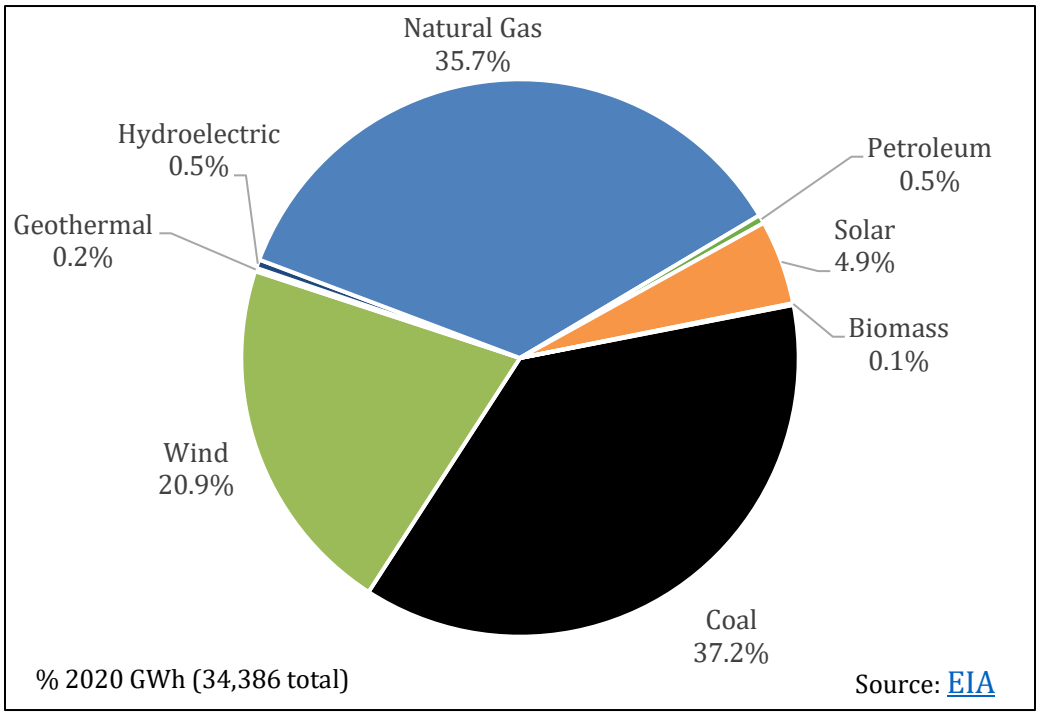
# State Brief: New Mexico

## BACKGROUND

New Mexico's Net Annual Electric Generation, 2020




New Mexico's electricity portfolio is dominated by coal and natural gas. The proportion of electric generation from coal has declined by approximately 47% since 2013. According to the EIA, a variety of factors contributed to the retirement of several coal 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 U.S. Energy Information Administration (EIA) data available, net generation from wind more than tripled in the last five years, increasing from 6.5% in 2015 to 20.9% in 2020.

By the end of 2019, New Mexico utility-scale solar comprised 5% of in-state generation and the state ranked in the top three states for solar potential. New Mexico produced 2,558 megawatts (MW) of wind-power by the end of 2020, accounting for 21% of the state's utility-scale generation. In 2020, the Solar Energy Industries Association (SEIA) ranked New Mexico 43rd in the nation for projected solar energy capacity growth.

The 2020 U.S. Energy and Employment Report found that New Mexico has 44,112 traditional energy workers (5.3% of total state employment). In 2020, New Mexico ranked 46th nationwide for clean energy jobs (including jobs in efficiency and solar) and the industry employed 11,116 New Mexicans.[1]

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 Theresa Becenti-Aguilar as chair. Democratic majorities control both chambers of the state legislature, and Governor Lujan Grisham is also a Democrat.

[1] This is in addition to the number of traditional energy jobs in the state.

## POLICY STRENGTHS AND OPPORTUNITIES

The National Renewable Energy Laboratory (NREL) developed the notion of "policy stacking,"[2] 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.

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.

## GRID MODERNIZATION

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, 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. The department is tasked 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. A final roadmap is expected to be released in 2021. 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.

There are supportive policies that policymakers could adopt to support ongoing modernization efforts.

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

1. Develop new utility business models. Today, non-traditional energy resources, including emerging, disruptive technologies (for example, customer-owned distributed generation, electric vehicles, and energy storage) are increasingly cost competitive with more traditional resources. This has not only led to shifting customer expectations but also to new market realities confronting energy providers. In light of this, many argue that the regulated utility industry needs a new set of principles that are more sophisticated, forward-planning, and incentive-based. Policymakers could consider directing the NMPRC to evaluate alternative ratemaking mechanisms, performance-based regulation, and/or new utility business models that support grid modernization.

