

## BACKGROUND

New Mexico's electricity portfolio is dominated by coal, wind, and natural gas. According to the U.S. Energy Information Administration (EIA), a variety of factors contributed to the [retirement](#) of several coal-fired electricity generation units in New Mexico, including falling natural gas prices, stricter air quality regulations, and California's decision in 2014 to stop purchasing electricity produced by coal.

The Land of Enchantment boasts substantial wind, solar, hydroelectric, biomass, and geothermal energy potential. Signed by Governor Michelle Lujan Grisham in March 2019, [Senate Bill 489](#) set a zero-carbon resource standard for the state, and increases the state's renewable portfolio standard (RPS) to at least 80% renewable energy by 2050. According to the most recent verified EIA [data](#) available, net generation from wind more than quadrupled in the last five years, increasing from 6.5% in 2015 to 30.2% in 2021.

New Mexico had [4,235 megawatts \(MW\)](#) of installed wind-generation capacity in 2021, with another 1,300 MW under construction. In 2022, the [Solar Energy Industries Association \(SEIA\)](#) ranked New Mexico 21<sup>st</sup> in the country in terms of installed capacity (1,289 MW) and 13<sup>th</sup> for projected growth (2,642 MW) over the next five years.

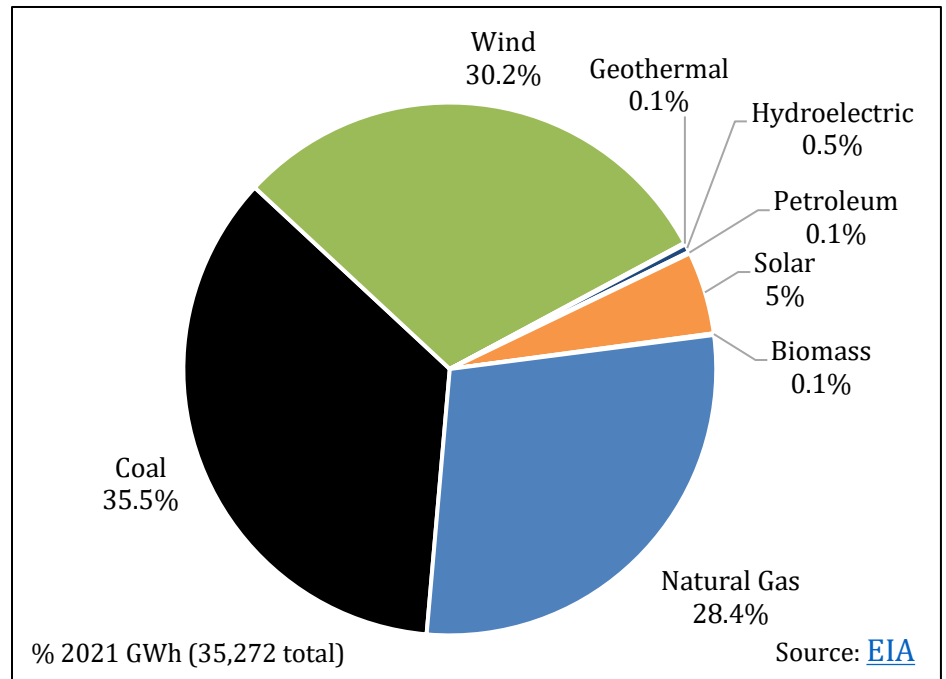
The [2022 U.S. Energy and Employment Report](#) found that [New Mexico](#) has 57,920 energy workers (7.3% of total state employment), which includes 5,712 workers employed in energy efficiency. In 2021, New Mexico [ranked](#) 45<sup>th</sup> nationally for clean energy jobs, with 11,115 New Mexicans employed by the industry.<sup>1</sup>

The New Mexico Public Regulation Commission ([NMPRC](#)) [regulates](#) three natural gas companies, 21 electric cooperatives, and three investor-owned utilities (IOUs) in the state. The NMPRC has five elected, term-limited members. Currently, there are four Democrats and one Republican serving on the commission, with Democrat Joseph Maestas as chair. Democratic majorities control both chambers of the [state legislature](#), and [Governor](#) Lujan Grisham is also a Democrat.

## POLICY STRENGTHS AND OPPORTUNITIES

The National Renewable Energy Laboratory (NREL) developed the notion of "policy stacking,"<sup>2</sup> an important framework for policymakers to consider. The basic idea behind policy stacking is that there is an interdependency and sequencing of state policy that, when done effectively, can yield greater market certainty, private sector investment, and likelihood of achieving stated public policy objectives.

New Mexico's Net Annual Electric Generation, 2021



<sup>1</sup> To see clean energy job numbers for your Congressional District, visit: <https://cleanjobsamerica.e2.org/#map>.

<sup>2</sup> V.A. Krasko and E. Doris. 2012. "Strategic Sequencing for State Distributed PV Policies: A Quantitative Analysis of Policy Impacts and Interactions." *National Renewable Energy Laboratory*. Available: <http://www.nrel.gov/docs/fy13osti/56428.pdf>.

In theory, but not always in practice, clean energy policies can be categorized into one of three tiers of the policy stack. Tier 1, market preparation policies, remove technical, legal, regulatory, and infrastructure-related barriers to clean energy technology adoption. Tier 2, market creation policies, create a market and/or signal state support for clean energy technologies. Tier 3, market expansion policies, create incentives and other programs to expand an existing clean energy market by encouraging or facilitating technology uptake by additional market participants.

For example, before financial incentives for combined heat and power (CHP) will be successful, two key considerations for deployment are having clear interconnection standards and favorable stand-by rates for customers who opt to add CHP. In this example, states should adopt policies to address interconnection and stand-by rates before adopting financial incentive programs.



## MODERNIZING UTILITIES AND EMPOWERING CONSUMERS

Digital technologies have enabled utilities to better manage the grid and provide opportunities for consumers to customize their services to fit their priorities. These technologies allow a two-way flow of information between the electric grid and grid operators and between utilities and their customers.

Emerging technologies improve system reliability and resiliency by enabling better tracking and management of resources. These technologies allow grid operators to incorporate central and distributed energy resources, energy storage technologies, and electric vehicles, and assist in addressing the challenges associated with planning, congestion, asset utilization, and energy and system efficiency.

