Securing the Nation’s Energy Future
2019-2020 State Legislative Action

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Introduction

The past two years have been particularly active for states as they increasingly considered measures to address energy security. In 2019, state legislatures passed at least 76 measures intended to address an array of issues that fall under the broad scope of energy security—a near doubling of numbers seen in the preceding years. The number of states to enact related legislation also increased significantly, with at least 27 states, the District of Columbia and Puerto Rico passing measures.

All of this perhaps makes 2019 an appropriate end to what has been the most destructive decade for natural disasters in United States history. While 2019 presented its own mix of destruction from storms and wildfires, many of the states that were most active legislatively last year were responding to disasters from previous years, such as Hurricane Maria and wildfires in the West.

However, insulating energy systems from nature’s more destructive tendencies is only one aspect of energy security. The topic can encompass everything from protecting infrastructure and enhancing system reliability to ensuring access to fuels and promoting energy independence. For this report, energy security has been organized around several broad themes that include disaster preparedness and response, system resilience and reliability, and infrastructure protection.
State legislatures play an important role in developing policies to minimize risks and enhance energy security, including commissioning studies and providing funding, incentives and mandates, or by imposing requirements on energy companies and state agencies. Over the 2019 and 2020 sessions, state legislatures introduced more than 500 bills and resolutions, with more than 90 measures passing.

In addition to natural disasters, a growing number of states focused considerable attention on cybersecurity of critical infrastructure. At least a dozen states enacted measures to bolster cyber-protections for energy systems over the past two years—nearly twice the number that did so over the previous two years. Energy storage legislation grew by an even greater factor, with three times the number of bills introduced throughout 2019 and 2020 as were introduced over the prior two sessions. While not all of the energy storage bills had a security focus, a number of notable bills did—either through promoting enhanced resiliency at certain facilities or more broadly in support of system reliability.

Finally, it would be remiss to publish this report without a look at the impact that COVID-19 has had on legislative sessions and energy systems. While the 2020 legislative session appeared poised to continue building on the prior year’s work, the impact of COVID-19 halted most of that momentum in mid-March, with at least 26 state legislatures either suspending or adjourning sessions early and most of the ensuing legislation focused on the pandemic. The national response to the pandemic has affected every aspect of modern life, as local- and state-ordered shutdowns have caused schools, offices and factories to close, along with associated losses in jobs and productivity. Throughout all of this, the energy sector has worked to ensure that the lights stay on, homes are heated or cooled, and fuels are available.

The pandemic represents a novel type of disaster for the country and for the energy industry. While the role of state legislatures in the immediate response may be limited for the energy sector, the statutes enacted in previous years provided the foundations for the current response. It seems inevitable that the next few years will find legislators looking at ways to improve upon those foundations for the next emergency.

It is unclear how the pandemic will affect energy security initiatives in the coming years. State budgets are likely to be constrained, which could limit some of the more costly initiatives. However, the work initiated through legislation passed over the last few years should continue to serve as fodder for additional action in the years to come.
Boosting Energy Security Before, During and After Disasters

The 2010s proved to be a devastating decade for natural disasters—both in terms of the economic and societal impacts. Since 1980, the National Oceanic and Atmospheric Administration (NOAA) has tracked disasters where the overall damage costs for an individual event reached or exceeded $1 billion. The U.S. averaged under five of these “billion-dollar” disasters per year from 1980 through 2009. Over the past decade, the nation averaged nearly 12 disasters of that magnitude each year.

Not only are these events more frequent, the cost of each event is higher, even when adjusted for inflation. Total damages over the past five years exceeded $525 billion—an annual average of around $106 billion. By comparison, the average annual cost during the 1980s was just under $13 billion. When looking at the total cost of damages, five of the six most destructive years were in the 2010s.

All of this has taken its toll on U.S. energy systems, leaving policymakers and industry searching for ways to protect energy infrastructure from nature’s more destructive elements, while also focusing on ways to restore service quickly after an event has passed. State legislatures have actively addressed these issues—both on the front end of disasters by providing incentives for investments that harden infrastructure, and on the back end by facilitating a rapid response effort.

