2021 Legislative Energy Trends

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Introduction

Although 2021 was characterized by the continuing global pandemic and its associated impacts on individuals and the economy, energy policy discussions across state legislatures continued to address the highest energy-related priorities in each state. The issues included reducing emissions and promoting clean energy, supporting existing energy production and electricity generation and managing the anticipated electrification of the vehicle fleet. State legislatures considered more than 4,600 energy-related measures in 2021 covering a wide range of policies, with approximately 15% of the introduced bills ultimately enacted. The many energy-related bills considered this legislative session indicate the direction in which state energy policies are headed.

In 2021, state legislatures acted on a variety energy issues. Several states enacted significant legislation related to reducing greenhouse gas emissions and supporting the growth of clean energy. States also continued to consider how to address the impacts of the energy transition on disadvantaged communities and communities that have relied on fossil fuel production. Transportation electrification continues to be an area of active policymaking, with states both enacting incentives to purchase vehicles and build out charging infrastructure and considering ways to address the long-term decline in transportation funding generated by fuel taxes. Workforce development continued to be a critical issue as the energy sector modernizes and manages the energy transition. The impacts of the COVID-19 pandemic continued to affect every sector of society and the economy in 2021, although legislative action related to the pandemic’s impact on the energy sector waned relative to 2020.

As states begin their 2022 legislative sessions, lawmakers are filing bills that continue the energy trends of 2021 and, in some cases, reintroducing energy measures that failed to be enacted in the last legislative session. One outstanding question legislatures will face is how, if at all, to engage on issues that will be transformed by the Federal Infrastructure Investment and Jobs Act (H.R. 3684) which was signed into law on Nov. 15, 2021. This bill included several provisions that will impact the energy sector, including $6 billion to help maintain the country’s fleet of existing nuclear reactors, $13 billion over five years for grants to improve the resiliency to of the electricity grid, along with other investments. As federal agencies begin to implement these provisions, state legislatures will be faced with ensuring their states are well-placed to facilitate and prioritize these investments.

This white paper examines state legislative action in 2021, highlighting trends in state energy policy and identifying topics likely to take priority in 2022 and beyond.

Climate Change & Emissions

Legislation to address climate change and reduce emissions from the energy sector continues to be considered among state legislatures. Most states already have some type of legislation addressing climate change or emissions on the books. In 2021, 20 states, Washington, D.C., and Puerto Rico enacted more than 100 bills that addressed emissions reductions or the impacts of climate change.

In addition to legislation focused on reducing emissions, many states also considered legislation specifically targeted at addressing the im-
pacts of climate change. Rising sea levels, wildfires in the West, hurricanes in the Gulf, extreme weather events in Texas and Kentucky, and severe drought throughout the West, have led some states to consider how a changing climate impacts the energy sector and vice-versa. Carbon capture and sequestration (CCS) technological advancements prompted some states to adopt legislation that either explored or established programs related to CCS.

EMISSIONS REDUCTION LEGISLATION

A few states passed broad emissions reduction legislation in 2021 to reduce emissions or promote a clean energy transition. Oregon enacted HB 2021, which is now the most ambitious emissions reduction legislation in the county. HB 2021 requires a 100% reduction of carbon emissions in Oregon by 2040. The legislation requires utilities to develop and submit plans to the state PUC regarding how they plan to meet the clean energy targets outlined in the bill. The utilities must also convene a “Community Benefits and Impacts Advisory Group” to better understand the impacts the clean energy transition will have on low-income ratepayers, environmental justice, and tribal communities.

North Carolina enacted HB 951, which takes a similar approach to reaching the state’s emissions targets. The new law requires the state’s major electric utilities to submit plans to the state PUC outlining how they will reduce emissions 70% by 2030. The legislation also directs the state PUC to undertake a rulemaking regarding the securitization of costs associated with early retirement of coal-fired electric generating facilities that would allow utilities to securitize up to 50% of the value of those facilities.

### State Amendments to Renewable Energy Portfolio Standards (RPS)/Clean Energy Standards (CES) Legislation Since 2018

<table>
<thead>
<tr>
<th>State</th>
<th>New RPS/CES Target</th>
<th>By Years</th>
</tr>
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<tbody>
<tr>
<td>California</td>
<td>100%</td>
<td>2045</td>
</tr>
<tr>
<td>Colorado</td>
<td>100%</td>
<td>2050</td>
</tr>
<tr>
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<td>2030</td>
</tr>
<tr>
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<td>2050</td>
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<tr>
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<tr>
<td>Virginia</td>
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</tr>
<tr>
<td>Puerto Rico</td>
<td>100%</td>
<td>2050</td>
</tr>
</tbody>
</table>

Source: NCSL, 2021

Illinois (SB 2408) and Rhode Island (HB 5445) enacted new laws to reach net-zero emissions by 2050. The Rhode Island bill establishes a “Climate Change Coordinating Council” that will submit plans to the governor and general assembly every 5 years that includes strategies, programs, and other actions that will help the state meet their emissions reduction goals. Illinois SB 2408 includes myriad measures related to emissions reduction, including zero-emissions credits to nuclear power plants, funding for renewable energy development, and clean energy workforce development programs.
Emissions reduction targets have received criticism in the past due to the lack of enforceability of some of the goals. One way of enforcing and tracking emissions reductions is through carbon-trading markets. Washington enacted the Climate Commitment Act (HB 5126) in 2021 which aims to enforce the state’s climate goals. HB 5126 establishes a carbon-trading market within the state that auctions allowances to carbon emitters to enforce compliance with emissions reduction goals. Referred to as “cap-and-invest” program, the money raised from the auction of the allowances will be used on climate resiliency and environmental projects in climate-impacted and over-burdened communities.
CARBON CAPTURE AND SEQUESTRATION

Carbon capture and sequestration (CCS), sometimes referred to as “carbon capture utilization and storage” (CCUS), continues to be an area of interest among state legislatures. CCS is the process by which carbon dioxide emissions are captured from large point sources that use fossil fuels—typically power generation or industrial facilities—and then compressed for injection into deep geologic formations where the carbon dioxide can be stored or used on-site in a variety of applications. This process is referred to as geologic carbon sequestration. The DOE has been funding research and development of CCUS technologies for years and the Infrastructure Investment and Jobs Act appropriated more than $10 billion for carbon capture, direct air capture and industrial emission reduction.

States were also active in passing CCS legislation in 2021. Nebraska LB 650 promotes the geologic storage of carbon dioxide to reduce emissions and bolster the state’s energy industry. Under the bill, the Nebraska Oil and Gas Conservation Commission may issue permits for the permanent or short-term storage of carbon dioxide in underground storage reservoirs. Illinois is also exploring CCUS. Illinois HB 165 establishes a task force, which will study and report on the potential for subsurface storage of carbon dioxide and any regulatory needs for potential CCUS projects.

Carbon can also be sequestered naturally without the need for deep underground reservoirs and injection equipment. Biologic carbon sequestration, also known as soil carbon sequestration, is the process of managing soil, land, vegetation, or aquatic environments, to promote the natural sequestration of carbon dioxide.

Some states have been exploring ways to promote biologic CCS. For example, Maine HB 693 directs the state’s Department of Agriculture, Conservation, and Forestry and the Department of Inland Fisheries and Wildlife to develop recommendations for the establishment of programs and policies to promote and incentivize practices that increase the sequestration of carbon within the soil of natural and working lands. Similarly, SB 179 established the “Maine Healthy Soils Program” which aims to promote land and soil management in ways that result in long-term greenhouse gas reduction and sequestration.

For More Information
NCSL Greenhouse Gas Emissions
Renewable Energy

More than 120 bills related to renewable energy development from 28 states, Washington, D.C. and Puerto Rico were enacted in 2021. Legislation promoting the development of renewable energy resources, like offshore wind and utility scale solar, continue to be popular among state legislatures. Other legislative trends impacting the renewable energy sector include community solar, taxation, and the decommissioning of renewable energy facilities.

OFFSHORE WIND

This year was a big year for offshore wind proponents. The Biden administration has been supportive of pursuing offshore wind development with the goal of building 30 gigawatts (GW) of offshore wind in the United States by 2030. The administration has followed that up by promoting investments, tax incentives, loans, and other financing options to offshore wind developers to build projects and necessary infrastructure.

The nation’s first offshore wind project, Vineyard Wind, broke ground in November 2021 off the coast of Cape Cod. Another project, South Fork Wind, off the coast of Rhode Island also received federal approval in November. Additional plans for offshore wind development are underway in a handful of north eastern states, such as New Jersey and the New York Bight.

Some of those projects have legislative roots dating back to the 2010s, and states continue to pass legislation that promotes offshore wind development. New Jersey’s SB 3926 authorized offshore wind developers to obtain property or property interests within the state for constructing transmission lines and other infrastructure related to the offshore wind project. SB 3926 also gave the state PUC superseding authority over local governments with regards to the siting of offshore wind project infrastructure. New Jersey’s AB 4 also included major tax credits to wind energy developers, including offshore wind, as part of the state’s economic recovery package.

