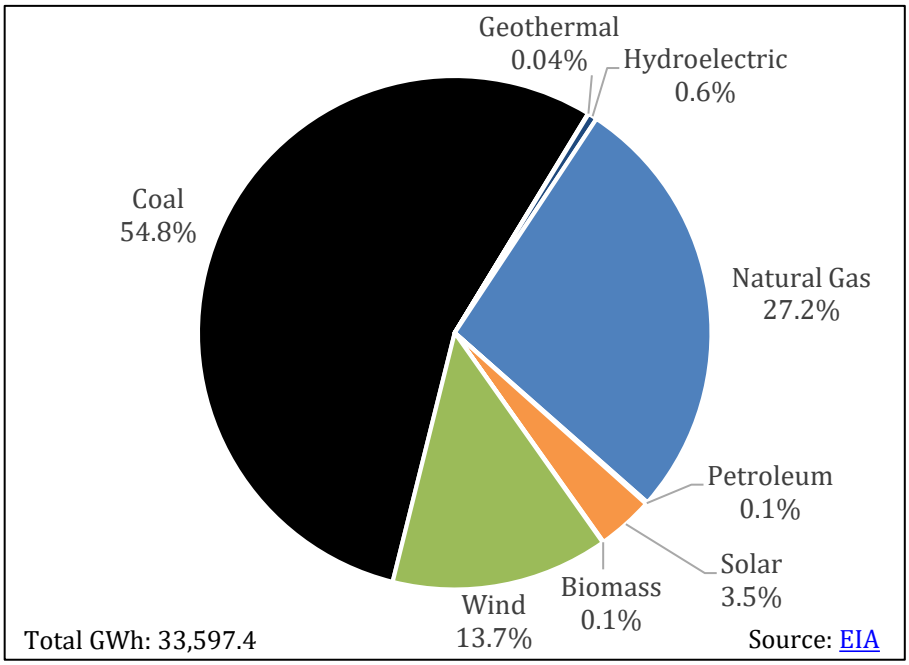
State Brief: New Mexico

BACKGROUND

New Mexico consistently ranks in the top ten states for oil and natural gas production. While the state generates most of its electric power from coal and natural gas, the proportion of electricity generated from coal has declined by approximately 40% since 2005. 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.

New Mexico's Net Electric Generation, 2017



A 2019 report by the National Association of State Energy Officials and the Energy Futures Initiative found that New Mexico has 40,197 traditional energy workers (4.9% of total state employment) and an additional 5,636 workers employed in energy efficiency. According to the most recent verified U.S. Energy Information Administration (EIA) data available, installed wind capacity doubled between 2015 and 2017 –increasing from 6.5% to 13.7%. 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 sets 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.

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

POLICY STRENGTHS AND OPPORTUNITIES[1]

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 in order to

[1] For more information on policy opportunities, please visit the SPOT for Clean Energy. For more information on specific policy actions related to these opportunities, please review the *Clean Energy Policy Guide for State Legislatures*.

[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.

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

The transition to a digital economy requires affordable, sustainable, and reliable electricity and presents challenges and opportunities to the grid. Emerging physical and cyber security threats, along with increased demand for faster outage response times, require, at minimum, real-time incident tracking and response capabilities. Increased grid penetration of renewable energy coupled with the adoption of advanced metering, energy storage, microgrids, electric vehicles, and other technologies to modernize our electric system will provide economic benefits, increase security, and ensure more reliable, resilient, and clean electricity. These innovations will require substantial planning and investment in grid technologies.

Grid modernization will require a suite of state and federal policy changes to support advancements in grid technologies, grid management, and utility regulation. Grid modernization strategies, while recognizing regional and inter-state diversity and avoiding one-size-fits-all plans, should take a holistic view of the electric system.

Although the GridWise Alliance's latest Grid Modernization Index ranks New Mexico in the bottom 10 states for grid modernization efforts, the state is in a good position to act. 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 established using American Recovery and Reinvestment Act of 2009 (ARRA) funds. Announced in September 2018, a $20 million grant will fund a Sustainable, Modular, Adaptive, Resilient, and Transactive (SMART) Grid Center at the University of New Mexico. According to Senator Tom Udall, "The SMART Grid Center will link leading colleges and universities with our world-class national labs to advance important research into more efficient, secure and reliable energy management…By bringing together researchers, students, academics and scientists throughout the state, it will also help train the next generation of STEM workers and energy sector leaders."