Restoring service has been a particular area of focus in recent years. Utility mutual assistance is fundamental to restoring power after a damaging event. These agreements between utilities allow crews from neighboring utilities to come—sometimes traveling from out of state—and assist in restoration work. State legislatures can also play a role, with at least 24 states implementing business rapid response laws. These statutes temporarily remove some licensing and tax requirements for out-of-state businesses and employees engaged in emergency response and restoration work. Other states have proposed or enacted laws that would add transparency to how utilities bill customers during outages or force utilities to compensate customers whose service isn’t restored within a certain amount of time after an event.

2019 Billion-dollar Weather and Climate Disasters

By approximate location.
Wildfires

Some states focused on mitigating the impacts of specific events, including the damage wrought by wildfires in the western U.S. The wildfire devastation from the past few years lent an urgency to last year’s legislative work. In particular, the deadly 2017 and 2018 wildfire seasons left California in need of meaningful action, and the state legislature has been working to address long-standing issues at a rapid pace.

The California Legislature passed nine bills in 2019 addressing everything from fire prevention practices to utility communication requirements and emergency management.

Three new laws reorganize state government by creating, consolidating or defining wildfire-specific mandates for planning and disaster management agencies, including the Catastrophe Response Council (AB 111), the California Wildfire Safety Advisory Board (AB 1054) and the Natural Resources Agency (AB 38).

Other bills heightened oversight of vegetation management plans and established robust wildfire mitigation planning requirements for electric utilities. They also expanded state oversight and communication requirements for “deenergization” events—when utilities cut off power to portions of the grid to avoid sparking a fire during periods of elevated fire risk. A number of bills on “undergrounding”—placing power lines underground—and backup power will be referenced in later sections of this report.

California wasn’t alone in working to address wildfires. The Nevada Legislature enacted new comprehensive wildfire mitigation planning requirements for its electric sector and Montana commissioned a study on the state’s preparedness. Washington began discussing how to fund proactive wildfire prevention and mitigation work with the introduction of HB 2413. The bill would have added a surcharge to home and auto insurance policies in the state that would be used to finance a Wildfire Prevention and Preparedness Fund. The proposed charges would have raised around $63 million each year for efforts to prevent and fight wildfires, although it ultimately failed due to the session ending.

WILDFIRE BILLS OF INTEREST

- **California SB 247** (enacted, 2019) requires an electrical corporation to notify the public utilities commission’s (PUC) Wildfire Safety Division after it completes all or a substantial portion of the vegetation management requirements in its wildfire mitigation plan. The Wildfire Safety Division must audit the work performed and specify any failure to comply with the requirements.

- **California SB 560** (enacted, 2019) requires electric utilities to establish procedures to notify all public safety offices, critical first responders, health care facilities and operators of telecommunications infrastructure within the footprint of a potential deenergization event.

- **Nevada SB 329** (enacted, 2019) requires an electric utility to submit a natural disaster protection plan to the PUC every three years for approval to recover costs related to plan development and implementation. The plan must identify areas subject to heightened threat of fires or other natural disasters, approaches for cost-effective mitigation, proposed protocols for deenergizing distribution lines and the utility’s ability to implement the plan.

- **Utah HB 66** (enacted, 2020) amends provisions related to wildfire planning and cost recovery, granting the Public Service Commission authority to establish procedures related to wildfire planning and requiring utilities and electric cooperatives to submit wildfire protection plans for the commission’s approval.
Grid Hardening

State legislatures in regions that have been hard-hit by natural disasters in recent years have consistently worked to harden infrastructure in preparation for the next hurricane, tornado, flood or wildfire. These measures often encourage utilities to invest in upgrades to existing infrastructure—or to incorporate grid-hardening measures in plans to replace infrastructure. Critically, these measures often provide utilities with a way to finance projects.

Often these measures seek to mitigate risks from certain threats, like substation flood prevention projects in coastal areas or installing concrete utility poles in regions that experience strong winds. In some cases, these projects include undergrounding electric lines in areas with the highest risk factors—whether that’s due to hurricane-force winds that consistently knock out power or to prevent lines from sparking the next dangerous blaze in wildfire country.