On the customer's side of the meter, dynamic pricing, advanced metering infrastructure, and other technologies allow an exchange of information and electricity between a consumer and their electric provider. Grid modernization is associated with greater consumer choice by allowing customers to meet their energy priorities by producing their own energy or through contracting innovative clean energy services from different providers.

Grid modernization will require a suite of state and federal policy changes to support advancements in grid technologies, grid management, and utility regulation.

Enacted in March 2020, [House Bill 233](#), or the Energy Grid Modernization Roadmap, directs the Energy, Minerals, and Natural Resources Department (EMNRD) to outline a strategy for modernizing the state's electricity system, which EMNRD [published](#) in 2021. The bill also tasks the department with developing a competitive grant program to accept project proposals from municipal and county governments, state facilities, public schools, and tribal communities. Additionally, the act allows IOUs to submit applications to the NMPRC for cost recovery of grid modernization investments. Eligible projects include advanced metering infrastructure, real-time information devices, energy storage, cybersecurity measures, and electric vehicle charging infrastructure. [Sandia National Laboratories](#), headquartered in Albuquerque, engages in research and development for transmission and planning, grid resilience, distributed energy resource (DER) integration, and microgrids. Sandia also provided technical support to a [smart grid demonstration project](#) by the Public Service Company of New Mexico (PNM). The project was funded through the American Recovery and Reinvestment Act of 2009 (ARRA). [Announced](#) in September 2018, a \$20 million grant provided funding to establish the [Sustainable, Modular, Adaptive, Resilient, and Transactive \(SMART\) Grid Center](#) at the University of New Mexico.

The Infrastructure Investment and Jobs Act of 2021 (IIJA) is a landmark federal spending bill that includes funding earmarked for grid modernization projects. This includes \$11 billion for Department of Energy (DOE) grants directed specifically towards electric infrastructure resiliency projects (including grid hardening against severe weather and cybersecurity improvements), [\\$2.5 billion for transmission](#) development, and \$3 billion for the [Smart Grid Investment Matching Grant Program](#).<sup>3</sup> Enacted August 2022, the Inflation Reduction Act (IRA) set aside \$2 billion for loans for constructing new high-capacity transmission lines and upgrading interties. The bill includes

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<sup>3</sup> For more information on the grid-related earmarks included in the IIJA, see Potomac Law Group's January 2022 analysis: "The Infrastructure, Investment & Jobs Act of 2021: What's in It for You? (Part V: Grid Infrastructure and Resiliency)" <https://www.potomaclaw.com/news-Infrastructure-Investment-Jobs-Act-of-2021-Whats-In-It-For-You-Part-V-Grid-Infrastructure-and-Resiliency>.

funding for technical assistance and grants for states and tribal governments, which includes assistance for siting transmission projects. The bill also directs DOE to undertake interregional transmission planning, modeling, and analysis, including analysis of transmission for offshore wind and the use of grid-enhancing technologies (GETs).<sup>4</sup>

A 2020 [analysis](#) by Advanced Energy Economy (AEE) found that \$2 billion in investments in transmission and grid modernization (including technology and software development for residential and commercial energy management) in New Mexico could generate approximately \$3.8 billion in Gross State Product (GSP) and create 38,000 new jobs.<sup>5</sup>

There are policies that New Mexico’s policymakers could adopt to support in-state grid modernization efforts:

1. Develop a grid modernization strategy through a stakeholder process. Alternatively, states might decide to require that utilities develop and propose a ten-year grid modernization plan to the public utilities commission within a specified timeframe. Utilities would then be required to implement that plan within another specified timeframe. Strategies and/or plans should outline a clear set of grid modernization goals and describe methods to measure, report, verify, and enforce progress towards those goals.
2. States might also provide incentives or cost recovery mechanisms for utilities that meet grid modernization goals. Policymakers could consider directing the PUC to evaluate alternative ratemaking mechanisms, [performance-based regulation](#), and/or new utility business models that support grid modernization.
3. Require that utilities’ integrated resource plans (IRPs) include plans to enhance cybersecurity, integrate distributed energy resources (including electric vehicles and energy storage), increase smart meter deployment and demand response and/or demand-side management (DSM) programs, and measure and report on the results of grid modernization efforts.
4. State departments of workforce services or their equivalent can be directed to work with utilities and other stakeholders to develop training programs for grid technicians and engineers. With new grid technology and distributed energy systems coming online, a new generation of workers can be trained to meet evolving needs, which will keep jobs local and contribute to economic development.<sup>6</sup>

The adoption of incentives for or a requirement to integrate a certain amount of renewable energy and energy storage on the grid alongside enhanced building energy standards and electric vehicle policies can support grid modernization efforts.



## MAINSTREAMING RENEWABLES

Renewable energy is increasingly seen as the least cost and lowest risk form of energy (excluding energy efficiency). With increased deployment, utilities are learning more about how to integrate renewables effectively, investors are becoming more comfortable with the technologies, and building code officials are recognizing common standards and best practices for integrating distributed renewable energy resources. In the U.S., the expansion of renewable energy has been one of the most consequential shifts in electricity generation over the last decade. The U.S. Energy Information Administration (EIA) [predicts](#) that most of the growth in U.S. electricity generation in 2022 and 2023 will be from new renewable energy sources. It is in the interest of policymakers to ensure that their states are well positioned to benefit from this shift.

While the IIJA does not provide money for specific renewable energy projects, the energy funding in the Act will benefit renewable energy development as grid resiliency, increased deployment of energy storage, and modernized

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<sup>4</sup> J. Runyon and J. Engel. 2022. “The Inflation Reduction Act is Signed into Law.” *PowerGrid International*. 16 August. Available: <https://www.power-grid.com/td/the-inflation-reduction-act-is-signed-into-law/#gref>.

<sup>5</sup> P. Hibbard and P. Darling. 2020. “Economic Impact of Stimulus Investment in Advanced Energy: An Economic Assessment of Applying Stimulus Funds to Advanced Energy Technologies, Products, and Services in New Mexico.” *Analysis Group for Advanced Energy Economy*. October. Available: <https://www.aee.net/aee-reports/advanced-energy-state-economic-impact-reports-for-2020>.