Maine enacted SB 142 to encourage research and development in the offshore wind industry. However, opposition from the commercial lobster and recreational fishing industries in Maine prompted the legislature to subsequently pass SB 512 which establishes a moratorium on offshore wind projects in Maine’s territorial waters.

While most new offshore wind development is focused along the Atlantic coast, states on the Pacific coast have also shown interest. However, offshore wind development on the Pacific coast would require floating offshore wind turbines due to the near-coast deep waters of the Pacific compared to the shallower waters of the Atlantic which allow for sea-floor mounted wind turbines.
Plans for two west coast wind farms were announced in May 2021 when the federal government and California identified a 399 square mile area off California’s central and north coast for offshore wind development. The developments would provide an estimated 4.6 GW of power. California also enacted AB 525 which would research and evaluate the feasibility for offshore wind in state. Oregon enacted a similar bill, HB 3375, which establishes a goal of developing 3 GW of floating offshore wind off the Oregon coast by 2030.

ONSHORE WIND

Onshore wind development also experienced a big year as states look to meet energy generation and carbon reduction goals. Land-based wind development followed up a record year in 2020 by connecting more than 6 GW of wind power to the grid in the first half of 2021. The U.S. has 126 GW of wind power connected to the grid, with an additional 62 GW under development through 2025.

States enacted legislation that promotes, regulates, or addresses certain issues regarding onshore wind development. For example, some states passed legislation that promotes the domestic manufacturing of wind energy equipment while others established decommissioning requirements for outdated turbines.

With the enactment of SB 63, Montana clarified that the State Land Board has authority to lease state lands for the purpose of wind and solar development and may adopt rules for that purpose.

Maryland enacted SB 153, which amended the state’s renewable energy portfolio standard (RPS) by increasing the requirements for municipal utilities. The amendments require that municipal utilities source 20.4% of their energy from Tier 1 renewable sources, which includes wind, and added a specific carveout of up to 2.5% from offshore wind. The new requirements begin in 2022.

Virginia’s SB 1295 amends the Commonwealth’s RPS to include specific provisions related to wind energy. In 2020, Virginia enacted the comprehensive Clean Economy Act, which positioned the state as a leader in clean energy transition policy. In that same vein, SB 1295 would require that developers of land-based wind facilities within the Commonwealth procure equipment from a Virginia-based or United States-based manufacturer using materials or products made in Virginia or the United States.

Onshore wind development has been occurring in the United States for many years now, so some states are beginning to consider the decommissioning process for outdated or retired wind turbines and equipment. Ohio enacted SB 52 which requires wind developers to submit a decommissioning plan to the power siting board and post a bond to cover the estimated costs of decommissioning. Similarly, West Virginia’s SB 492 establishes decommissioning and reclamation procedures for wind generation facilities, including the provision of bonds to cover associated costs.

NEW SOLAR DEVELOPMENT

Renewable energy experienced a big year in 2021 and this is especially true for solar energy. The U.S. saw near-record numbers of new solar installations in the second and third quarters of 2021, installing 5.7 GW and 5.4 GW, respectively. New solar development accounted for 54% of all new electricity-generating capacity additions in the first three quarters of the year. Projections suggest that more than 20 GW of new solar came online in 2021, inching closer to the annual rate suggested by the DOE’s Solar Futures Study released in September 2021.

Driving this growth was the installation of utility-scale solar projects, which
many states have supported through new policies. Arizona, Connecticut, Iowa and Virginia, are among the many states that had large, utility-scale solar power projects begin in 2021.

Legislative trends mirrored the growth of the solar industry in 2021. New Jersey enacted AB 4554 to push the state closer to its renewable energy generation goals by incentivizing solar development specifically. New Jersey’s RPS requires 50% of its electricity come from renewable energy by 2030. The goals outlined in AB 4554 posit that solar power will generate 17 GW by 2035 and 32 GW by 2050. To incentivize that buildout, the bill establishes the Solar Renewable Energy Credit II program and sets the first benchmark of bringing nearly 4 GW of solar power online by 2026.

At least two states enacted policies to support solar-plus-storage development. Connecticut enacted SB 952, which directs the state PUC to report on the state’s mid- and end-of-decade solar and storage goals, and develop programs to promote energy storage systems that are located “in front” of the meter. Virginia also enacted solar energy and storage legislation (SB 1207), making the process of siting solar and storage facilities easier.

Despite these trends, things were not always sunny for solar energy in 2021. Supply chain issues resulted in surging costs and delayed development for many solar energy projects. In addition, potential new tariffs and trade restrictions on Chinese-made solar panels and other equipment resulted in increased costs and restricted the availability of components necessary for solar development. Louisiana also enacted two pieces of legislation reducing the incentive for solar development in the state. SB 185 places additional restrictions and oversight over utility-scale solar development and HCR 40 suspends industrial tax incentives for utility-scale solar.

COMMUNITY SOLAR

Community solar accounted for another major component of the increased solar development over the past year. Community solar, which is also referred to as “shared renewable energy,” is similar to residential rooftop solar except it involves multiple individuals and larger or interconnected solar arrays. The group of “subscribers” receive energy from the shared renewable energy system and credits are distributed based on the shares each person owns in the system.

There are currently 22 states plus Washington, D.C., with codified community solar policies. The Biden administration has also expressed its commitment to community solar by announcing the National Community Solar Partnership and its goal of generating 20 GW of community solar—enough to power 5 million homes and save $1 billion on electricity costs—by 2025. The initiative is designed to promote the energy justice benefits of community solar by creating a network of stakeholders, providing technical assistance and fostering collaboration.

State legislatures across the country passed significant legislation regarding shared renewables, usually focusing on community solar. Some states established community solar programs while others enacted legislation that expanded or promoted their current programs.

New Mexico SB 84, the Community Solar Act, established a community solar program for the state. The bill sets up rules and regulations for community solar and includes special provisions to promote community solar subscriptions for low-income and tribal members.
Some states expanded their current community renewable energy programs. For instance, Colorado enacted SB 261 which removes many restrictions on distributed renewable generation, including removing the limits on generating capacity of distributed systems. It also encourages multi-unit residences, such as mobile-home parks or apartment buildings, to establish distributed generation systems. Oregon also made efforts to promote community renewable energy with the enactment of HB 2021. This major emissions reduction bill provides grants specifically for community based renewable energy development.

Consumer protection for shared renewable customers were also addressed this past year. Maryland enacted HB 473 which allows subscribers to community solar systems to maintain their subscription even if they change addresses and prohibits utilities or subscription organizations from cancelling a person’s subscription when they change addresses. Similarly, Texas SB 398 provides community solar customers with protection and information regarding their subscription and market rates and prevents local governments or homeowners associations from restricting access to distributed solar.

**SOLAR ACCESS/SOLAR RIGHTS**

Texas was far from alone in addressing solar access issues in 2021. Solar access refers to a growing body of law that prevents localities, often municipalities or homeowner associations (HOAs), from prohibiting or unreasonably restricting the installation of distributed or residential rooftop solar.

New York enacted SB 2997, establishing the “Solar Rights Act,” which prohibits HOAs from adopting rules, restrictions, or covenants that would prevent or unreasonably restrict the installation of solar energy systems on residential property within the HOA. New York also enacted SB 391, requiring local building and planning regulations to be designed in ways that accommodate the installation of renewable and alternative energy sources.

Illinois enacted HB 644, which adds “solar storage mechanisms,” including batteries, to the list of solar energy systems protected under the state’s solar access laws. It also clarifies that HOAs may not unreasonably restrict the installation of solar energy systems in ways that reduce the production of the system by more than 10%.

Maine’s SB 361 ensures utility customers continue to have access to residential solar generating and storage systems by directing the state PUC to adopt rules regarding the connection of distributed solar resources to investor owned transmission and distribution systems.

**MISCELLANEOUS**

As solar energy sources become more prevalent, many state legislatures are pursuing legislation regarding the installation and operation of solar energy systems – for both utility-scale and residential solar. For instance, there were multiple bills regarding the taxation, siting, and recycling of solar panels in 2021.

Multiple states considered how to tax solar and other renewable energy facilities. Colorado, Indiana, Montana, Oregon and Texas all enacted legislation surrounding the property tax assessment of land and property used for renewable energy.

Where renewable energy facilities are sited has also been an important topic considered by state legislatures. Montana SB 63 authorized the state land board to lease state lands for wind and solar development. Multiple states also passed legislation concerning the siting of renewable energy facilities on farmland. New Jersey AB 5434 encourages the dual-use of farmland and solar installations by establishing a pilot program and allows certain dual-use property to be assessed solely as farmland under certain conditions. By contrast, Maine enacted SB 206, which convenes a working group to discourage the use of high-value agricultural land for siting solar arrays and instead looks to marginal-value land for those facilities. Oregon HB 2109 concerns county permitting procedures for wind, solar, and geothermal facilities on agricultural land.