While California and Florida passed important grid-hardening legislation in 2019, Virginia worked diligently to pass a variety of energy-related measures early in 2020, including two dealing with undergrounding electric lines. Illinois and New Jersey have also seen bills in the past two years that would require certain electric lines to be undergrounded, while Massachusetts, Missouri, New Jersey and Texas all considered bills that would have sought to enhance electric system resilience.

GRID HARDENING BILLS OF INTEREST

- **California SB 70** (enacted, 2019) requires each electrical corporation’s wildfire mitigation plan to include a description of where and how the corporation considered undergrounding electrical distribution lines within service territories identified to have the highest wildfire risk.

- **Florida SB 796** (enacted, 2019) requires utilities to develop transmission and distribution system storm protection plans, including substantial undergrounding and flood mitigation. These plans must be approved by the Florida PUC and updated every three years. The commission is required to determine the utility’s prudently incurred costs under the plan annually and allow the utility to recover those costs through a storm protection plan cost recovery charge on customer bills.

- **Hawaii SB 609** (pending, 2019) would establish a Homeland Security and Resiliency Council to identify grid and infrastructure needs and provide recommendations to enhance resiliency.

- **Virginia HB 576** (enacted, 2020) makes stipulations on two electric transmission line projects to pilot undergrounding in the state.

- **Virginia HB 1030** (enacted, 2020) establishes that, if the Virginia Corporation Commission approves an underground transmission line project under a pilot program, future projects in the same right of way should also be placed underground. Whether future projects are required to be undergrounded will be determined based on technical feasibility and community support, while the estimated cost of placing the line underground must be less than 2.5 times the cost of placing it overhead.
**What Are Microgrids?**

The U.S. Department of Energy defines a microgrid as a group of interconnected loads and distributed energy resources that acts as a single controllable entity. It is able to run in harmony with the grid or to disconnect and run isolated from the grid in “island mode.”

This image shows four potential microgrids at different points on a distribution system, along with their interconnection points with the grid.

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![Image of microgrids](source: U.S. Department of Energy)

**Microgrids and Backup Power**

One of the major tenets of energy security and resiliency is access to power—even when portions of the grid are down. While grid-hardening measures can significantly reduce the severity of damage to infrastructure, outages will still occur. Microgrids and backup generators can keep critical loads powered and operational—whether at an emergency shelter, a health care facility or an individual home—until normal service is restored. However, the differences between microgrids and backup generators are substantial. Microgrids are much more complex systems and require significant planning, financing and regulatory consideration, and many states have not standardized legal and regulatory frameworks to facilitate their development.

One recent trend has been to include backup power and energy storage systems in state property assessed clean energy (PACE) programs. The Connecticut legislature included microgrids in its commercial PACE program several years ago, and since then Massachusetts and New Jersey have each considered similar measures. Several states have also considered including energy storage projects in commercial PACE programs, with Illinois doing so with the passage of HB 3501 in 2019.

Hawaii, with the passage of HB 2110 in 2018, established a microgrid services tariff to encourage and facilitate the use of microgrids, believing microgrids will build energy resiliency in communities, thereby increasing public safety and security. California and Puerto Rico have also moved to offer clarity to microgrid developers by standardizing service tariffs.

States have also considered backup power requirements for certain facilities and broad planning initiatives to identify areas and facilities where backup power would be particularly beneficial.
MICROGRID BILLS OF INTEREST

- **California SB 774** (pending, 2019) would require electric utilities to collaborate with municipalities to identify locations where backup power or microgrids would be most beneficial and would authorize cost-recovery mechanisms under certain conditions.

- **California SB 1215** (pending, 2020) would require the Office of Emergency Services to create a database of critical facilities and infrastructure, including identifying facilities in high fire-threat districts. It would also require electric corporations to work with local governments to identify critical circuits and beneficial microgrid projects in order to enhance public safety, protect vulnerable populations and individuals, and improve resiliency in response to deenergization events.

