committee within the governor's Office of Emergency Services.
- **Georgia**—Five bills (all pending) would create committees to address cybersecurity.
- **New York**—A.B. 6130 and S.B. 3407 (both pending) would require formation of a cybersecurity advisory board. A.B. 6133 and S.B. 3405 (both pending) would require a comprehensive review of all cybersecurity services to be performed every five years.
- **Oregon**—H.B. 3394 (pending) would establish a cybersecurity task force.
- **Washington**—H.B. 1468 (pending) would grant the governor authority to proclaim a state of emergency in the event of a cybersecurity incident. H.B. 1470 (pending) would establish a blue-ribbon panel on cybersecurity.

Terrorism

Physical threats to the power grid and other critical infrastructure also concern many lawmakers. At least 15 bills were introduced in 2015—and another four the previous year—aimed at protecting the electrical system against an electromagnetic pulse (EMP) attack. Of these, five states—Colorado, Georgia, New Jersey, New York and Texas—considered legislation that would have created committees to study the vulnerabilities and effects of an EMP attack and to evaluate technologies to address those issues. Meanwhile, three states—Florida, Pennsylvania and Texas—urged federal action to harden the grid against such attacks.

At the same time, at least five bills were introduced that exempted certain detailed information about the grid, utilities and state energy infrastructure from disclosure under the Freedom of Information Act. Four of these bills passed—in Arkansas, California, Kansas and Virginia.

Key bills from 2015

- **Massachusetts**—H.B. 3526 (pending) would require electric companies to develop and implement plans to address the vulnerabilities of the electrical grid to natural and EMPs and other manmade and natural occurrences.
- **New York**—A.B. 6657 and S.B. 2385 (both pending) would empower the state to decide if the sale, lease or operation of any critical infrastructure owned by the state would threaten public security, and creates the Critical Infrastructure Advisory Council.
- **Virginia**—S.B. 1238 (enacted) requires the state Department of Emergency Management to specifically plan for disasters caused by EMPs and geomagnetic disturbances.
- **Utah**—H.J.R. 26 (enacted) requires a study of the steps Utah has taken to protect its electrical grid and to examine work done in other states.

Key bills from 2014

- **Arizona**—S.B. 1476 (enacted) requires the state Department of Emergency and Military Affairs to develop preparedness recommendations in the event of an EMP.
- **Louisiana**—S.R. 169 (adopted) requests the governor's Office of Homeland Security and Emergency Preparedness to study the potential threats and consequences of an EMP.
- **Virginia**—S.J.R. 61 (enacted) directs the Joint Commission on Technology and Science to study the nature and magnitude of potential threats caused by geomagnetic disturbances and EMPs and to recommend strategies to protect infrastructure.

Funding

Lawmakers in five states introduced at least 10 bills to help fund improvements to the state electrical grid that would enhance energy security, reliability and resiliency. Hawaii introduced five of these bills, three of which have been enacted.

Key bills from 2015

- **Hawaii**—H.B. 1513 (enacted) establishes a two-year matching grant pilot program to strengthen local

companies that are conducting renewable energy research and development in order to reduce the state's dependence on fossil fuels. S.B. 359 (enacted) requires that 15 cents of the tax on each barrel of petroleum be deposited into the Energy Security Special Fund, and that 10 cents on every barrel be deposited into the Energy Systems Development Special Fund. S.B. 892 (enacted) appropriates money for resilience and sustainability strategy, including $25 million to improve efficiency, grid operations and resiliency.

- **New York**—A.B. 5883 (pending) would establish the New York State Infrastructure Development Bank, and would appropriate $250 million to support infrastructure improvement projects.
- **Washington**—H.B. 115 (enacted) allocates funds, including $28 million for grants to advance clean energy and enhanced transmission and distribution control systems, and for utility projects that demonstrate smart grid technologies.

Notes

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