Like the aforementioned laws regarding the decommissioning of wind energy facilities, some state legislatures are passing laws related to the recycling of solar panels and decommissioning of solar facilities. Hawaii HB 1333 commissions a study to determine best practices for the recycling and disposal of solar panels. Washington HB 1393 postpones the state’s original solar panel recycling and decommissioning requirements as the state looks to establish a more comprehensive program. Conversely, Maine SB 113 establishes
decommissioning requirements for solar facilities, including the submittal of a decommissioning plan for all new solar developments. Similarly, Texas SB 760 sets parameters for the removal and decommissioning of solar power facilities, and decommissioning bills from Ohio and West Virginia discussed in the wind energy section also apply to solar energy facilities.

Nuclear Energy

The past year proved notable in state nuclear energy policy on several important fronts. States considered efforts to retain the existing fleet of nuclear reactors, explored policies to support advanced nuclear development, and enacted policies that—even if not explicitly supportive—at least open the door to nuclear power playing a role in achieving state clean energy targets.

At the same time, a variety of proposed nuclear power projects took shape through collaborative partnerships between the U.S. Department of Energy (DOE) and industry, including announcements regarding the development of advanced reactor demonstration projects in Tennessee, Washington and Wyoming.

SUPPORT FOR EXISTING NUCLEAR

The most immediately impactful development involves support for existing nuclear reactors. With natural gas and renewables driving power prices down over the past decade, nuclear plants have struggled to compete in regions with organized wholesale electricity markets. Since 2013, more than 10 reactors totaling close to 9 GW in combined capacity have been shut down prematurely, in many cases due to economic considerations.

In order to support clean energy goals and jobs, since 2016 at least five states have enacted policies to keep existing nuclear power plants operating. The most common policy, known as zero emissions credits (ZECs), provides direct payment for every megawatt-hour (MWh) of carbon-free power generated by qualifying nuclear power plants. The Illinois legislature was the first to enact a ZECs policy (2016), while Ohio was the last (2019). Over the last year, both states acted again. Ohio repealed most of the enabling ZECs legislation due to a bribery scandal, but Illinois expanded on its nuclear supports as a central pillar of SB 2408.

In 2016, Illinois provided $235 million per year in ZECs to support two struggling nuclear plants. In 2021, Illinois’ Climate and Equitable Jobs Act built on that existing program to extend almost $700 million over five years to three additional nuclear plants. Having proven effective across several states, ZECs also formed the basis for a new federal program to prevent early retirements for existing nuclear. The Civil Nuclear Energy Credit program, part of the bipartisan $1.2 billion Infrastructure Investment and Jobs Act, will provide up to $6 billion in support for nuclear reactors that have been operating in the red. The infrastructure package also includes a $3 billion carve-out for advanced nuclear—another topic of interest to states in recent years.
SUPPORT FOR ADVANCED NUCLEAR

Following the passage of Wyoming’s innovative HB 74 (enacted, 2020), which targeted retired coal units for redevelopment through small modular reactors (SMRs), a number of states have considered ways to attract new nuclear industries. Nebraska’s LB 84 (enacted) extends existing incentives for renewable energy under the ImagiNE Nebraska Act to apply to companies that build advanced nuclear reactors. The Missouri House passed HB 261, a bill that would provide an exception to the state’s ban on construction work in progress (CWIP) financing, which helps utilities finance the construction of major projects by allowing them to recover costs from ratepayers along the way. The exception would apply to advanced nuclear and renewable facilities of 200 MW capacity or larger. The bill did not pass the Senate in 2021, but has been reintroduced as HB 1684 for the 2022 session.

The Montana legislature took action on two fronts. In adopting SJR 3, the legislature decided to study the feasibility of replacing certain coal-fired units with advanced nuclear generation. In enacting HB 273, the state legislature repealed a state law that required citizens to vote on the approval of any new nuclear power project in the state—a change that could make it easier to develop new nuclear. In doing so, Montana joined several states in opening the door to nuclear power.

This trend has continued into 2022. Indiana enacted SB 271, which seeks to support the development of SMRs in the state, in February. The new law directs the state PUC to develop rules regarding the construction and operation of SMRs at retiring coal and natural gas facilities, in addition to offering some financial incentives for public utilities to recover costs for the development of these facilities.

OPENING THE DOOR TO NUCLEAR

There are now 12 states with restrictions on the construction of new nuclear power facilities, but that number has decreased in recent years as states revisit these long-standing policies. In 2021, Montana enacted HB 273, while West Virginia enacted SB 4 early in the 2022 session. Each bill repealed restrictions on the construction of new nuclear power facilities, opening the door to new nuclear. Kentucky and Wisconsin have repealed similar laws in recent years.

A trend that favors nuclear power in a less direct way has been the shift in how states have approached clean energy development requirements. More than half of states have established an RPS to promote renewable energy development. However, at least seven states have expanded these policies in recent years to include additional clean resources—including nuclear—that qualify for meeting state requirements. North Carolina and Oregon left the door open to nuclear power as an option for utilities to meet emissions reduction targets under new laws enacted in 2021.

In 2021, Maryland, Virginia and West Virginia passed measures that wrap nuclear—either directly or indirectly—into state clean energy policies. While Maryland’s governor vetoed SB 460, Virginia enacted SB 1284 to establish a state clean energy policy that opens the door to carbon-free resources like nuclear. Meanwhile, each chamber of the West Virginia legislature adopted a resolution recognizing the importance of clean energy to the state’s future, economic diversification and remaining a leader in energy production. Nuclear power was one of the clean energy technologies included.
Transportation Electrification

Support for transportation electrification continued to increase during the 2021 legislative session, with action taken in states across the country. Some previous year trends, including incentives for EV charging infrastructure and legislation concerning EV registration fees, continued into 2021.

However, new issues have come to the forefront as well. Perhaps most notable has been a focus in 2021 on expanding public EV charging infrastructure and increasing access for renters and those living in multi-unit dwellings. New measures to collect road maintenance fees from EV owners to offset gas tax revenues that will be lost from increased vehicle fuel efficiency and growing EV adoption have also continued to gain traction in 2021. Road use charges and per-kilowatt-hour (kWh) taxes on the electricity used for EV charging both received significant attention this year.

**EV INFRASTRUCTURE EXPANSION, PUBLIC CHARGING ACCESS**

States across the country have started working on ways to expand EV infrastructure beyond the single-family garage to multi-unit dwellings and office buildings, public parking facilities, and along travel corridors. As federal support for these activities increases, this trend is also likely to continue in 2022.

Other states have moved in other ways to facilitate the expansion of EV infrastructure. Continuing a trend from 2020, Kansas (HB 2145), North Dakota (SB 2091), and South Carolina (SB 304) exempted EV charging suppliers from regulation by the state PUC, allowing suppliers more flexibility to earn revenue from their equipment. California, under AB 970, will now deem applications for EV charger installations complete if they are not denied or deemed incomplete – with an explanation of all deficiencies – within 5-10 days. Maryland HB 110 prohibits apartments, condo associations, and similar organizations from banning or unduly restricting EV charging installation, removing a hurdle for multi-unit dwelling owners.

Some states have begun explicitly requiring builders and/or state agencies to include EV charging infrastructure in newly constructed buildings and parking facilities. At least 9 states have passed laws directly requiring builders to include—or at least offer—EV charging equipment in new construction. Some of these states enacted or expanded new construction requirements in 2021: New Jersey, Oregon, Virginia, Washington, and Washington, D.C.
New Jersey SB 3223 simplifies the review process for EV charger installations at existing fuel retailers and other buildings, establishes minimum numbers of EV parking and “make-ready” parking spaces at new multi-unit dwellings, and requires the development of a model land use ordinance to facilitate local charging development. Other legislation from New Jersey, AB 1653, encourages charger installation in redevelopment projects, with hopes of improving access for underserved areas. Virginia HB 2001 requires local governments and state agencies to include EV charging in major renovations and most new construction of government buildings. Washington (HB 1287) and Oregon (HB 2180) enacted new laws requiring updates to the state building code that will require a certain percentage of parking at new buildings to be wired for EV charging, while California acted through regulation to require EV chargers in all new construction.

Rhode Island HB 5031 requires state agencies to develop a plan for statewide EV charging infrastructure to expand accessibility. Vermont enacted HB 433 to create a pilot program for EV charger installation at multi-unit dwellings, prioritizing non-profit-owned and affordable housing units.

**FLEETS AND HD/COMMERCIAL VEHICLES**

Continuing action from 2020, two more states adopted California’s low emission vehicle and zero emission vehicle (LEV/ZEV) standards in 2021 – Virginia through statute and Minnesota through regulation. New Mexico and Nevada also started the process in 2021 to adopt these standards. States often own or lease large numbers of vehicles and many are trying to lower emissions by transitioning their fleets. To date, 14 states have formally adopted California’s standards under Section 177 of the Clean Air Act.