- **Hawaii HB 856** (pending, 2019) would require the counties, in coordination with the Department of Business, Economic Development and Tourism, to identify critical infrastructure locations and develop a plan to ensure those locations have adequate supplies of electricity during and after a natural disaster or state of emergency.

- **Massachusetts HB 3941** (enacted, 2019) creates a matching grant program and offers technical assistance for cities and towns to develop microgrids.

- **New Hampshire HB 183** (vetoed, 2019) would have established a committee to study the applications of microgrids in the state and recommend statutory changes necessary to allow for microgrids in electrical supply.

- **New York SB 5114** (pending, 2019) would establish a state microgrids grant program. It would task the New York State Energy Research and Development Authority with identifying communities that would benefit from energy resiliency provided by a microgrid, as demonstrated by prior outage history due to weather or other causes.

BACKUP POWER BILLS OF INTEREST

- **California SB 167** (enacted, 2019) requires each electrical corporation to identify ways to mitigate the public safety effects of deenergization events, especially on customers who use medically essential equipment. It also authorizes electrical corporations to deploy backup electrical resources or provide financial assistance for backup electrical resources to those customers.

- **California SB 1020** (pending, 2020) would allow a tax credit through 2021 to any taxpayer who purchases a backup power generator for use in a residence or commercial property located in a high fire-threat district.

- **Hawaii HB 1583** (pending, 2019) would authorize the Department of Education to evaluate the feasibility and perform a cost-benefit analysis of renewable-powered backup energy systems for schools.

- **Hawaii HB 2408** (pending, 2020) would require statewide inventories of hospitals, dialysis centers, medical facilities and satellite phones, along with generators that could provide backup power for disaster and emergency preparedness and emergency response infrastructure.

- **Puerto Rico SB 657** (enacted, 2020) requires group homes, day care sites and elderly care facilities to have sufficient water reserves and a backup electric generator in order to be licensed.

- **Virginia SB 1077** (enacted) requires licensed assisted living facilities with six or more residents to have a temporary emergency electrical power source available for use on-site in the event of power outages.

- **Virginia SB 350** (enacted, 2020) establishes the Emergency Shelters Upgrade Assistance Grant Fund administered by the Department of Emergency Management to provide matching funds to localities to install, maintain or repair infrastructure for backup energy generation in emergency shelters.
Energy Storage and Electric Vehicles

State legislative interest in energy storage continues to grow at an almost exponential rate. Energy storage refers broadly to a suite of technologies that can take electricity and store its energy for use at a later time. While a variety of new technologies exist to provide this service, lithium-ion batteries have made up more than 90% of new storage capacity deployed over the past several years and it appears poised to continue that run into the new decade. The ability for energy storage projects to help balance the grid, absorbing excess electricity when it’s cheaper and releasing it during periods of high demand, has made it an attractive resource to both utilities and legislators. In all, state legislators introduced about 215 measures related to energy storage over the 2019 and 2020 legislative sessions, with nearly 30 states passing over 40 of those bills into law.

The majority of bills expand preexisting policies to include energy storage. Arkansas (SB 145) and Maine (SB 565) enacted measures to include energy storage in existing net metering programs and Oregon (HB 2496) added energy storage to its definition of “green energy technology.” Illinois added energy storage to its list of projects that can be included in commercial PACE programs, while New Hampshire (HB 464) and Oregon (HB 2618) established grants and property tax exemptions for storage systems paired with renewables.

In many ways, these bills included energy storage as an additional clean energy source—not necessarily in the context of resiliency or backup power. However, there were several examples where states looked to provide incentivizes for storage for its resilient attributes, such as providing backup power.

ENERGY STORAGE BILLS OF INTEREST

- **California AB 1144** (enacted, 2019) requires the PUC to allocate a certain percentage of the Self-Generation Incentive Program to community storage pilot projects, with a particular focus on high fire-threat districts, in support of resiliency.

- **Utah HB 411** (enacted, 2019) includes energy storage in the state’s Community Renewable Energy Act, which expands community solar to open the program to a broader array of projects.