2. Require that utilities' integrated resource plans (IRPs) include plans to enhance cybersecurity, integrate DERs (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.

3. The technologies associated with grid modernization generate a wealth of information about the grid itself and about customer behavior. State policy should include measures to protect this data, but can also encourage the use of this information to facilitate additional improvements in grid management and customer service. To address this, policymakers can develop legislation or rules that clarify who owns the energy data associated with consumer 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. States could establish customer access to energy data through the Green Button Connect program, for example.

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.[3]

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

## ENERGY STORAGE

Energy storage offers a unique opportunity to manage supply and demand dynamically 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 are useful for improving system efficiency. Third, because storage technologies can both store and dispatch power, storage enables better integration of intermittent power generation resources like renewable energy to the grid. Finally, energy storage can help the commercial sector avoid costly demand charges. As utilities around the country consider implementing or extending demand charges to other sectors, energy storage will become more relevant as a customer cost-saving investment.

The flexibility of battery storage, combined with advanced metering infrastructure, allows customers to control, for instance, 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 lead to several economic and environmental gains.

[3] For a discussion of specific workforce needs that 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."

Two major trends have enabled increased deployment of energy storage: declining costs and technological advances. State policies can help maximize these benefits 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.

There are several policy opportunities to take advantage of the growing technological advances in and declining costs of energy storage. The recommendations here draw heavily from the Interstate Renewable Energy Council's (IREC) 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. The Interstate Renewable Energy Council (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 for 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 should signal to customers the value of leveraging storage while better aligning 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.

## MAINSTREAMING RENEWABLES

As the renewable energy industry matured, technology improved, and global production of generating equipment increased. Renewable energy is increasingly seen as the least cost and lowest risk form of energy (excluding energy efficiency). A 2021 Energy Information Administration report predicts that the share of the United States' electricity generation mix supplied by renewable energy resources will increase from 21% in 2020 to 42%

by 2050. 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 these reasons, it is in the interest of policymakers to ensure that their states are well positioned to benefit from the transition to clean and sustainable energy resources.

To reduce barriers to customer and utility participation in the renewable energy market, New Mexico might consider several policy 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 IREC's model interconnection procedures and crediting net excess generation 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, as Las Cruces has done. State incentives, such as tax credits, financial incentives, or loans can be tied to systems that are established within a designated streamlined permitting jurisdiction.

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. Senate Bill 84 includes a 30% capacity carveout for LMI persons and service organizations. States that have a shared renewable program may want to coordinate this program with implementation of the federal Weatherization Assistance Program to provide recipients of assistance with participation in a shared renewable system.

   There are several additional policy options that New Mexico might consider to promote renewable energy uptake by LMI consumers. Generally, successful state policies should be tailored to these customers, be cost-effective and financially sustainable, have measurable performance indicators, and be flexible enough to allow later changes in design.

3. **Corporate Procurement** – Many Fortune 100 and 500 companies have established either climate goals or commitments to purchase renewable energy. Since 2016, nearly 31 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 signed off on PNM's plan to procure 266 MW of renewable capacity to power the Los Lunas Facebook data center, making it one of the single largest corporate PPAs signed in 2018. 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. The products available in New Mexico meet all six of the Corporate Renewable Energy Buyers' Principles, and the state was ranked 2nd overall in the Retail Industry Leaders Association's 2020 rankings of state corporate procurement policies. It is prudent to incorporate corporate renewable purchase commitments into the IRPs that utilities submit to regulators to plan for resource needs over multiple decades. By integrating these renewable purchase commitments into the IRP process, regulators 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. 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-fee 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. Regulators approved a plan proposed by PNM to phase out all coal generation by 2031. In January 2021, PNM reiterated their goal to provide carbon free electricity by 2040.

New Mexico might see a clean peak standard as a next step. 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 requirements that focus 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.

## ELECTRIFICATION OF THE TRANSPORTATION SECTOR

An estimated 58% of new car sales 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 "range anxiety."

A few incentives for alternatively fueled vehicles are currently available in New Mexico. As part of implementing House Bill 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 and state and local agencies are eligible for loans to support the purchase of alternative fueled vehicles, including EVs. 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. These are pending approval.

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 2019, Governor Lujan Grisham announced the planned adoption of clean car standards by the end of 2020, set to go into effect in 2022. The American Council for an Energy-Efficient Economy (ACEEE) published

a State Transportation Electrification Scorecard evaluating 29 states' progress in electrifying transportation in six key policy areas. New Mexico ranked 29th in the 2021 report.