There are policies that New Mexico's policymakers could adopt to support in-state 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. The NMPRC opened an investigation (17-00046-UT) of new financial incentives and methods of cost recovery for regulated assets in March 2017. The case appears to have stalled. Policymakers could consider directing the NMPRC 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. New Mexico does not have clear state policies governing customer data access and privacy protections. To address this, policymakers should develop legislation or rules that, at minimum, do the following: 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.

Southwestern Public Service Company has implemented Green Button access for customers in its service territory. The state could also require customer access to energy data through a program like Green Button.

ENERGY STORAGE

Energy storage offers a unique opportunity to dynamically manage supply and demand while maximizing the value of grid resources. By deploying storage in strategic locations, utilities can more effectively manage their energy portfolios. First, storage provides management of intermittent demand – helping to flatten peak demand requirements for the utility. Second, the responsiveness of energy storage can allow the utility to implement voltage regulation and other ancillary services, which are useful for improving system efficiency. Third, storage can dispatch power to better integrate intermittent resources like renewable energy.

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 a number of economic and environmental gains.

Two major trends have enabled increased deployment of energy storage: declining costs and technological advances. State policy can help maximize these benefits through a combination of establishing a framework for easy integration of energy storage into the grid and establishing a marketplace that monetizes the benefits of energy storage for cost-effective investment.

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.

There are opportunities for developing supportive state policies:

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 PUC to update existing policy.

2. Instruct utilities to evaluate the value of energy storage in multiple strategic locations across the utility system and consider a requirement to deploy storage where it will be cost effective, or identify the price point at which it will become cost effective.

3. Require the inclusion of energy storage as a critical piece of the energy system as both a demand and supply management resource. Some states have required that utilities evaluate the cost effectiveness of non-wires alternatives (NWAs) to large transmission and generation investments. Alternatively, states might want to require that utilities develop a distribution investment plan that identifies the locations on the distribution system where energy storage or other distributed resources would offer the greatest value.

4. 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.

5. 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. New Mexico's Advanced Energy Tax Credit program, which provides credits for storage paired with renewable energy systems, could be expanded to include residential customers.

6. 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. (See discussion above, under Grid Modernization.)

MAINSTREAMING RENEWABLES

As the renewable energy industry has matured, technology has improved, and global production of generating equipment has increased, renewable energy is increasingly seen as the least cost and lowest risk form of energy (excluding energy efficiency). A 2019 Bloomberg New Energy Finance report predicts that renewable resources will generate at least 60% of total global electricity and 43% of U.S. electricity 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 energy resources.

To reduce barriers to customer and utility participation in the renewable energy market, 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 IREC's model interconnection procedures, removing net metering system size limitations 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. Allowing shared, or community, renewable energy projects addresses these barriers. These projects have multiple owners or subscribers who pay for a portion of the project or the generation provided by the system. New Mexico might consider adopting a virtual net metering policy. 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

coordinate this program with implementation of the federal Weatherization Assistance Program or the Low Income Home Energy 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 low- and moderate-income 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. Over the last five years, over 16 gigawatts (GW) of renewable contracts have been announced by corporate entities. 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. 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. New Mexico was the third state, joining California, the District of Columbia, and Hawaii, to establish a 100% clean energy target. 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 April 2019, PNM set a goal to provide emissions free electricity by 2040.

The Energy Transition Act includes provisions for the refinancing of aging coal plants to support the transition toward renewables with a policy tool called securitization. Securitization restructures utilities' unpaid debt on non-competitive coal plants, allowing them to pay reduced interest rates with ratepayer-backed bonds to minimize the economic effects of closures for coal communities. A portion of bond proceeds goes toward funding jobs-focused transition assistance programs and renewable energy initiatives. This enables coal-owning utilities to retire coal plants ahead of schedule while promoting a just energy transition. SB 489's securitization measures were designed to facilitate PNM's closure of the San Juan generating station.