- **Massachusetts HB 2862** (pending, 2020) would require utilities to solicit energy storage specifically to enhance the reliability of renewable resources.
Another topic of growing interest among state legislatures is electric vehicle-to-grid technologies, which seek to establish a more symbiotic relationship between plug-in electric vehicles and the electric grid. The idea is that electric vehicles (EVs) are little more than mobile batteries—a form of distributed generation, much like rooftop solar panels. In aggregate, they could represent a significant resource to grid operators—either as load or generation, depending on what’s needed. Under the right conditions, this aggregate potential from EVs could offer the same resiliency and reliability benefits as stationary storage.

VEHICLE-TO-GRID BILLS OF INTEREST

- **California SB 676 (enacted, 2019)** requires the PUC to establish strategies and quantifiable metrics to maximize feasible and cost-effective EV-to-grid integration, and to reference the integration strategies in relevant proceedings that address transportation electrification.

- **Colorado SB 77 (enacted, 2019)** amends state law to facilitate alternative vehicle-related infrastructure, including changes to how the PUC should consider utility petitions and rate design mechanisms. It also requires that EV investments seek to minimize costs and maximize benefits, including “rate designs, or programs that encourage vehicle charging that supports the operation of the electric grid.”

- **Delaware SB 12 (enacted, 2019)** facilitates EV-to-grid integration by adopting the Society of Automotive Engineers’ industrial safety standard, which sets safety requirements for electric vehicles that provide power from their batteries back to the electric grid.

- **Hawaii HB 1585 (enacted, 2019)** requires the PUC to provide rebates to persons who install a new or update an existing EV charging system. The law specifies that rebates should be prioritized to enhance broader public clean energy and grid resiliency goals, in addition to several other priorities. This would support deployment of electric vehicle charging systems that can regulate their time of use, be networked and co-optimized with other electric vehicle charging systems, and otherwise provide grid services or other benefits to the utility and electric grid.

- **Vermont HB 529 (enacted, 2019)** requires the PUC to report to the legislature on recommendations regarding electric vehicle charging tariffs, particularly tariff design such as time-of-day and off-peak rates, and utility control of charging to reduce potential adverse effects.
Grid Planning and Modernization

Over the past two years, many state legislatures have undertaken broad grid modernization and planning initiatives with the potential to reshape the energy system in a way that could enhance reliability, resiliency and security. These initiatives can help utilities assess damage and monitor grid conditions in real time, recover faster in the aftermath of an emergency, integrate a range of distributed energy resources and allow more efficient energy usage.

These plans often chart a course for a state’s energy future, with the potential to shape the coming decade—including the preferred energy mix and how to get there. Consequently, many states have increasingly prioritized distributed energy resources and a more diverse, flexible and cleaner energy mix. However, a number of states have expressed concern over perceived threats to reliability with these changing dynamics. In some cases, states have moved to protect large, legacy resources—either by slowing modernization efforts or through direct resource requirements.