California implemented an Advanced Clean Trucks (ACT) rule in 2020. The rule aims to speed up the electrification of medium- and heavy-duty vehicles like commercial trucks, with increasing ZEV truck sales targets starting in 2024. Since then, other states have moved this direction: Massachusetts, New Jersey, New York, Oregon, and Washington adopted the ACT rule via regulation in the latter half of 2021. Several other states, including Colorado, Connecticut, Illinois, Maine, and Vermont, are considering adopting the rule as well.

California enacted SB 372 in October 2021, which makes additional financing tools and other support available to help medium- and heavy-duty fleet owners transition to zero-emission vehicles. Hawaii HB 552 lays the groundwork for 100% clean ground transportation in the state, and sets a goal of a ZEV state fleet by 2035. It also tasks the state DOT and Energy Office with developing electrification strategies. Maryland SB 137 also focuses on state-owned fleets, prohibiting the Maryland Transit Agency from purchasing non-ZEV buses. New Jersey SB 1010 allows local governments to issue bonds to help transition fleets to EVs. Look for states to take further action on this in 2022.

**NEW INFRASTRUCTURE REVENUE MECHANISMS: ROAD USAGE CHARGES/EV FEES & TAXES**

As states address the expected impacts of EV adoption on already-declining gas tax revenues, alternative methods of raising road maintenance revenue are being explored, with a couple in particular gaining traction in 2021.

Fourteen state or regional pilots have received federal grants to explore road use charge (RUC) or vehicle miles traveled (VMT) systems. There is some funding for RUC pilots in the federal infrastructure bill as well that could be used in 2022. Only a few states fully operate RUCs, and they are usually voluntary. However, momentum is building with multiple states committing to feasibility studies and pilot programs in 2021. California, Oklahoma, Oregon, Utah, Virginia, and Washington all enacted legislation in 2021 to establish or expand RUC programs and studies.

At least three states considered legislation in 2021 to tax electricity consumed at public EV charging stations. Oklahoma enacted HB 2234, which sets a new 3-cents-per-kWh tax on electricity used for EV charging at public charging stations. The tax does not apply to private residential charging. Nevada (SB 384) and Minnesota (SB 1602) each considered but did not pass legislation that would have placed a kWh tax on electricity from both private and public charging equipment. Wyoming has introduced a similar bill for 2022, while Vermont has been studying the impacts and feasibility of a per-kWh tax. It is likely that more action could be seen in other states during 2022 as lawmakers look for ways to address the expected decline in gas tax revenues and fill gaps in road infrastructure funding.
Increasingly, states are also creating their own dedicated funding pools and programs for public EV infrastructure. Arkansas SB 632 creates a statewide EV infrastructure grant program and a dedicated fund for the program with monies from various sources approved by the legislature. The new law also expressly aims to take advantage of incoming federal funding. Mississippi SB 2598 also created a new EV Infrastructure Fund in the State Treasury to receive and disburse federal funding. Colorado SB 260 created a dedicated “community access enterprise” to implement grant, loan, or rebate programs for EV infrastructure expansion across the state, funded largely by revenue bonds and fees collected by the enterprise as allowed under state law. Hawaii HB 1142 redirected some existing environment and energy-related tax revenues into a fund specifically for EV charging system rebates. Oklahoma HB 2234 will send all EV fee revenues to a dedicated “DRIVE” Fund until 2027, after which 15% of EV fee revenue will go to the counties and 85% to the Fund. The DRIVE fund will be used to supplement state road and bridge funding and help build out EV infrastructure, with county funds deposited in county highway accounts.

### State Adoption of Zero Emission Vehicle Standards, Zero Emission Truck Standards

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<th>State Adoption of ZEV Standards</th>
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Source: NCSL, 2021

### Energy Efficiency

States continued to focus on policies designed to reduce energy consumption, with a growing focus on energy affordability and energy cost burden. Energy efficiency programs for larger, non-residential buildings, such as commercial properties and schools, also became more prominent in 2021. Legislatures in at least 28 states, the District of Columbia, and Puerto Rico considered over 600 pieces of legislation relating to energy efficiency last year. Nearly 90 bills were enacted across 20 of these states and territories. Aside from efficiency mandates, financial incentives for efficient buildings were a common tool in 2021 to reduce energy use, especially in the building sector.

Colorado HB 1286 and Utah HB 131 require large building owners and state facilities, respectively, to collect and report energy usage data to help improve energy efficiency performance. Maine SB 184 provided funding and other support to help schools implement efficiency measures and ultimately become carbon neutral. New Jersey’s SB 3995 established an energy efficiency stimulus fund for schools and small businesses, while New Mexico HB 15 created new sustainable building tax credits. Minnesota HB 2110 creates a new loan account within the state treasury to help fund efficiency improvements in state buildings. Massachusetts SB 9 is a wider-ranging piece of legislation that establishes a road map to a net-zero economy, including energy efficient and net-zero buildings. Maine (LD 340), Montana (SB 147) and Tennessee (SB
795) each established Commercial Property Assessed Clean Energy (C-PACE) programs, while Kansas considered a similar measure.

As many households still struggle with utility debt and high energy costs due to the economic disruption associated with the COVID-19 pandemic, states have continued efforts to reduce energy use and utility bills through low-income energy efficiency and weatherization programs. For example, Massachusetts SB 9 updates state appliance efficiency standards as part of its broader focus. Several other pieces of legislation also passed in 2021 to increase appliance efficiency standards: Nevada AB 383, Maine LD 940, Oregon HB 2062, and Rhode Island SB 339 and HB 5966.

More specifically targeted to low- and moderate-income households, Connecticut (SB 356) and Oregon (HB 2842) created new grant programs to help install energy efficiency upgrades for low-income households and renters. Colorado increased funding for its weatherization assistance program through an appropriation (SB 231) and enacted a bill (SB 246) requiring utility electrification plans and setting aside funding for low-income households. California extended eligibility for some of its existing efficiency programs to residents at or under 200% of the federal poverty level, making assistance available to more low- and moderate-income families. Virginia HB 2227 does not mandate efficiency measures itself, but does seek to more closely align state building codes with any current and future updates to the ICC’s energy conservation code.

Energy Resilience

The past several years have witnessed an uptick in state legislative action aimed at hardening energy infrastructure against natural disasters. Following some of the most destructive years for natural disasters in U.S. history, states have been working to make vital energy services more resilient to stronger, more severe weather events, including wildfires, hurricanes, tornadoes and winter storms. The past year was no exception, with the U.S. experiencing 20 billion-dollar disasters causing losses totaling $145 billion.

Broadly, these new laws require enhanced planning from state agencies and utilities, promote technologies that maintain service during outages, and invest in hardening infrastructure against localized weather threats.

PLANNING AND PREPAREDNESS

States pursued two primary tracks as they worked to build preparedness into state policy. The first involved requirements for state agencies. California transferred the state’s wildfire preparedness and mitigation mission into a central agency (AB 9), while Hawaii required the state Office of Planning to work with each state agency to identify existing and planned facilities and infrastructure that are vulnerable to sea-level rise, flooding and other natural hazards (HB 243). Oregon enacted SB 762, which requires the state PUC to regularly convene workshops for electric utilities and transmission operators to share information and best practices related to wildfire prevention and preparedness. Meanwhile, Washington HB 1168 requires utilities to share best practices related to fire mitigation efforts.
The second track involves planning requirements for utilities. In 2021, two states moved to bolster planning requirements to ensure electric utilities have secured sufficient generating capacity to meet peak loads reliably. Indiana enacted HB 1520, requiring utilities to submit annual planning reserve margin reports to the state PUC. The PUC is tasked with evaluating those reports and determining whether each utility has met its obligations—and if not, require that utilities contract for or construct the necessary resources. North Dakota’s SB 2313 requires the state’s electric utilities to submit integrated resource plans to the state PUC, which can value baseload and load-following resources like coal and natural gas higher than variable resources like wind and solar. The PUC is also granted authority to require action or levy a fine for utilities that fail to meet the minimum requirements.

A number of states also strengthened utility planning requirements focused on common regional threats, such as wildfires, hurricanes or floods. Nevada expanded on a previously enacted wildfire planning requirement for utilities with the passage of SB 14, which requires the state to provide guidance to help new generating resources comply with vulnerability assessments mandated under new planning requirements. New Jersey’s SB 2607 requires municipalities to identify critical facilities that must always be maintained and operational.

California enacted SB 533 to require electric utilities to identify circuits that have a high frequency of being “deenergized”—a term used to describe a planned power outage to reduce the risk of utility equipment sparking a fire. The utilities must report on measures taken to reduce the need for future deenergization events, including replacing, hardening or burying portions of the circuit underground.

California also defined “deenergization events” in state statute as planned power outages to reduce the risk of utility equipment sparking a fire. The newly enacted bill (SB 52) also outlined requirements for utilities to notify customers and public officials. Similarly, Arkansas enacted HB 1557 to require the state’s electric utilities to directly notify local governments around planned power outages and other emergency measures. The law also requires utilities to develop emergency plans for at-risk customers to help them manage outages and weather events.