<sup>6</sup> For a discussion of specific workforce needs states might explore see: GridWise Alliance and U.S. Department of Energy. 2020. [“Grid Modernization Index Insights into a Transformation: Principles for the Next Decade of Progress.”](#)

transmission are all essential to the successful integration of renewable energy generation. The IRA appropriated \$369 billion to fund a variety of energy and climate initiatives – the [largest](#) climate investment in U.S. history. The bill also extended the investment tax credit (ITC) and the production tax credit (PTC) through the end of 2024 and revived the PTC for solar projects. For projects placed in service in 2025, the bill “[effectively extended](#)” the ITC and PTC by creating new tax credits for zero emission facilities. The bill also extended the residential energy property tax credit through 2034 and created a new advanced manufacturing production credit, to apply to sales of components for constructing wind and solar energy facilities beginning in 2023.<sup>7</sup>

The IRA also includes several [provisions](#) related to energy equity, including \$3 billion to the Environmental Protection Agency (EPA) for grants for community-led projects in disadvantaged communities and \$27 billion for nonprofit, state, and local climate finance institutions supporting the deployment of low- and zero-emission technologies. In support of rural communities, the bill includes a \$1 billion appropriation to the U.S. Department of Agriculture (USDA) for loans to finance renewable energy projects, \$1 billion for USDA’s [Rural Energy for America Programs](#), and \$9.7 billion to USDA to finance rural electric cooperatives’ purchases of renewable energy.

A 2020 [analysis](#) by AEE found that a \$4 billion investment in solar and a \$1 billion investment in wind energy resources in New Mexico could add approximately \$18 billion to the GSP and create 127,000 new jobs.<sup>5</sup>

To reduce barriers to customer and utility participation in the renewable energy market, and to build upon the federal initiatives, policymakers in New Mexico might consider several options.

## Customer-Oriented Policies

- 1. Interconnection, Net Metering, and Streamlined Permitting** – In general, customers want a clear, streamlined, affordable, and predictable system for connecting renewable energy systems to the grid. To ensure this, New Mexico’s policymakers could consider adopting the Interstate Renewable Energy Council’s (IREC) [model interconnection procedures](#) and crediting net excess generation from net metered systems at the customer’s retail rate. Allowing [aggregated net metering](#) would be especially beneficial to the state’s agricultural operations. Other applications for aggregated net metering include commercial properties and public entities like state and local governments, universities, and schools. The state might also consider establishing either statewide standards for streamlined permitting processes, or resources to support local governments that voluntarily implement a streamlined program. In May 2021, NREL launched the [SolarAPP+](#), an online platform designed to automate the solar permitting process. By running compliance checks and processing permit approvals, the service is intended to drastically reduce permit wait times. Currently restricted to rooftop solar, [twenty](#) communities in Arizona and California have adopted the platform, processing over 7,750 permits for more than 51 MW of generation with an estimated 7,750 hours saved in permit review time.
- 2. Shared Renewables** – Due to building and property attributes and ownership issues, many customers are unable to install renewable energy technologies where they live or work. In 2021, Governor Lujan Grisham signed [Senate Bill 84](#), which sets guidelines for and allows [community solar](#) programs to begin operating in 2022. The bill also establishes a virtual net metering policy for the state. Virtual net metering allows a customer to receive credits from a shared system as if the generation were on site. Virtual net metering is different from a power purchase agreement (PPA), which pays the customer for the proportion of power they produce. Because it is treated as a credit on the customer’s bill, the customer can avoid the tax implications of a PPA payment - which can adversely affect the economics of the system (and may come as a surprise to the participant).

Low credit ratings often deter participation in renewable energy markets; this can affect low- and moderate-income (LMI) households’ adoption of renewable energy solutions. Supportive policies for shared renewables can be designed to encourage participation by LMI households; this can increase adoption of renewable technologies and reduce energy costs. Low-income participation can be ensured either through a percentage mandate for the overall annual contracted capacity, or by offering a higher rate of payment for the portion of shared solar capacity attributed to LMI customers. States that have a shared renewable program may want to

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<sup>7</sup> For a detailed discussion of the IRA’s tax provisions, see: A.S. Levin-Nussbaum. 2022. “Update: President Biden Signs Historic Legislation Providing Expansive Clean Energy Tax Incentives.” *The National Law Review*. 17 August. Available: <https://www.natlawreview.com/article/update-president-biden-signs-historic-legislation-providing-expansive-clean-energy>

coordinate this program with implementation of the federal [Weatherization Assistance Program \(WAP\)](#) or the [Low Income Home Energy Assistance Program \(LIHEAP\)](#) to provide recipients of assistance with access to participation in a shared renewable system.

3. **Adapt Energy Assistance Programs** – Programs such as the Low-income Home Energy Assistance Program ([LIHEAP](#)) and [WAP](#) provide assistance for paying utility bills and reducing household energy costs. Including distributed energy resources as eligible for funding under these programs can reduce energy costs and increase energy security for those LMI families who are able to benefit from WAP and LIHEAP. [Colorado](#), for example, includes [rooftop solar in their WAP program](#). For approval to add solar to a state’s implementation of WAP, a state must show that the investment would be [cost-effective](#) – achieving a Savings to Investment Ratio (SIR) of 1.0 or more.<sup>8</sup> Since 2010, New Mexico has received \$20.4 million from WAP and \$6.5 million from the [State Energy Program \(SEP\)](#) which has helped to fund a [number of energy initiatives](#) in the state.
4. **Fund Distributed Generation (DG) for Community Organizations** – Organizations or groups that provide support services for LMI communities can be provided funding to install solar or other distributed energy resources. Sites such as homeless shelters, food banks, clinics, and community centers often have enough rooftop area for solar installations. After installation, these resources can reduce an organization’s utility bills, freeing up funds for other activities that support the community.
5. **On-Bill Financing/Pay As You Save (PAYS)** – [On-bill Financing and Repayment](#) programs enable consumers to invest in energy upgrades with no upfront payment. The utility or a third party will pay the initial costs to install the upgrade with the cost of that upgrade recovered through the utility bill. Because repayment includes consideration of the cost savings resulting from the energy upgrade, customers can see monetary benefits almost immediately. Once equipment costs are recovered, the equipment belongs to the customer. State policies that reduce lending risk by creating a loan loss reserve and/or a credit enhancement fund can encourage lending to customers that might otherwise not qualify for a loan and can keep interest rates low.
6. **Corporate Procurement** – Many Fortune 100 and 500 companies have established either climate goals or commitments to purchase renewable energy. Since 2016, [over 41 gigawatts \(GW\) of renewable contracts](#) have been announced by corporate entities. In 2020 alone, corporations signed 100 agreements for over 10 GW of renewable energy. This is leading policymakers to provide additional avenues for businesses to procure renewable energy. With New Mexico’s substantial wind capacity and PNM’s [green energy rider](#), the state is becoming an attractive environment for corporate procurement of renewable energy. The NMPRC approved PNM’s plans to procure a total of 366 MW of renewable energy to power the Los Lunas [Facebook data center](#). [New Mexico’s policy](#) allows companies to purchase RECs or renewable energy through [green tariffs](#), develop or lease onsite renewable energy projects, and enter into onsite third-party PPAs. Policymakers in New Mexico might consider incorporating corporate renewable procurement targets into the state’s IRP process. By integrating these renewable purchase commitments into the IRP process, utilities can avoid over-building resources and stranding generation assets.