GRID PLANNING BILLS OF INTEREST

- **Indiana HB 1470** (enacted, 2019) provides greater financial flexibility to its utilities by allowing them to recover costs on transmission and distribution system transformation and modernization projects that are outlined and approved under long-term plans by state regulators. Under certain conditions, the bill eliminates the need for utilities to seek state regulatory approval to raise rates to fund the projects.
- **Indiana HB 1414** (enacted, 2020) increases regulatory requirements on utilities that intend to retire legacy coal resources until a grid planning report from the state legislature can be finalized.
- **Montana HJR 12** (adopted, 2019) requests an interim study to assess the state’s ability to defend its infrastructure against natural and man-made physical threats—including, among other things, wildfires—and develop guidelines for infrastructure protection. The study also will investigate and consider new advanced transmission technologies that offer performance benefits when replacing aged transmission infrastructure.
- **New Mexico HB 233** (enacted, 2020) requires the Energy, Minerals, and Natural Resources Department to develop a road map for grid modernization, establishes a Grid Modernization Grant Program, and enables utilities to apply for cost-recovery for transmission and distribution infrastructure modernization projects.
- **Puerto Rico SB 1121** (enacted, 2019) establishes the policy parameters for creating a resilient, reliable and robust energy system with fair and reasonable rates for all classes of consumers. The parameters also call for enabling greater customer participation and generation, and facilitating the development and interconnection of distributed generation and micro networks.
- **Virginia HB 714** (enacted, 2020) codifies a state energy plan that adopts findings on the urgency of climate change and the need to decarbonize the energy sector, including a net-zero carbon emissions target by 2050. The plan establishes the importance of ensuring sufficient infrastructure to support widespread deployment of distributed resources and maintain reliability in the event of a disruption, along with support for distributed resources with the potential to maintain service to critical facilities during outages.
- **Washington SB 6135** (enacted, 2020) requires that representatives of investor-owned utilities, regional planning organizations, transmission operators and other stakeholders convene to discuss system reliability and resource adequacy as the state transitions to a new resource mix.
- **Wyoming HB 200** (enacted, 2020) establishes a low-carbon electricity standard that requires utilities to generate a certain percentage of their power from “dispatchable and reliable low-carbon” resources. The bill establishes a baseline for reliability and requires reliability monitoring and reporting. It eliminates cost-recovery and earnings on construction of new resources that replace coal-fired power plants after 2023, and authorizes financial incentives to utilities that retrofit existing coal plants to use carbon capture and sequestration (CCS) technologies.

(For a more detailed look at state grid modernization initiatives, visit NCSL’s report, “Modernizing the Electric Grid: State Role and Policy Options.”)
Cybersecurity

In many ways, grid modernization efforts have made the cybersecurity of the energy sector an even more pressing issue, as new technologies bridge the gap between physical, operational technology and information technology systems used to operate the grid. Previously, these two systems were almost entirely isolated from one another, but that separation has grown narrower as utilities and system operators incorporate new technologies across the grid.

These new technologies offer significant improvements in grid operations, efficient resource dispatch and system awareness, but they also increase the attack surface through which malicious actors can probe for entry in order to compromise larger systems. Cyberattackers are consistently testing energy systems and critical infrastructure operators. In March 2019, a cyberattack temporarily created blind spots between a control center and a number of remote generation sites in the western U.S. by exploiting a vulnerability in a technology vendor’s firewall.

The Trump administration issued an executive order in May 2020 declaring that threats to the bulk-power system (BPS) by foreign adversaries constituted a national emergency. The order prohibits the acquisition, transfer or installation of BPS electric equipment in which foreign adversaries have an interest or jurisdictional oversight.

The issue is further complicated by the nature of U.S. energy infrastructure, which is owned by thousands of private and public entities operating under a variety of regulatory jurisdictions and business models. While federal regulators have established mandatory cybersecurity standards for operators of the bulk power grid, large portions of the distribution grid and the network of natural gas and petroleum pipelines either fall outside federal jurisdiction or are subject only to voluntary standards.

State policymakers are well positioned to address a number of these cybersecurity vulnerabilities because electric and natural gas distribution systems largely fall under state regulatory jurisdiction and municipal or cooperative governance—all of which ultimately answer to state law. This gives state legislators the opportunity to take on a leading role in establishing policies to bolster cyber-protections.

Over the past two years, at least 18 states have considered about 60 measures intended to address the cybersecurity of the electric grid and other critical infrastructure. Of those, at least 12 states passed more than a dozen measures. Most state action in this area has fallen into the following categories: establishing state-level cybersecurity task forces and committees, establishing cybersecurity standards and reporting requirements, expanding state open records exemptions to include cyber vulnerabilities, and directing and authorizing governors and state agencies to take certain actions to prepare for and respond to cyber
emergencies.

State legislatures have considered several other initiatives, including adding cyber-related offenses to the criminal code, financing cybersecurity workforce development programs and establishing cybersecurity response units that would be mobilized in the event of a disaster.

CYBERSECURITY BILLS OF INTEREST

- **Alaska SB 123** (enacted, 2020) establishes reliability requirements for interconnected electric utilities, including participation in a reliability organization for owners of transmission lines, and cybersecurity protections.