MICROGRIDS AND BACKUP POWER

Microgrids and backup power are two key methods of helping vulnerable individuals and communities maintain vital services through outages. While several states have recently taken action regarding backup power requirements for certain facilities, the past year was particularly notable for microgrids. These systems can operate in tandem to maintain electric service to critical loads, with or isolated from the grid, during outage events. In 2021, states considered nearly 60 bills related to microgrids, with at least 14 bills enacted.

Maine HB 782 was the most substantial of these, directing the state PUC to develop standards, tariffs and interconnection procedures for microgrid proposals. It also directs the PUC to approve microgrids that are determined to be in the public interest using these new rules. This type of standardization is considered key to expanding microgrid development by establishing clear pathways and predictable revenue to potential developers. Adding to this, Maine enacted HB 1230, which created the Maine Clean Energy and Sustainability Accelerator, a fund to support the development of a wide array of clean energy projects and infrastructure, including microgrids.

Connecticut, Minnesota, New Jersey, New Mexico and Oregon also established funds or set aside funding either directed specifically at microgrids or included microgrids under the list of qualifying projects.

Finally, Tennessee became the fourth state to include microgrids under the list of projects that qualify under state commercial property assessed clean energy financing (C-PACE) laws. C-PACE is a finance mechanism that allows property owners to finance the up-front cost of certain energy projects by repaying them through fees applied to their property taxes. Connecticut, Illinois and Washington also include microgrids under C-PACE programs, while Pennsylvania considered a bill to do so last year.
HARDENING INFRASTRUCTURE

Hardening grid infrastructure—making it more resilient to the destructive force of wind, water, fire and ice—costs money. These projects may include undergrounding electric lines, replacing susceptible poles, pursuing flood mitigation projects or winterizing vital components. In the 2010s, the costs associated with these investments has often been a barrier to legislative action. However, that has started to change in recent years.

In 2021, several states enacted legislation to overcome some of those financial obstacles. While New Jersey, Oregon, Virginia, Washington and Wisconsin set aside funding that could be used for grid-hardening projects, a handful of other states established state-run enterprises to administer grants or low-cost bond programs geared toward hardening or rebuilding energy infrastructure.

Colorado created a Natural Disaster Mitigation Grant Program (HB 1208) to establish a long-term, consistent source of funding to support local communities in developing resilient infrastructure. The grant program will be funded through a fee assessed on insurance companies that operate in the state.

Louisiana and Texas expanded the role of state enterprises that administer low-cost financing through securitization and bond issuance. Louisiana’s SB 223 authorized the Louisiana Utilities Restoration Corporation to issue storm recovery bonds that may be used by the state’s electric utilities as a low-cost financing option to rebuild after disasters and pursue grid-hardening projects aimed at protecting utility infrastructure before future disasters occur. Projects financed through those bonds may not be recovered through customer rates. Texas’ HB 1510 similarly expanded low-cost financing through a state authority to finance future-oriented infrastructure-hardening projects.

New Mexico HB 245 clarifies that distribution system-hardening projects designed to protect substations and reduce outages are eligible to receive funding under a law enacted in 2020 to incentivize and assist with financing grid modernization projects.

Winter Storm Uri Spurs Over 100 Bills in Texas

In mid-February, the Texas electric grid—which is largely isolated from the nation’s two primary power grids—experienced catastrophic failures resulting from freezing conditions brought on by Winter Storm Uri. The winter conditions affected power generation resources of all types that had not been adequately winterized, though natural gas-fired power plants represented nearly 60% of the failures. The storm forced the grid operator, the Electric Reliability Council of Texas (ERCOT), to operate for two days with an average of half its peak capacity offline. Over 4.5 million people lost power—some for up to four days—and more than 200 people died because of the weather event and the emergency compounded by energy system failures.

Following the event, Texas legislators introduced more than 100 bills to reform the state’s energy sector and prevent similar failures in the future. Ultimately, lawmakers enacted over a dozen new laws. Broadly, these laws fall into several categories: energy system weatherization, grid reliability, gas-electric coordination, regulatory reform and addressing costs.

ENERGY SYSTEM WEATHERIZATION

Several enacted bills aimed to ensure that critical natural gas and electric system components can withstand winter temperatures. According to a report by FERC, over 80% of freeze-related outages occurred at temperatures above the operator’s stated ambient design temperature, so the new laws also require enhanced oversight and inspection from state regulators.

SB 3 requires the state PUC to develop and adopt reliability standards that include weatherization requirements, with ERCOT required to inspect facilities and assess penalties of up to $1 million per day for violations. The new law also requires certain natural gas facilities determined to serve a “critical” function to be weatherized, with state oil and gas regulators required to inspect for compliance and report violations.
Meanwhile, HB 1510 allows utilities to access lower-cost financing through an existing state program to, among other things, pursue weatherization projects.

GRID RELIABILITY

At a high level, state legislators tasked the state PUC with developing more substantial and enforceable reliability standards for the state’s electric grid (SB 3). In addition, SB 1281 aims to address reliability through transmission development by facilitating interconnection of new generation and addressing transmission congestion and broader planning. The new law requires ERCOT to conduct a biennial assessment of the power grid and make recommendation for transmission projects that will enhance reliability. At a more local level, several new laws facilitate the development (SB 398) and use (HB 1572) of distributed generation and backup power resources to support the grid during times of stress.

GAS–ELECTRIC COORDINATION

The interconnectivity—and interdependency—between electric and natural gas systems has proven problematic during multiple winter weather events over the past decade. Gas is now used to generate more power than any other resource in the U.S., so gas supply to power plants has become increasingly vital for maintaining power system reliability. And electricity is required to operate many components in the gas delivery system. The events in Texas emphasized the potential for each system to exacerbate problems experienced by the other without proper planning and coordination.

To address these issues, HB 3648 directs the RRC to work with the state PUC to adopt rules and a process to designate certain natural gas facilities as critical during emergencies. The new law also requires facilities to provide ERCOT and utilities with necessary information to prioritize electricity service to critical gas facilities during load-shed events to ensure that power isn’t cut to the gas supply chain, which in turn ensures that gas-fired generators don’t lose access to fuel. Several additional bills rely on this “critical gas facility” designation to enforce planning, communication and weatherization requirements.

REGULATORY REFORM

Several new laws make changes to ERCOT, the state PUC and RRC. The PUC has been granted explicit oversight of certain activities—especially activities related to reliability. In addition, laws require greater coordination and communication between the three entities.

ADDRESSING EXCEPTIONAL COSTS

The drop in supply led to extraordinary gas prices throughout the region, affecting communities across the eastern U.S. at a time when many communities needed gas for heating. At the same time, ERCOT’s scarcity pricing mechanisms kicked in for extended periods, leading to extraordinary electricity prices.

State legislators in Arkansas, Kansas, Oklahoma and Texas enacted legislation to allow utilities to securitize the exceptional costs incurred over the course of the crisis, with an emphasis on providing assistance to smaller utilities. In addition, Texas legislators enacted HB 16, prohibiting retail electricity providers from offering pricing plans that expose some customers to real-time power prices in ERCOT—an attempt to shield residential and small commercial customers from the type of market volatility experienced in February.

For More Information

For a more detailed review of the events and failures experienced in Texas, the Federal Energy Regulatory Commission recently released its final report and recommendations: “The February 2021 Cold Weather Outages in Texas and South Central United States.”
Energy Storage

The growth in energy storage legislation over the past several years has been extraordinary. In 2018, around 80 measures related to energy storage were introduced in state legislatures, with 17 bills enacted. In 2021, NCSL tracked just under 300 measures related to energy storage, of which 60 became law. The growth in legislative interest mirrors real-world deployment, as policymakers and utilities look to capitalize on the unique characteristics that energy storage offers the grid, whether as a complimentary resource to help integrate renewable energy or for its potential to offer grid-stabilizing services and backup power.

Most of the state action sought to encourage the development of new energy storage capacity through financial incentives or regulatory changes. At least nine states—California, Colorado, Indiana, Maryland, Maine, New Hampshire, Oregon, South Carolina and Virginia—enacted legislation to provide financial incentives to energy storage developers. Indiana’s SB 383 provides a sales tax exemption for utility scale battery storage systems, while Arizona (HB 2153), Colorado (SB 20), New Hampshire (SB 102) and Virginia (HB 2006) established other tax exemptions for energy storage technologies.

Maryland (HB 517) and Maine (HB 1230a) established or expanded state programs to provide financial support to clean energy projects, including energy storage.

On the regulatory side, seven states enacted nine bills aimed at easing the regulatory burdens on energy storage developers. Maine (SB 361) and New Hampshire (SB 91) directed their state PUCs to adopt rules that streamline interconnection processes for energy storage projects, while Colorado (HB 1324) authorized the state PUC to review and approve utility applications for innovative low-emissions technologies, including energy storage. Meanwhile, Virginia enacted two bills (HB 2148 and HB 2201) that aim to facilitate the siting, review, permitting and inspection requirements for small renewable projects paired with energy storage.