## Utility-Oriented Policies

Some states have created programs that aim to reduce greenhouse gas (GHG) emissions and increase investments in clean energy resources. Utilities are also setting their own GHG reduction goals and are increasingly investing in clean energy resources. New Mexico’s Energy Transition Act ([Senate Bill 489](#)) increased the state’s RPS to 80% by 2040 and created a new clean energy resource standard of 100% carbon-free energy by 2045 for IOUs and 2050 for cooperative utilities. Utilities in the state are taking the lead in clean energy by incorporating more renewable resources in their energy portfolios. In January 2021, PNM reiterated their [goal](#) to provide 100% carbon free electricity by 2040.

To increase utility adoption of clean energy technologies, New Mexico’s policymakers might consider the following:

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<sup>8</sup> For guidance on the state approval process, see [WAP Memorandum 024 \(2017\)](#), the [Solar Template for Incorporating Solar Photovoltaics into WAP](#), and the [Preliminary Assessment Guide for Integrating Renewable Energy into Weatherization \(2019\)](#).

1. **Emissions Standards** – Emissions targets can take a technology neutral approach that looks at the total emissions of the utility portfolio and drives emissions down with a combination of renewables, traditional fuels, efficiency, and technological advances. Emissions reductions can be achieved through 1) a carbon portfolio standard approach, or 2) a market-based approach. A portfolio emissions standard sets emissions reduction targets to be achieved over time. This can be implemented through the IRP process or by establishing a maximum allowable rate of emissions per unit. Under a market-based approach, a state or a group of states might set a certain emissions reduction target, for example, 50% below 2005 levels by 2025. This reduction is achieved by the distribution of annual emission allowances that decrease to the point that the standard is met in 2025. One of the advantages of a market-based program is that it is designed to reduce emissions in the most economically efficient manner possible. Such a standard can also address other concerns such as pollution, asthma risk, environmental justice, and water use.
2. **Clean Peak Standards (CPS)** – [Clean Peak Standards](#) aim to increase the share of clean energy resources used to meet peak demand and decrease energy bills over the long-term by reducing peak demand in the hours when energy costs are highest. These objectives can be met through different policy options, including planning and procurement that focuses on peak demand; a moratorium on the construction of new peaking units or a phase out of existing units; incentives – including carve-outs in states with RPSs – for clean energy resources delivered during peak times; and/or adopting a new clean peak standard that sets a target for clean energy deliveries during peak times.



## ENERGY STORAGE

Energy storage offers a unique opportunity to dynamically manage supply and demand while also maximizing the value of grid resources. By deploying storage to strategic locations, utilities can more effectively manage their energy portfolios. First, storage allows utilities to manage intermittent demand – helping reduce peak demand requirements. Because the generation resources that provide peak power are the system’s most expensive, reducing peak demand can save consumers money. Second, the responsiveness of energy storage can allow utilities to implement voltage regulation and other ancillary services, which improve system efficiency. Third, because storage technologies can both store and dispatch power, storage enables better integration of intermittent power generation resources, like wind and solar, to the grid.

The flexibility of battery storage combined with advanced metering infrastructure can allow customers to control how and when they use energy from the grid or from solar panels installed on their home or business. In most cases, this can provide greater cost savings than standalone solar systems. Combined with [time-varying rates](#) or real-time pricing programs, state policy can further support customer choice and open a new market for energy services. Prices that better reflect the time-varying and location-dependent costs of producing and delivering electricity can also lead to a number of economic and environmental gains.

Energy storage can also help the commercial sector avoid [demand charges](#), which establish an incremental cost above energy usage based on the highest period (highest 15 minutes, for example) of demand during the month. Eliminating spikes in demand with storage can reduce these costly charges for businesses. As utilities around the country consider implementing or extending demand charges to other sectors, energy storage will become more relevant as both a customer cost-saving investment and a system efficiency measure.

Declining costs and technological advancements in battery storage have contributed to increased deployment. State policies can further encourage this by establishing both a framework for easy integration of energy storage resources onto the grid and a marketplace that monetizes the benefits of energy storage for cost-effective investment.

While New Mexico does not have a state-mandated energy storage procurement target or goal, the NMPRC voted unanimously in 2017 to mandate the inclusion of [energy storage](#) in utilities’ IRPs as a commercially feasible energy resource. Following the order, PNM [issued](#) a request for proposals for renewable and energy storage projects totaling 456 megawatts (MW). PNM also maintains a 500 kilowatt (kW) [solar-plus-storage](#) demonstration project in partnership with the U.S. Department of Energy, Sandia Laboratories, and the University of New Mexico. Enacted in 2019, [Senate Bill 489](#) includes energy storage as an eligible technology in the state’s renewable and clean energy standards.

The IIJA provides a unique opportunity for funding energy storage projects. According to an [analysis](#) by the Energy Storage Association, the IIJA provides \$505 million for grants to support energy storage demonstration projects, \$6.15 billion for building out the U.S. battery supply chain, and \$14.7 billion for grid resilience programs that include energy storage as a qualified technology. The [IRA](#) extended the ITC to include standalone energy storage systems. When the ITC is replaced by the technology neutral Clean Electricity Investment Tax Credit (CEITC) in 2025, qualified storage facilities placed in service after 2024 will remain eligible. The advanced manufacturing production credit, established by the bill, will apply to battery cells and modules and the critical minerals used in their production. The \$27 billion GHG Reduction Fund, also established by the bill, will provide funding enabling low-income or disadvantaged communities to adopt zero-emission technologies including energy storage.