- **Arkansas SB 632** (enacted, 2019) authorizes the state Economic Development Commission to create a cyber initiative to mitigate cyberrisks by increasing education about threats and defense, providing threat assessments to private and public sectors, including the energy sector, and fostering the growth of cybersecurity technology.

- **Colorado SB 236** (enacted, 2020) requires utilities to create a distribution system plan that includes a high-level summary of their planning process for addressing cyber and physical security risks. Confidential, proprietary or otherwise compromising information that could decrease the utility’s ability to prevent, mitigate or respond to a potential cyber, physical or weather disruption is not required to be included in the report.

- **Kentucky SB 55** (enacted, 2020) creates a Blockchain Technology Working Group to evaluate the feasibility and efficacy of using blockchain technology to enhance the security and increase protection of the state’s critical infrastructure, including the electric utility grid, natural gas pipelines, drinking water supply and delivery, wastewater, telecommunications and emergency services.

- **Nebraska LB 16** (enacted, 2019) exempts records relating to the physical or cybersecurity of critical energy infrastructure from being disclosed, unless public disclosure has already been made in an open court, open administrative proceeding or open meeting.

- **Texas SB 475** (enacted, 2019) creates the Electric Grid Security Council to mitigate the risk of cyber and physical attacks on the state’s electric system. The council is tasked with developing and communicating “best security practices” to the electric industry, developing educational programs to promote workforce development in these areas, and collaborating with relevant stakeholders to prepare for events that could threaten grid security.

- **Texas SB 936** (enacted, 2019) authorizes the state utility commission to contract with an entity to run a Cybersecurity Monitor Program to oversee and work with the state’s electric sector. The monitor is expected to meet regularly with utilities that operate systems at 60 kilovolts or higher to discuss emerging threats, best practices and training opportunities. The monitor also will review utility self-assessments and keep the utility commission updated on the electric sector’s cybersecurity preparedness.

- **Washington HB 1126** (enacted, 2019) requires any distributed energy resources planning process in which an electric utility engages to include a high-level discussion of how the utility is adapting cybersecurity and data privacy practices to the changing distribution system.

(For a more detailed discussion of the state legislative role in addressing the cybersecurity of the electric grid and energy systems, visit NCSL’s resource, “Cybersecurity and the Electric Grid: The State Role in Protecting Critical Infrastructure.”)
Physical Infrastructure Security

While states continue to discuss the physical security of energy systems and the threat of terrorism to critical infrastructure, those concerns have perhaps taken a back seat to some of the more pressing issues discussed earlier in this report, such as grid hardening against natural disasters and cybersecurity. Similarly, only a few bills addressed the subject of electromagnetic pulses (EMPs)—intense bursts of electromagnetic energy originating from solar flares or the detonation of nuclear weapons with the potential to damage grid infrastructure.

That’s not to say state legislatures haven’t been active in this area. The clear trend in physical infrastructure protection among state legislatures is demonstrated by the passage of more than a dozen laws over the past several years that aim to protect critical infrastructure from trespass, vandalism and otherwise unlawful entry that might impede operations or damage facilities.

Protecting Energy Infrastructure

State laws that either create crimes or enhance the penalties related to unlawful entry of infrastructure facilities since 2018.

Since 2018, at least 13 states—Kentucky, Louisiana, Indiana, Iowa, Mississippi, Missouri, North Dakota, Oklahoma, South Dakota, Tennessee, Texas, Virginia and West Virginia—have passed laws that either create crimes related to unlawful entry on critical infrastructure facilities or enhance the penalties associated with those offenses. The most recent examples include:

- **Kentucky HB 44** (enacted, 2020) changes the definition of key infrastructure assets to specifically include natural gas or petroleum pipelines and clarifies that tampering with, impeding or inhibiting operations of a key infrastructure asset is an offense of criminal mischief in the first degree.
- **Mississippi HB 1243** (enacted, 2020) defines and creates misdemeanor offenses for impeding critical infrastructure and trespassing on critical infrastructure facilities.
- **South Dakota SB 151** (enacted, 2020) revises certain crimes to include trespassing on or damaging critical infrastructure.
Virginia HB 995 (enacted, 2020) increases the penalty for damage to or theft of certain property, including electric and gas utility property.