Texas at least partially addressed some restrictions on the use of energy storage by transmission and distribution (T&D) utilities with the enactment of SB 415. Under state law, energy storage is classified as generation, which T&D utilities are prohibited from owning in Texas. In other states, storage has been used to avoid costly infrastructure upgrades on the transmission and distribution grids by managing congestion and system needs more efficiently—an approach known as non-wires alternatives. The new law allows T&D utilities to pursue energy storage as a cost-saving alternative by allowing T&D utilities to lease storage systems from third parties and recover costs.

A more direct approach to energy storage development has come in the form of state mandates and targets. At least 10 states proposed to establish new or increase existing energy storage targets in 2021, though only two states ultimately enacted these measures—Connecticut and Maine.

Connecticut’s SB 952 sets three energy storage development goals that culminate at 1,000 MW by 2030. The new law also directs the state PUC to develop programs to incentivize and facilitate development for all type of projects. Maine enacted SB 213, which established a state goal of developing 300 MW by 2025 and 400 MW by 2030, with subsequent goals to be set by the state Energy Office following 2030.

Nine states have set energy storage targets: California, Connecticut, Maine, Massachusetts, Nevada, New Jersey, New York, Oregon and Virginia.
States also considered policies to capitalize on the resilience benefits of energy storage, with at least seven states considering the application of energy storage for microgrids and backup power. New Jersey (AB 2374) and Oregon (HB 2021) each enacted measures to increase funding opportunities for community resilience projects, including energy storage and microgrids.

The storage market is currently dominated by lithium-ion batteries, which are often limited to four-hour discharges—notably limited when it comes to days-long events that strain the grid. To address this shortfall and expand the market offerings, several states have begun exploring ways to develop “long-duration” energy storage—a suite of technologies that can discharge over the span of anywhere from 10 hours to weeks.

California built on prior enacted legislation with the enactment of SB 423, which requires the state Energy Commission to incorporate power system resources that can, individually or in combination, deliver electricity with high availability for the duration of multiday events and facilitate the integration of renewables on the grid. Meanwhile, Colorado’s HB 1052 includes pumped hydroelectric facilities—which tend to offer long-duration discharge—under the list of resources that qualify under the state’s RPS.

Energy Storage Legislation 2021

Energy Sector Cybersecurity

State legislatures considered at least 46 measures related to the cybersecurity of energy systems in 2021, a jump from the 35 measures introduced in 2020 but still down from the 50 measures seen in 2019. Of the measures introduced in 2021, a dozen passed. Even with several high-profile cyber-attacks on energy systems underlining the growing threat—such as the Colonial Pipeline ransomware attack that led to a massive drop in fuel supplies on the East Coast—the topic has not seen substantial growth in state legislation in recent years.

Even so, the policies under consideration by states have matured in that time. These measures most often related to cybersecurity reporting and information-sharing requirements for utilities, exemptions to open records laws for utility cybersecurity disclosures and the creation of new criminal offenses related to cyber-crimes targeting critical infrastructure.
Georgia enacted HB 156, requiring government agencies and utilities to report any cyber-attacks to the state director of Emergency Management and Homeland Security, while also exempting certain cybersecurity disclosures from public release. Kansas, North Dakota, Oklahoma and Vermont provided similar open records exemptions, which are intended to prevent utility cyber vulnerabilities from being released publicly.

North Dakota’s SB 2313 requires the state’s electric utilities to submit annual reports to the state PUC regarding cybersecurity preparedness, assessments of emerging threats and steps taken to improve their cybersecurity posture.

Finally, Texas enacted SB 2116, prohibiting contracts or other agreements related to the state’s critical infrastructure with certain foreign-owned companies. The prohibitions—which apply most directly to companies headquartered in or owned by individuals from China, Iran, North Korea or Russia—relate to the energy sector and cybersecurity systems.

Energy Workforce

As the U.S. navigates the clean energy transition, issues facing the energy workforce have been at the forefront. The two primary issues are the displacement of workers in the fossil fuel industry and the development of a clean energy workforce. These workforce issues are multifaceted and overlap with a variety of other issues facing the energy sector and the broader economy, including energy justice, education, and economic development. These issues have become even more apparent as the country manages the COVID-19 pandemic and clean energy development continues to expand.

Legislatures were active in passing economic and workforce development bills in 2021. Some larger economic development bills included specific provisions regarding the energy workforce. For example, New Jersey AB 4 is a general economic recovery bill that provides tax credits and other incentives for renewable energy developments that create jobs for the state’s energy workforce. Similarly, California SB 7 allows the governor to fast-track development projects, including renewable energy generation and clean energy manufacturing projects. While the law does not explicitly address workforce transition issues, it is designed to streamline and promote jobs and training programs in the clean energy industry.

Some states also enacted legislation specifically targeted at the development of a clean energy workforce. Most notably, Illinois’ SB 2408 included numerous provisions designed to help displaced fossil fuel workers and establish a clean energy workforce for the state.

The Illinois bill creates the Energy Transition Assistance Fund and allocates funds to support state workforce development and transition. Additionally, the act creates a Clean Jobs Workforce Network Hub program, which establishes 13 hub sites aimed at leveraging community-based organizations to provide resources, information and support for workers to enter the clean energy sector.

The law also includes a section referred to as the Displaced Energy Workers Bill of Rights. It includes benefits for displaced workers, such as advanced notice of plant or mine closures, education for displaced workers on available assistance programs and resources, consultation with workers on various employment and educational opportunities for them, training and career counseling services and financial and retirement planning services.
A few other states enacted legislation regarding energy workforce development in 2021. Colorado enacted HB 1290, which provided additional funding to the Office of Just Transition. The bill provided $8 million to fund grants supported by the Just Transition Cash Fund and an additional $7 million to new coal transition worker assistance programs. Colorado also enacted HB 1149 which is aimed at promoting energy sector career pathways in higher education.

California SB 162 established the Community Economic Resilience Fund to provide grants aimed at resolving economic and workforce issues resulting from COVID-19 and the transition to carbon neutrality. These economic development grants will provide relief to displaced energy workers by funding training programs, supporting regional workforce initiatives, and promoting growth and innovation in key industries. California SB 589 amends an existing law requiring a state assessment of necessary electric vehicle charging infrastructure, along with the workforce development and training resources needed to meet the state’s EV goals.

While not directly related to workforce development, two states enacted legislation to support a state “Climate Corps” for volunteers, youths, and others to contribute to climate, energy, and environmental projects. Maine enacted HB 533 seeking an assessment of service projects and recommendations on how to best implement the Maine Climate Corps program. Hawaii enacted HB 1176 which establishes a Green Jobs Youth Corps program to promote service projects and provide work and training to program participants.

Energy Justice & Equity

Energy justice, environmental justice, and equity issues all made headlines in 2021 and many communities, organizations and legislators are bringing these issues to the forefront of the energy policy discussion. Energy justice refers to the process of achieving equity in both the social and economic participation in the energy system and focuses on alleviating disproportionate burdens on communities—typically communities comprised of working class, indigenous, minority, and historically disenfranchised people—by making energy more affordable, accessible and responsibly managed.

The Biden administration has been vocal recently about its support for energy justice. President Biden announced the Justice40 Initiative that attempts to address equity and justice issues related to the clean energy transition and the environment. The initiative promises to deliver at least 40% of the overall benefits from federal investments in climate and clean energy to disadvantaged communities. The initiative outlines how programs related to climate change, clean energy, transportation and others can be leveraged to positively impact disadvantaged communities.

Energy affordability and access is at the heart of energy justice. Low to moderate income households are considered the most at risk of not having affordable access to energy with Black, Latino, and Native American households paying significantly higher proportions of their income on energy compared to white households. Programs like LIHEAP—the Low-Income Home Energy Assistance Program—have been leveraged to alleviate this disparity.
Some states also enacted new utility bill payment assistance programs in 2021, such as Percentage of Income Payment Plans (PIPP). These plans allow low-moderate income customers to pay a fixed percentage of their income in monthly energy or utility costs rather than being charged at a retail rate. Rhode Island’s HB 5809 establishes that customers below 150% of the federal poverty level who receive assistance through LIHEAP will not pay more than 4% of their annual gross household income for electricity. Illinois enacted similar legislation, SB 265, where eligible customers will not pay more than 6% of their income on gas and electric utility bills. Colorado’s HB 1105 bolstered the state’s low-income utility payment assistance programs. Two other Colorado bills—SB 272 and SB 1266—consider how the state’s clean energy transition would impact “disproportionally impacted communities” and bring energy and environmental justice issues to the forefront.

The growing awareness of energy justice issues has led states to attempt to address these issues by weaving equity considerations into broader energy policies. These larger clean energy policy bills are beginning to consider the impacts these policies have on disadvantaged communities. For instance, equity and justice was a component of recent state energy efficiency plans in Massachusetts and a rooftop solar program in Nevada.