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

1. **EV and EV Charging Equipment Financing and Financial Incentives** – Providing financial incentives and innovative financing options can help spur greater market penetration of EVs. Although New Mexico has some financial incentives in place, to increase adoption the state might consider implementing additional incentives. Sales, property, and income tax credits are some of the simplest methods for addressing 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.[4] 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.

2. **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.

   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.

3. **Parking Infrastructure Requirements** – In tandem with the development of a statewide plan, legislation could set requirements for EV parking 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. New Mexico's building energy code could also be updated to include requirements for EV charging infrastructure.

**NEWS**

- July 1, 2021: Science, AI Help Unlock Green Energy in Northwest New Mexico
- June 25, 2021: Xcel Energy Sets Wind Energy Record in Texas-New Mexico Service Area
- June 22, 2021: NMSU's Arrowhead Center Receives DOE Grant for Clean Energy Tech Development in New Mexico
- June 18, 2021: Can the Sun Solve New Mexico's Energy Conundrum?
- June 16, 2021: Community Solar Projects to Begin in New Mexico in April 2022, Applications Pouring In
- June 9, 2021: Renewable Energy Transmission Project in New Mexico to Boost 'Clean Power' Exports
- May 24, 2021: International Firm to Buy Power from New Mexico Wind Farms
- May 8, 2021: Electric Vehicle 'Ecosystem' Planned for Northern New Mexico
- May 7, 2021: Xcel Energy Offers Solar Option for New Mexico Customers
- April 22, 2021: EMNRD Approves Close to 2,000 Solar Tax Credits in First Year of Implementation

**OTHER RESOURCES**

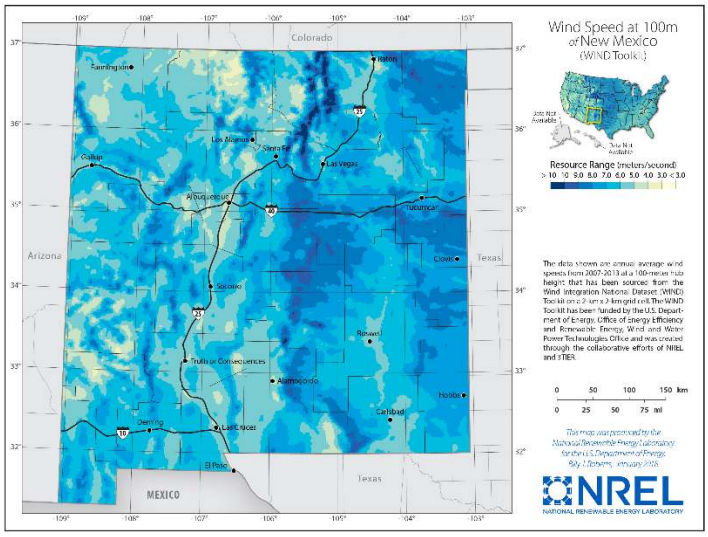
- New Mexico State Energy, Minerals and Natural Resources Department: http://www.emnrd.state.nm.us

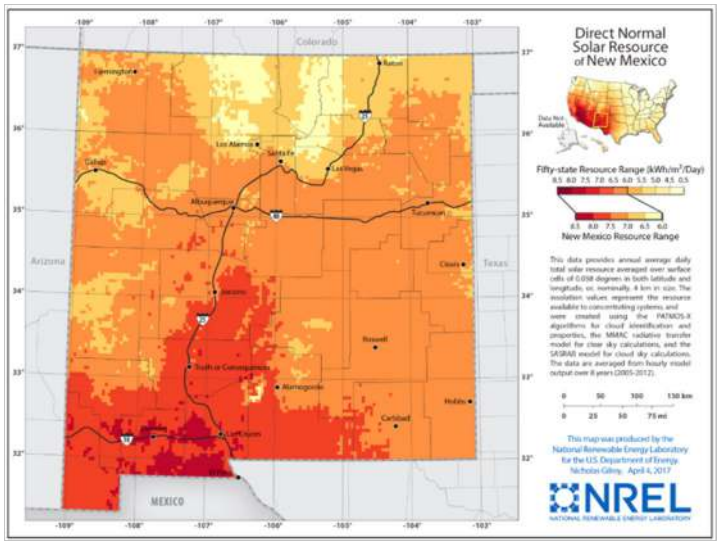
[4] A study by the Congressional Research Service suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles.

- American Clean Power Association, New Mexico State Fact Sheet: https://cleanpower.org/wp-content/uploads/2021/05/New-Mexico_clean_energy_factsheet_Q2-2021.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?fromSir=0&state=NM
- U.S. Department of Energy's Alternative Fuels Data Center, New Mexico: https://afdc.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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