A 2020 [analysis](#) by AEE found that a \$3 billion investment in energy storage in New Mexico could add approximately \$2.6 billion to the GSP and create 32,000 new jobs.<sup>5</sup>

There are several policy opportunities to take advantage of the growing technological advances in and declining costs of energy storage and build upon recent federal initiatives. The recommendations here draw heavily from IREC's 2017 report, "[Charging Ahead – An Energy Storage Guide for Policymakers](#)." Policymakers in New Mexico could consider the following:

1. Amend [existing interconnection policies](#) to ensure that storage can connect to the grid through a transparent and simple process. [IREC](#) has produced a series of interconnection protocols that states can easily adopt. The state could establish best practices for interconnecting storage in statute, or legislation could provide an instruction to the NMPRC to update existing policy.
2. Consider creating a mandatory energy storage procurement target or requirement for energy storage with a documented process for periodic review of progress towards that goal. Procurement targets can limit the amount of utility owned storage; require that a certain amount of storage be targeted to low-income customers; and create carve-outs for storage at the transmission, distribution, and customer levels. Procurement targets can jump-start market creation, spur fast learning, and guide the development of a regulatory framework. In 2017, the NMPRC [denied](#) requests to adopt an energy storage target due to a lack of adequate data to establish a clear benchmark.
3. Finance and incentivize energy storage for customers and utilities. Incentives could enable customers to use storage to manage their electric load and store locally produced renewable energy. Incentives in the form of rebates, grants, and tax credits can provide a bridge to scalable deployment of storage. Incentives can be designed to decline as storage values become more readily monetized and/or as the cost of storage decreases. Policymakers could allow utilities that provide incentives to customers to recover the costs of installing smart meters. This would enable dynamic and time-varying energy management from multiple distributed battery systems. This could also signal to customers the value of leveraging storage and better align customer costs with system costs. Financing energy storage installations for commercial customers could help reduce their demand charges. Policymakers might want to start first with a policy that provides grants to pilot projects. Policy might also target solar system owners. Financial incentives should be designed to ensure that the state will meet other goals including emissions and peak demand reductions, and equitable access to clean energy.
4. Clear data access policies that allow third parties to provide energy management services based on signals from the utility can greatly increase the value of efforts to monetize the value stream offered by energy storage. State policy should include measures to protect customer data, while also encouraging the use of this information to facilitate additional improvements to grid management and customer services. To address this, policymakers can develop legislation or rules that clarify who owns the energy data associated with customer energy usage; protect customer privacy; outline the process for allowing direct access to data by third parties; and promote access to the highest resolution of data possible.



## THE BUILT ENVIRONMENT

In the U.S., buildings consume nearly 40% of total energy used.<sup>9</sup> Because it reduces energy demand and emissions, and creates savings for utility customers, energy efficiency<sup>10</sup> often plays a prominent role in state energy and climate policies. Coupled with [beneficial electrification](#), which involves replacing direct fossil fuel use with electricity, there is even greater potential to reduce energy costs and pollution, and provide more resilient, comfortable, and healthy buildings. This is especially the case in states where increasing levels of low carbon resources are supplying the electric grid. When policies are adopted to shift energy uses based on fossil fuels (such as natural gas) for building heating, water heating, and appliances, to highly efficient electric alternatives, states can maximize achieving the dual objectives of increased energy efficiency and reduced emissions. In some cases, this can also result in lower energy costs.

New Mexico has taken several steps to incorporate energy efficiency and beneficial electrification into its built environment. The New Mexico Regulation and Licensing Department has [adopted](#), as mandatory building code, the International Energy Conservation Code (IECC) 2018 Edition, with amendments.

New Mexico has allowed energy savings performance contracting (ESPC) for public facilities since 1995. The state's program is supported by the [New Mexico Energy Service Coalition](#), a public-private partnership co-chaired by the New Mexico Energy, Minerals, and Natural Resources Department. [House Bill 291](#), The Efficient Use of Energy Act of 2019, made a number of reforms to [utility business models](#) in the state including allowing utilities to request revenue decoupling and performance incentives. The bill also updated energy efficiency resource standards (EERSs) for utilities.

In 2021, [House Bill 15](#) amended New Mexico's [Sustainable Building Tax Credit](#) to require that buildings attain a higher level of Leadership in Energy and Environmental Design (LEED) certification to be eligible for the tax credit. The bill also [provides](#) bonuses for more extensive sustainability achievements and extends tax credits to energy conservation improvements to existing commercial and residential buildings. Enacted in 2022, [House Bill 37](#) establishes the Community Energy Efficiency Development Block Grant program to be administered EMNRD which will provide funding for community level energy efficiency upgrades.

The IJA provides \$500 million for grants to fund energy efficiency and renewable energy upgrades in public schools, \$3.5 billion for the Weatherization Assistance Program, and further funds the [Energy Efficiency and Conservation Block Grant](#) program by \$550 million and the [State Energy Program](#) by \$500 million. The [IRA](#) appropriates \$4.3 billion to DOE for an energy efficiency rebate program that will be administered through state energy offices. Another \$4.3 billion appropriation will fund electrification rebates for single- and multi-family homes. The bill also extends the tax credits for residential energy efficiency improvements and new efficient home construction and increases the maximum deduction for energy efficient commercial buildings. A \$837.5 million appropriation will be used by the Department of Housing and Urban Development (HUD) for resiliency, energy efficiency, renewable energy, and grid integration projects at public housing units.

A 2020 [analysis](#) by AEE found that a \$5 billion investment in energy efficiency in New Mexico could add approximately \$73 billion to the GSP and create over 430,000 new jobs.<sup>5</sup>

Policymakers in New Mexico can consider a variety of policies to encourage energy efficiency and beneficial electrification:

### Energy Efficiency Policies

1. **Building Codes** – The Department of Energy projects that, over time, improvements in building codes can have the greatest single impact in energy efficiency within the built environment. On average, commercial buildings

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<sup>9</sup> For additional information, see [ACEEE Building Policies and Codes](#).