In 2019, New York enacted SB 6599, which revamped the state’s RPS to ensure disadvantaged communities receive 40% of the overall benefits of spending on clean energy programs and projects as part of the energy transition. In 2020, Virginia enacted SB 851, which made similar commitments to low-income and disadvantaged communities.

In 2021, Oregon’s emissions standards legislation (HB 2021) contained numerous provisions concerning equity and environmental justice. For instance, utilities under the legislation must convene a Community Benefits and Impacts Advisory Group that includes representatives from environmental justice communities and low-income ratepayers to assess the community benefits and impacts of the utility’s clean energy plan. Furthermore, the act’s Community Renewable Investment Program is tasked with providing direct benefits to disadvantaged communities in the form of energy resilience, economic development, energy cost savings and involvement in the siting, planning, and evaluation of community renewable projects.

Investments in disadvantaged communities can help the energy transition be more equitable. Washington SB 5126 established the state’s emissions trading market. Proceeds from the auction of emissions allowances are designated to be directed toward environmental justice communities and tribal nations. The Environmental Justice Council in charge of distributing the funds must ensure that 35% of investments are made in ways that benefit the most vulnerable communities.

**Addressing the Coronavirus Pandemic**

The impacts of the coronavirus pandemic on the energy sector, like most aspects of American life, were still prevalent throughout 2021. Emergencies can have far-reaching impacts throughout the economy, including impacts to the energy sector. State governments responded and adapted in necessary ways to ensure that energy service was largely uninterrupted and that states were prepared for future emergencies. In doing so, states considered various policies related to government authority during emergencies, the impacts on critical sectors and workers and what protections they would receive, and the financial implications for consumers and utilities.

**LEGISLATIVE OVERSIGHT OF EXECUTIVE POWER**

In the initial stages of the COVID-19 pandemic, state governments realized that a unified and consistent state-wide approach was necessary to address myriad issues created by the pandemic. As such, many of the early actions and orders came from the state executive branch under the governor’s emergency authority. However, as the pandemic continued much longer than many initially anticipated, state legislatures looked to restrict the governor’s authority and set limits on executive power.

For example, Kentucky SB 1 includes restrictions on the governor’s emergency powers that are generally applicable to executive orders issued under emergency declarations. The bill limits the term of the governor’s emergency orders to 30 days unless specifically requested by local government. Similarly, Utah SB 195 provides a state of emergency may be declared by the governor, but expires 30 days after issuance.
unless the legislature terminates or extends the emergency declaration by joint resolution. Despite these legislative restrictions and oversight, most state legislatures also recognized the importance of a swift and unified state response during the initial stages of an emergency and preserved the governors’ emergency powers during the first 120 days of emergency response.

**ESSENTIAL WORKER DESIGNATIONS**

Most workers in the energy industry were designated as “essential critical infrastructure workers” during the pandemic emergency. Other systems critical to the energy sector are also considered “essential” during times of emergency. These include, but are not limited to, the electric grid systems, grid control room operators, natural gas network, gas pipeline and transmission systems, renewable energy generation, and manufacturing and construction industry essential to energy systems.

At least 43 states and Washington, D.C., issued “essential worker designations” during the COVID-19 emergency. As the emergency response to the pandemic wanes, many state legislatures have considered codifying essential worker designations and establishing safety procedures, benefits and priority access to PPE, testing and vaccinations for essential workers.

Hawaii HB 643 (pending, carried over to 2022 regular session) adds a definition of “essential worker” to the state’s emergency management statute and adds protections for those workers so their work is not disrupted. The legislation would include workers employed by a business or service in the energy sector.

Other recent essential worker legislation is designed to provide benefits to those designated as “essential workers,” which often includes energy workers during periods of emergency. Maryland HB 581 mandates that employers provide safety protocols and equipment, subject to availability, for essential workers and allow essential workers to take “public health emergency sick leave” if a worker is sick or symptomatic.

New York is considering two pieces of legislation, SB 640 (pending, January 2021) and SB 519 (pending, January 2021), which would establish an “essential workers bill of rights” and provide essential workers with hazard pay during states of emergency. Energy employers would be required to provide PPE to workers at no cost to the employee and notify workers of potential exposure to COVID-19. The bills would require certain large employers to provide their essential employees with hazard pay and cover costs of childcare or health care if the employees were exposed to health and safety risks during work assignments.

**DISCONNECTION MORATORIUMS AND BILL PAYMENT ASSISTANCE**

A U.S. Census Household Pulse Survey in July 2021 found over 80 million Americans were having trouble paying bills like rent and utilities during the COVID pandemic. In 2020 and into 2021, many state legislatures considered establishing and extending utility disconnection moratoriums to protect individuals and families from losing access to essential services during hardships.

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Chicago Housing Authority counselors help Chicago residents with paperwork at a city Winter Assistance Event for bill-pay assistance organized by the State of Illinois, Cook County, City of Chicago and other local officials.

TIM BOYLE/GETTY IMAGES
For example, several states in 2021 extended moratoriums or other protections first enacted during 2020. Some of these came from the executive branch pursuant to legislative COVID measures or existing disaster laws. Others originated in the legislature. For instance, New York passed legislation in May 2021 that extended utility shutoff moratoriums through Dec. 21, 2021. Indiana extended its moratorium until 90 days after the disaster declaration ended. Most of these actions were limited to the duration of their states’ COVID-19 emergency declarations, and expired by the end of 2021, but a couple of states proposed bills extending protections into the future for vulnerable groups. Washington HB 1490, which was carried over from 2021 for consideration in 2022, would permanently extend the state’s moratorium on disconnections for low-income and disabled residents.

Several state legislatures have expanded access and funding for payment assistance programs to reduce customers’ energy burden or have required utilities to offer repayment plans to customers facing financial hardship. Oregon HB 2739, which caps monthly utility payments for low-income customers, requires utilities to collect fees to fund low-income assistance programs, and expands eligibility for COVID-related programs to those at or below 80% of the area median income. New Mexico, meanwhile, considered but did not pass HB 206 in 2021 to require utilities to offer repayment plans and possible debt forgiveness to COVID-impacted customers. Several other states have tied utility payments directly to income levels, discussed in the Energy Justice section of this report.

### Grid Modernization & Utility Regulation

Several states enacted legislation in 2021 seeking to harness new technologies and concepts to modernize the grid, leverage market opportunities and shift long-standing regulatory paradigms. These policies seek to accomplish a variety of outcomes, from enabling more dynamic energy management systems to facilitating market participation and shifting the focus of state regulation.

Maine enacted HB 1237 to explore the development of a statewide online energy data platform that could be used to implement new demand management programs. The law directs the state PUC to evaluate the potential for this type of platform, which would allow customers, utilities and third parties to access energy data that could be used to develop and implement programs to enhance efficiency, distributed generation, energy storage, and transmission and distribution improvements. The law emphasizes consumer privacy, requiring data to be aggregated and stripped of personally identifiable information.

Minnesota also worked to offer more demand management programs and other services to reduce costs and optimize energy use through the enactment of its Energy Conservation and Optimization Act (HB 164). The new law encourages utilities to offer programs to incentivize fuel-switching and building retrofitting, utilize rate design to manage demand, and develop programs to change market and consumer behavior. The programs are to be designed to maximize customer benefits—with an emphasis on low-income households—and optimize infrastructure to incorporate renewable energy.

Meanwhile, Illinois, North Carolina and Washington enacted measures to shift the focus of utility regulation away from a cost-of-service model to one that’s focused on achieving desired outcomes. Each state moved toward performance-based regulation (PBR) and multiyear rate plans (MYRPs), which jointly work to break the link between—or decouple—utility power sales and revenue. The idea is to better align utility interests with those of the state and customers.

Under the existing regulatory framework, utilities earn the bulk of their revenue through rates paid by customers based on power consumption—a model that somewhat perversely encourages greater consumption rather than efficiency and other demand-reduction measures. To decouple, PBR ties revenue to the utility’s ability to achieve outcomes—such as integration of renewable energy, enhanced reliability, affordability, demand-side management or customer satisfaction. The utility’s performance is regularly

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For More Information

More detailed information on this topic can be found on the NCSL webpage:

measured over a multiyear period against those performance objectives; if the utility has achieved the desired outcomes its revenue increases, while its revenue decreases if it falls short.

While Illinois, North Carolina and Washington each moved the needle on PBR and MYRPs, several differences exist between the policies. Illinois has tried to move its utilities toward PBR regulation through prior-enacted legislation, though the legislature determined those measures had come up short. As part of its comprehensive energy package (SB 2408), lawmakers took a more decisive step toward PBR by directing the state PUC to establish a PBR framework for electric utilities that serve over 500,000 customers. The framework is to be designed with a focus on the following objectives:

- Decarbonization
- Affordability and customer satisfaction
- Improved system reliability
- Integration of renewable and distributed energy resources
- Workforce diversification
- Addressing energy and environmental justice issues.