West Virginia HB 4615 (enacted, 2020) establishes the Critical Infrastructure Protection Act. It creates a criminal offense and associated penalties for trespassing on property containing a critical infrastructure facility, including with intent to interrupt the lawful operations of the facility, and causing willful damage to a critical infrastructure facility.

Another eight states—Alabama, Idaho, Illinois, Minnesota, New York, Pennsylvania, Virginia and Wyoming—considered similar measures over the past two years.

These bills have not been without controversy, with groups claiming they amount to anti-protest measures. While a number of the recently passed bills include statements saying the laws aren’t intended to target protesters or limit civil demonstrations, a number of groups claim they have created a chilling effect on their ability to organize civil demonstrations against new and proposed projects.

Several states also enacted measures to protect utility workers, utility equipment and study EMPs.

OTHER BILLS OF INTEREST

Utah HJR 14 (adopted, 2019) encourages Utah’s state and congressional delegations to continue supporting legislation and practices that enhance electrical grid security against natural, accidental or intentional occurrences, including disruption from electromagnetic pulses, that could potentially interrupt reliable electricity services.

Washington HB 1380 (enacted, 2019) adds assault against utility workers in performance of their official duties to the criminal code.

West Virginia SCR 25 (adopted, 2020) requests a study on the impact of a future EMP catastrophe on West Virginia.
COVID-19

While several states started out the year with decisive action on energy issues, it seems inevitable that the 2020 sessions will be defined by the coronavirus. The sudden onset of the COVID-19 pandemic hit the U.S. hard in March and within a month, 43 states had issued stay-at-home orders and closed non-essential businesses mostly through governors’ orders—a move that required states to clarify what was essential. Early on, the U.S. Department of Homeland Security (DHS) issued guidance on classifying critical infrastructure workers as essential.

Eventually, each of the 43 states to close non-essential businesses included the energy sector as essential. Of those, 19 states adopted the U.S. Department of Homeland Security’s guidance on essential critical infrastructure workers, which breaks energy into three subsectors: electricity, natural gas and petroleum. The remaining 24 states developed their own definitions, though most of these still follow the general scope of the federal guidance.

The inclusion of the energy workforce is important to ensuring that these vital services continue to fuel the economy and power people’s homes and hospitals during emergencies. The initial uncertainty over which workers were included in each of the various executive orders was cause enough for the energy industry and federal representatives to call broadly for the inclusion of energy sector workers. It also initiated discussion over whether changes to state emergency planning could help make future responses more streamlined and predictable.

The focus has been primarily on lifeline functions—designated by the federal government as energy, transportation, water and communications—which are considered so critical that their disruption would adversely affect critical infrastructure across a variety of sectors. These functions are considered essential across any imaginable emergency. To that end, the question is whether state legislatures should consider defining these “essential services” in state emergency response statutes, rather than relying on one-off declarations each time an emergency is declared.

As states assess their respective pandemic responses, it seems likely that state legislatures will begin considering changes to state law that could inform a more cohesive response to future emergencies.

(For more detailed information on state essential workforce designations in response to COVID-19, visit NCSL’s resource, “COVID-19: Essential Workers in the States.”)

Conclusion

The past two years appear to be an inflection point for energy security, as states considered ways to enhance access, increase reliability and harden critical energy infrastructure. State legislatures are increasingly passing energy security bills, even those that require significant funding to mitigate risks, in light of the economic and societal toll from repeated disasters. These issues, coupled with the need for significant grid upgrades over the coming decade, led to transformative action by states in 2019 and into the early months of the 2020 legislative sessions.

It is still too early to evaluate how drastically COVID-19 will divert legislative momentum in this policy area in the coming years. However, it seems likely that states will ultimately build on the work outlined in this report as the nation emerges from the pandemic and states return to the task of building a reliable and secure energy system that supports broader access and economic prosperity.
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