<sup>10</sup> Energy efficiency includes a multitude of measures to reduce the energy consumption of a building. These measures range from installing energy efficient appliances to full building renovations updating a building envelope.



waste 30% of energy used.<sup>11</sup> Because buildings will be around for generations, energy efficiency within the built environment is a matter of statewide and long-term importance. States can set requirements for energy systems, require disclosure of energy use, and set performance standards for energy use or emissions. Building codes can be required by state legislation or implemented through ‘home rule,’ where local governments set their own standards.

The IIJA appropriated \$225 million for a competitive grant program to support the “sustained cost-effective implementation of updated building energy codes.” The grant program will run for five years, through fiscal years 2022 – 2026. On July 21, 2022, DOE issued a [Notice of Intent](#) (NOI) to publish a funding opportunity to support the implementation of “resilient and efficient” building energy codes. This competitive grant program requires the participation of a “relevant state agency” and projects must be tied to “an updated building energy code.”

- 2. Appliance Efficiency Standards** – [Appliance efficiency standards](#) set minimum requirements for efficiency in everything from washing machines to water heaters. Efficiency standards save consumers money on utility bills and reduce energy demand on the grid, most importantly reducing peak energy demand. Some states have elected to adopt the federal appliance standards that were in effect on January 1, 2017.<sup>12</sup> These include, among other things, standards on metal halide lamp fixtures, residential furnaces and boilers, and external AC to DC power supplies.
- 3. Energy Saving Performance Contracts (ESPCs)** – ESPCs are a financing mechanism for energy efficiency upgrades. ESPCs are often used within large institutions, such as college or government campuses, allowing them to meet their energy and environmental goals. An energy service company will pay the upfront cost of efficiency upgrades and execute the project, often guaranteeing the projected energy savings. The large institution will then pay back the service company with savings from their utility bills. This allows institutions to pay for their upgrades from their operating budget, instead of finding new financing, such as loans or bonds, for capital upgrades. Essentially, they pay their upgrade costs with their energy savings.

New Mexico has a robust [ESPC program](#) that has facilitated over \$280.4 million in contracts since 2013. These contracts have saved 127,470 MWh of electricity and provided \$12.6 million in utility savings.

- 4. Low-Income Energy Efficiency Programs** – While equity should be incorporated into all policy development, it is often necessary to ensure that specific programs are targeted towards historically underserved populations. Recent research suggests that weatherization can reduce energy use by [25-35%](#), allowing households to reduce their financial energy burden. The federal [Weatherization Assistance Program](#) (WAP) provides energy efficiency upgrades for income qualified homeowners. However, in many states there is difficulty in reaching individuals who may be eligible. Lawmakers can pass legislation requiring outreach and education to groups eligible for WAP. New Mexico’s [LIHEAP program](#) currently offers assistance with energy bill payment.
- 5. Energy Efficiency Resource Standards (EERS)** – EERS require utilities to demonstrate a reduction in energy demand from programs offered to their consumers. Because this means selling less energy and reducing revenues, there is not always an incentive for utilities to make their consumers more productive or efficient users of energy. If legislatures want to ensure a more productive and efficient energy distribution system that takes advantage of the latest technological innovations, they may want to require that a utility demonstrate a percent reduction in demand through efficiency or “demand side” programs. Legislators can also instruct their utility commissions to consider energy efficiency when approving rate cases by allowing cost-recovery of energy efficiency improvements on utility bills.

[House Bill 291](#) established New Mexico’s [current EERS](#), requiring public utility efficiency programs to achieve electric energy savings of at least 5% of total 2020 sales through programs offered in 2021 through 2025. The bill also required the Public Regulation Commission to adopt energy savings targets and performance incentives for 2026 through 2030.

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<sup>11</sup> For more information, see the Office of Energy Efficiency & Renewable Energy’s [Commercial Buildings Integration \(CBI\) Program](#).

<sup>12</sup> Based upon research conducted by the Center for the New Energy Economy.

6. **Revenue Decoupling and Performance-Based Incentives** – Utilities earn revenue by selling energy. As a result, there is little to no incentive for them to promote energy efficiency because it leads to a reduction in sales, and therefore a reduction in revenue. Revenue decoupling disconnects revenue from the amount of energy sold. This provides utilities a set amount of revenue regardless of the amount of energy sold. While this does not directly incentivize energy efficiency, it does remove the inherent disincentive to promote energy efficiency.

Incentive policies can be layered on top of a decoupling policy. For example, if a utility meets set energy reduction targets, performance-based incentives, as determined by a state's PUC, can provide monetary rewards for meeting those targets. As noted above, utilities in [New Mexico](#) receive performance incentives. As the electricity generation mix changes, it is important to incorporate a regular review of decoupling and other incentive policies to ensure they are still meeting their intended purpose.

## Electrification Policies

1. **Strategically Target Beneficial Electrification** – Target areas of beneficial electrification in buildings include space and water heating systems and other systems and appliances that typically use natural gas or another fossil fuel as an energy source. According to the Environment and Energy Study Institute, new electric heat pump technology can heat space and water at efficiencies of 200 to 300%, compared to 67% efficiency in typical Energy Star gas water heaters.<sup>13</sup> This not only allows savings on energy bills, it also results in reduced greenhouse gas emissions and improved indoor air quality.
2. **Adopt Tools for Advancing Electrification Policies** – Building codes and financial incentive programs can be used to advance beneficial electrification. While in some states, local governments are primarily responsible for adopting and implementing building energy codes, in other states, a state legislature, or a code commission tasked by the legislature, adopts and implements statewide standards. Incentive programs established and implemented by states, local governments, or utilities can target replacing systems and appliances that traditionally rely on fossil fuel resources with high efficiency electric systems and appliances including water heaters, furnaces, ovens, and ranges. As an example, [heat pump water heaters](#) and space heating systems are being promoted as high efficiency replacements for traditionally fossil-based equipment. In conjunction with utility regulatory policy, these technologies can also serve as demand response management tools by utilities in exchange for compensation to the ratepaying customer.

As a note, cities across the country are implementing new building codes promoting beneficial electrification by limiting or banning the installation of natural gas in new construction. State legislatures can pass enabling legislation, allowing municipalities to make independent decisions on beneficial electrification. On the other hand, some states have adopted pre-emptive legislation, banning local governments from adopting policies that limit utility service.<sup>14</sup>

Programmatically, there will always be greatest benefit by combining measures – incentives that bundle improvements will generate greater gains than individual measures. For example, a high efficiency heat pump will be much more effective and efficient when coupled with improved building insulation. Rather than only realizing the gains of the new mechanical component, this combination of measures will increase the efficiency of the entire system.