North Carolina HB 951 introduced PBR by allowing—but not requiring—electric utilities to apply for a performance-based MYRP. The law establishes many of the parameters to be used by the state PUC, including the requirement for an “earnings sharing mechanism” to ensure that customers share in any surplus earnings.

Washington SB 5295 establishes a requirement that all gas and electric utilities must file a performance-based MYRP proposal during every rate case before the state PUC. It requires the state PUC to develop a policy statement through stakeholder consultation, which clarifies what the state is looking for under this new regulatory paradigm. The new law also includes significant requirements around programs to assist and address long-standing energy burdens faced by low-income customers.

Finally, in the Western U.S., momentum continues to grow around the development of a regional transmission organization (RTO) to manage the high-voltage transmission grid and operate a regional wholesale electricity market. While around two-thirds of electricity in the U.S. is now served through RTOs, the Southeast and West are the exceptions.

However, there has been a growing interest in developing or expanding RTOs in these regions due to the potential for RTOs to more efficiently and effectively manage the grid and expand access to new markets. One recent study funded by the U.S. Department of Energy proposed that a single Western RTO could result in up to $2 billion in annual benefits by 2030. Another study by the Colorado Public Utilities Commission concluded the state’s utilities could save up to $230 million annually and effectively meet the state’s clean energy goals through participation in an RTO.

In 2021, Colorado (SB 72) and Nevada (SB 448) required utilities in those states to join an RTO by 2030, while Oregon (SB 589) required the state Department of Energy to establish a public process to investigate the potential benefits and drawbacks of requiring the state’s utilities to join an RTO. Montana SJR 33 also commissioned a study to examine the state electric grid’s capacity requirements, including the role that regional markets and RTO participation could play.

For More Information
For more on electricity markets, see NCSL’s “Electricity Markets: A Primer for State Legislators.”
Fossil Fuels

The past year continued a divergent trend in state action around fossil fuels. On the one hand, several states with clean energy goals continued to pursue policies to shift away from the use of fossil fuels, particularly the use of coal. On the other, several states with economies tied to fossil fuel production enacted policies aimed at preserving the use of fossil fuels, particularly the use of coal.

Additionally, at least 17 states moved over the past year to preempt municipalities from restricting the use of natural gas or other fuels in new buildings.

DIVERGENCE ON COAL

Many clean energy policies haven’t set deadlines for the closure of fossil-fired generation, instead allowing the clean energy requirements to serve as de facto phaseouts. However, Virginia moved in 2020 to require the closure of most coal-fired power by 2024, and two newly enacted laws in Illinois and North Carolina also establish deadlines for the closure of fossil-fired generation.

Illinois’ new clean energy law (SB 2408) requires coal plants owned by the state’s investor-owned utilities to shut down by 2030. The remaining coal plants and all gas-fired plants are required to shut down by 2045. It also sets aside $500 million to help convert some coal facilities to solar farms, while funding job retraining and educational program to help displaced coal industry workers.

North Carolina’s HB 951 requires the state PUC to identify “sub-critical” coal-fired facilities for early retirement and authorizes the securitization of costs associated with those closures. This has been a fairly popular method for states looking to limit customer exposure to stranded assets as utilities elect to close uneconomic coal facilities prior to their planned date of retirement. Colorado, New Mexico and Montana were three of the first states to allow for the securitization of costs associated with early coal retirements in 2019. This past year, Indiana (SB 386), Kansas (HB 2072) and North Carolina (HB 951) did the same, while similar measures passed each chamber in Missouri (SB 202) and Minnesota (SB 972). The Missouri bill ultimately failed due to adjournment, while the Minnesota bill carried over to the current session and remains in conference committee.

Alternatively, a handful of states enacted policies aimed at preserving coal-fired power plants, along with the associated jobs, tax base and other economic contributions. North Dakota enacted several relevant measures in 2021, including providing the coal industry with exemptions to certain taxes (HB 1412), limiting state regulation of coal-fired power plants (SB 2237) and providing for a study on lignite coal industry insurance (SB 2287). North Dakota also encouraged research and development of technologies to reduce carbon emissions from coal-fired plants through a Clean Sustainable Energy Fund (HB 1452) and by adopting a resolution that expresses the legislature’s support for CCS technologies (SCR 4012).

Arkansas enacted HB 1665, which encourages the state PUC to promote the continued use of existing generation through the end of its useful life. The PUC is directed to evaluate the useful life of existing generating units in the state on a three-year rolling basis, and to express the commission’s determination of whether continued operation of such units was in the public interest.

Meanwhile, Wyoming HB 166 creates a presumption against the retirement of coal- and natural gas-fired generation, which utilities must rebut to retire such generating units. The new law also eliminates cost-recovery for new electric generation intended to replace retired coal- or gas-fired generation. The state also took aim at policies in other states that might affect Wyoming’s coal industry by creating a fund to fight
those policies in court. HB 207 set aside $1.2 million to commence and prosecute lawsuits against other states and other states’ agencies that enact or enforce laws, regulations or other actions that impede Wyoming’s ability to export coal or cause the early retirement of coal-fired generation in Wyoming.

BUILDING ELECTRIFICATION AND NATURAL GAS BANS

As states and utilities consider methods of electrifying sectors that have traditionally been served by other energy sources, there has been a degree of predictable backlash to these initiatives. The movement to electrify heating and cooking systems in buildings is one recent example.

Several states and localities worked to enable building electrification in 2021. California AB 137 directs the Energy Commission to develop an initiative to support new, all-electric residential construction. Another bill, California SB 68, requires the Energy Commission to disseminate guidance and best practices to overcome barriers to building electrification, including model electrification plans and permit applications to streamline the process. It also provides funding for research into technologies that will reduce costs of electrification and its overall benefits to ratepayers and the state’s energy goals.

Massachusetts HB 3313 also aims to lower barriers to electrification by guaranteeing energy customers the right to connect distributed energy resources like rooftop solar or storage systems onto the grid, and ensuring prompt interconnection. It also caps how much a customer can be charged for interconnection, with any excess recoverable through the company’s rate base. New Mexico’s HB 15 provides additional tax bonuses for fully-electric construction, in addition to those mentioned under energy efficiency.

Looking forward, states may consider more legislation or regulations that would promote or even require new construction to be fully electrified. However, this trend is also playing out at the local level and sparking conflict between some state and local governments.

In 2019, Berkeley, Calif., became the first local government to prohibit the use of natural gas in new buildings as part of its emissions reduction policies. Since then, several local governments across the country have moved to enact similar policies. These policies most often ban natural gas hookups in new construction for multi-dwelling apartment buildings and commercial buildings, requiring buildings to electrify heating, cooking and other appliances. Those in favor of the bans argue that electric heating and appliances are more efficient and reduce emissions. Most recently, New York City banned natural gas hookups in new buildings and New York Gov. Kathy Hochul has put her support behind a statewide gas ban for new buildings.

However, these prohibitions have led to a different kind of prohibition as state legislators in some states moved to preempt this type of action by municipal governments, arguing they unfairly burden low- and middle-income residents by limiting access to cheaper resources. Four states—Arizona, Louisiana, Oklahoma and Tennessee—enacted new laws in 2020 that preempt local governments from restricting the use of natural gas and other fuels in new construction. This past year, another 17 states passed this type of legis-
lation, though North Carolina Gov. Roy Cooper vetoed HB 220, saying it would undermine the state’s transition to clean energy and strip local governments of their rightful authority. Twenty states have enacted “fuel choice” laws.

Perhaps threading the needle on this issue, Colorado enacted a new Clean Heat Standard (SB 264), which requires the state’s gas distribution utilities to reduce emissions 4% by 2025 and 22% by 2030. Under this innovative new policy, gas utilities have a variety of options to achieving the required emissions reductions, including efficiency measures, electrification and the incorporation of renewable natural gas and hydrogen.

**Fuel Choice Legislation 2021**

![Image of map showing enacted, vetoed, and no fuel choice laws]

Source: NCSL, 2021

**Conclusion**

Although it is still unclear what policy priorities will dominate the 2022 legislative sessions, state policymakers are introducing a wide range of measures that impact the energy sector. From examining policies that help or hinder specific energy sources to establishing mandates or guiding principles that seek to modernize energy systems, state lawmakers play an important role in shaping the future of the U.S. energy sector. This white paper serves as a resource highlighting the many state policies and considerations that state legislatures have proposed in recent years and how these policies may help inform future trends.
The National Conference of State Legislatures is the bipartisan organization dedicated to serving the lawmakers and staffs of the nation’s 50 states, its commonwealths and territories.

NCSL provides research, technical assistance and opportunities for policymakers to exchange ideas on the most pressing state issues, and is an effective and respected advocate for the interests of the states in the American federal system. Its objectives are:

- Improve the quality and effectiveness of state legislatures.
- Promote policy innovation and communication among state legislatures.
- Ensure state legislatures a strong, cohesive voice in the federal system.

The conference operates from offices in Denver, Colorado and Washington, D.C.

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