## ELECTRIFICATION OF THE TRANSPORTATION SECTOR

Bloomberg New Energy Finance [estimates](#) that nearly 80% of new car sales in the U.S. will be electric by 2040. Therefore, a key part of building a modernized grid involves designing infrastructure that will facilitate easy connection of electric vehicles (EVs) to the grid. One of the most important barriers to increased adoption of EVs is the consumer's awareness of the availability of EV charging stations. Ultimately, drivers want to be sure that their car will get them where they need to go. The good news is that both supportive policies for developing charging infrastructure and technological advancements have eased this "range anxiety."

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<sup>13</sup> For more information, see [EESI's Beneficial Electrification](#).

<sup>14</sup> See, "Battle Brews over Banning Natural Gas to Homes." The Wall Street Journal, 1 June 2021, <https://www.wsj.com/articles/battle-brews-over-banning-natural-gas-to-homes-11622334674>.

A few [incentives](#) for alternatively fueled vehicles are currently available in New Mexico. As part of implementing [House Bill 20-233](#), or the Energy Grid Modernization Roadmap, EMNRD will develop a grant program to support grid modernization. This will [include](#) EV charging infrastructure. Manufacturers of electric and hybrid electric vehicles are eligible for a [tax credit](#). Additionally, EVs and EV charging equipment are eligible improvements under the state's [guaranteed utility savings contracts](#) program.

Enacted March 2019, [House Bill 521](#) requires electric utilities, except for rural distribution cooperatives, to file an application with the NMPRC for approval of a transportation electrification plan by 2021. Each utility's plan can address investments, incentives, programs, rate designs, and other expenditures that support transportation electrification. In its review of a plan, the NMPRC is required to consider a number of factors. These include the potential improvement of the public utility's electrical system efficiency, the integration of variable resources, operational flexibility and system utilization during off-peak hours, increased access to the use of electricity as a transportation fuel generally and by low-income users in underserved communities specifically, and the contribution to any reduction in pollution or GHGs ([Fiscal Impact Report](#)). Both [PNM](#) and [Xcel Energy](#) submitted their 2022-2023 Transportation Electrification Programs in 2021.

Governor Lujan Grisham's [Executive Order 2019-003](#) included a direction that state agencies evaluate the adoption of low emission vehicle (LEV) and zero emission Vehicle (ZEV) standards. On July 9, 2019, Governor Lujan Grisham, as a member of the U.S. Climate Alliance, signed the [Nation's Clean Car Promise](#) to support the creation of a national clean car standard. In May 2022, the Environmental Improvement Board (EIB) adopted the [Clean Car Rule](#) which adopts certain California vehicle emissions standards for new vehicles beginning with model year 2026. The American Council for an Energy-Efficient Economy (ACEEE) published a [State Transportation Electrification Scorecard](#) in 2021 that evaluates states' progress in electrifying transportation in six key policy areas and offers nationally applicable policy recommendations. New Mexico ranked 29<sup>th</sup> out of the 31 states ranked in the report.

The IIJA provides nearly [\\$5 billion](#) over the next five years to support the electrification of the transportation sector. In 2022, \$615 million will be made available for the installation of charging stations along designated alternative fuel corridors. The Act also provides approximately \$1.1 billion for grants to state and local governments to assist with the purchase or lease of low- or no-emission vehicles for transportation fleets. To be eligible, a state must have a [Zero-Emission Fleet Transition Plan](#) in place.

The [IRA](#) extended the \$7,500 EV tax credit for purchases of new plug-in EVs through 2032 and removed the eligibility cap based on number of vehicles sold by manufacturers. The Act includes requirements for material sourcing that must be met by manufacturers starting in 2027. The IRA also created a new \$4,000 refundable tax credit for the purchase of used EVs and a new credit for commercial EVs. Appropriations in the Act include \$1 billion for replacing medium- and heavy-duty vehicles with EVs, \$3 billion to fund projects to reduce transportation sector emissions, and \$3 billion to procure alternatively fueled vehicles for the federal fleet.

A 2020 [analysis](#) by AEE found that a \$4 billion investment in EVs including financial incentives to reduce up-front costs of purchases and state support for charging infrastructure deployment in New Mexico could add approximately \$18 billion to the GSP and create 150,000 new jobs.<sup>5</sup>

There are opportunities to expand the market for EVs in New Mexico:

1. **Charging Infrastructure Plan** – Locating [charging infrastructure](#) is different from locating conventional fueling stations. While some drivers will need to charge more quickly, others will refuel when they are parked for longer periods of time, for example when shopping at the mall or going to work. Charging infrastructure plans should attempt to pair the appropriate level of charging (level 2 or direct current fast charging) with a reasonable amount of time a person will be at that location. Legislation could direct a state agency to develop an infrastructure plan through a stakeholder process.

The IIJA included a new National Electric Vehicle Infrastructure (NEVI) formula grant program to provide dedicated funding to states to deploy charging infrastructure with the goal of creating an interconnected network of vehicle charging stations across the nation's highways. To be eligible to receive funding, states must develop and submit a NEVI plan to the Federal Highway Administration (FHWA) by August 1, 2022. NEVI funds cannot be obligated until a state's plan is approved by the FHWA. The New Mexico Department of Transportation

developed and submitted a [NEVI state plan](#) to coordinate the use of New Mexico's expected allocation of \$38 million in formula funding from the IIJA.

2. **Parking Infrastructure Requirements** – In tandem with the development of a statewide plan, legislation could set requirements for parking lots and other infrastructure. Some states have adopted permitting standards for parking lots, requiring, for instance, that for every 100 parking spaces, there must be at least one EV charging space. Legislation could also incentivize utilities to develop [make-ready locations](#). These locations supply power to the point where a utility or third-party developer might install an EV charging station. New Mexico's [Statewide Building Energy Codes](#) could also be updated to include requirements for EV charging infrastructure.
3. **EV and EV Charging Equipment Financing and Financial Incentives** – Providing financial incentives and innovative financing options can help spur greater market penetration of EVs. Sales, property, and income tax credits are some of the simplest methods for addressing the high up-front costs of EVs and EV charging equipment. While sales tax credits are typically applied at the time of purchase, property and income tax credits may do less to address upfront cost barriers, as the credit is not applied at the time of purchase.<sup>15</sup> States have adopted other financial incentives including low-interest loans, grants, vouchers, and rebates. A handful of states qualify EV charging equipment under their property assessed clean energy (PACE) programs. A simple solution is to increase and expand existing tax credits to incentivize commercial, publicly available charging stations.

Regional collaborations around the U.S. are emerging to coordinate the development of EV infrastructure. New Mexico is a signatory of the [REV West Plan](#), a collaborative effort among western states to construct a regional EV charging corridor. The memorandum of understanding (MOU) intends to reduce transportation sector carbon emissions, bolster EV adoption, increase consumer awareness about the benefits of EVs, coordinate development of charging infrastructure, and incentivize manufacturing of EVs.

States might consider adopting programs to incentivize the purchase of used EVs. With increasing battery capacities and falling prices, there are an increasing number of EVs with relatively low mileage that are being traded in. States might also consider programs that target low- and moderate-income (LMI) customers that may not qualify for a loan directly. Such a program could facilitate sales through such things as loan loss reserve and interest buy down programs.

## NEWS

- August 31, 2022: [Los Alamos-Led Federal Rapid Response Team to Support Four Corners Energy-Based Communities](#)
- August 31, 2022: [New Mexico Prepares for Increased Power Grid Demands as More Electric Vehicles Hit the Road](#)
- August 29, 2022: [How Far Is New Mexico From Statewide Electric Vehicle Chargers?](#)
- August 15, 2022: [New Mexico Offering Grants to Build Electric Vehicle Infrastructure](#)
- August 8, 2022: [Ameren Seeks FERC Rate Approval for N.M. Transmission Lines to Ship Power from 680-MW Clearway Wind Project](#)
- August 8, 2022: [Solar Farm Proposed South of City Could Power 23,300 Homes in New Mexico](#)
- August 3, 2022: [Santa Fe Is Home to New Mexico's First Net-Zero Energy Housing Unit](#)
- May 6, 2022: [New Mexico's Clean Car Rule Will Go into Effect July 1](#)

## OTHER RESOURCES

- New Mexico State Energy, Minerals and Natural Resources Department: <http://www.emnrd.state.nm.us>
- American Clean Power Association, New Mexico State Fact Sheet: [https://cleanpower.org/wp-content/uploads/2022/07/New-Mexico\\_clean\\_energy\\_factsheet.pdf](https://cleanpower.org/wp-content/uploads/2022/07/New-Mexico_clean_energy_factsheet.pdf)
- The American Council for an Energy-Efficient Economy State and Local Policy Database, New Mexico: <https://database.aceee.org/state/new-mexico>
- The Database of State Incentives for Renewables and Efficiency, New Mexico: <https://programs.dsireusa.org/system/program/nm>

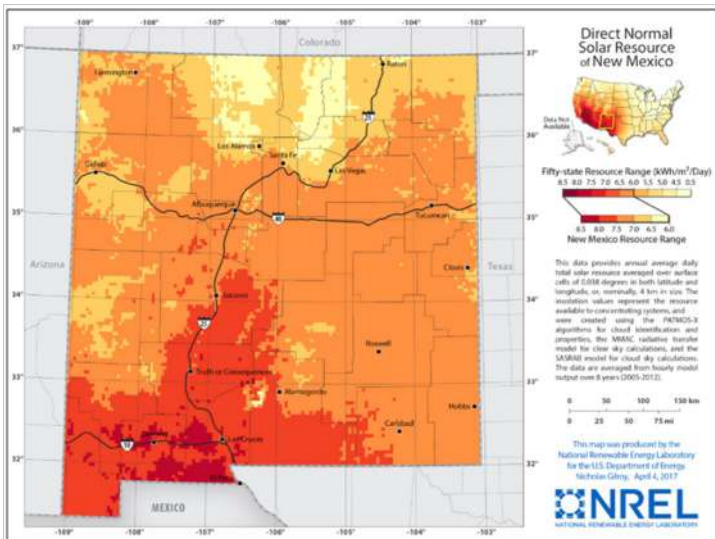
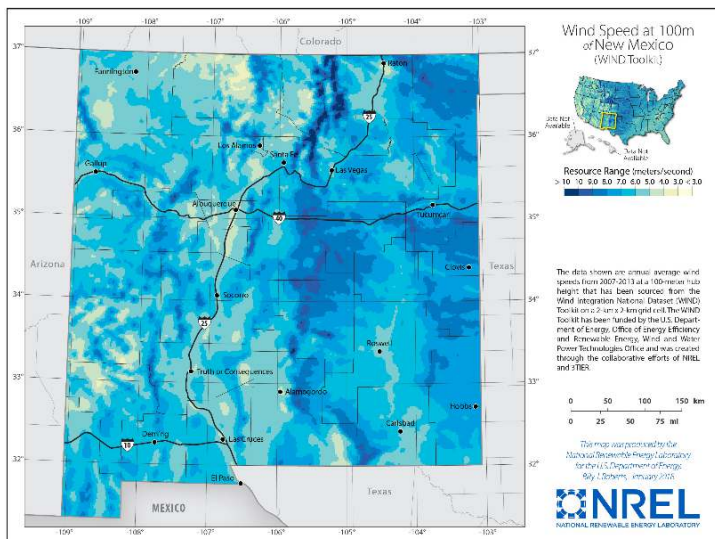
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<sup>15</sup> A [study](#) by the Congressional Research Service suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles.

- U.S. Department of Energy's Alternative Fuels Data Center, New Mexico: <https://afd.energy.gov/states/nm>
- U.S. Energy Information Administration, New Mexico: <https://www.eia.gov/state/?sid=NM>
- SPOT for Clean Energy, New Mexico: <https://spotforcleanenergy.org/state/new-mexico/>

## NEW MEXICO'S WIND AND SOLAR RESOURCES

WIND <https://windexchange.energy.gov/states/nm>



## Our Resources

CNEE Homepage: <https://cnee.colostate.edu/>

The SPOT for Clean Energy: <https://spotforcleanenergy.org/>

The Advanced Energy Legislation (AEL) Tracker: <https://www.aeltracker.org/>

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