Executive Order 2019-003, signed by Governor Lujan Grisham in January, commits the state to joining the U.S. Climate Alliance, establishes a GHG emissions reductions goal of 45% below 2005 levels by 2030, and creates a Climate Change Task Force charged with evaluating policies and developing a strategy to meet this goal. The order also requires the development of a statewide regulatory framework to reduce oil and gas sector methane emissions.

New Mexico might see a clean peak standard as the next step in a progression from its RPS. 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

Bloomberg New Energy Finance estimates that 57% of all new passenger vehicle sales will be electric by 2040 and that price parity with conventional vehicles will be met for most segments in the mid-2020s. Designing

infrastructure that will facilitate easy connection of EVs to the grid is a key part of building a modernized grid. The relationship between the increased adoption of EVs and the availability of EV charging stations is complicated. On the one hand, consumer range anxiety creates a barrier to increased adoption. On the other hand, while greater availability of charging stations would ease this anxiety, the relatively low numbers of vehicles on the road provides little incentive to install and make these stations available to the public. The good news is that both supportive policies for developing charging infrastructure and advancements in technology have eased range anxiety.

A few incentives for alternatively fueled vehicles are currently available in New Mexico. Governor Lujan Grisham's Executive Order 2019-003 includes 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.

There are several policy opportunities to further encourage and prepare for increased market penetration of EVs in the state, including:

1. EV and EV Supply Equipment (EVSE) 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 high up-front costs of EVs and EVSE. 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.[3] States have adopted other financial incentives including low-interest loans, grants, vouchers and rebates. A handful of states qualify EVSE 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. New Mexico offers an advanced vehicle manufacturing incentive with a job creation requirement. State facilities and educational institutions are eligible to use a revolving loan fund to finance alternative vehicle acquisitions.

2. Charging Infrastructure Plan – Locating charging infrastructure is different from locating conventional fueling stations. For the most part, EVs are cars used for commuting and local trips. Furthermore, while a driver of a conventional vehicle stops only briefly at a gas station for the specific purpose of filling up, a driver of an EV is generally looking to refuel when they are parked for a longer period of time, for example when going shopping, going to a restaurant, or going to work. Charging infrastructure plans should attempt to pair the appropriate level of 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.

   New Mexico joined Arizona, Colorado, Idaho, Montana, Nevada, Utah, and Wyoming in signing the Regional Electric Vehicle West (REV West) memorandum of understanding to create an Intermountain West EV Corridor. The goal is to develop best practices and voluntary minimum standards for stations, expand access to new EVs, and create consistent charging experiences.

   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 use of electricity as a transportation fuel generally and by low-income users in underserved communities, and the contribution to any reduction in pollution or greenhouse gases (Fiscal Impact Report).

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. 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 building energy code could also be updated to include requirements for EV charging infrastructure.

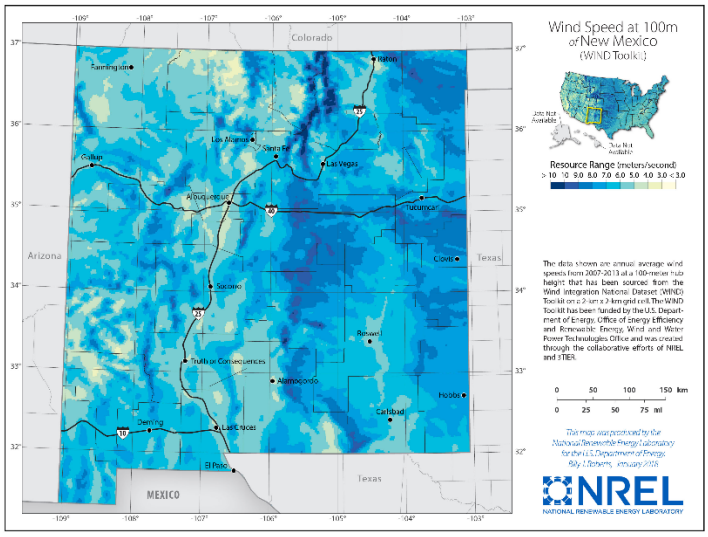
[3] A study by the Congressional Budget Office however suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles.

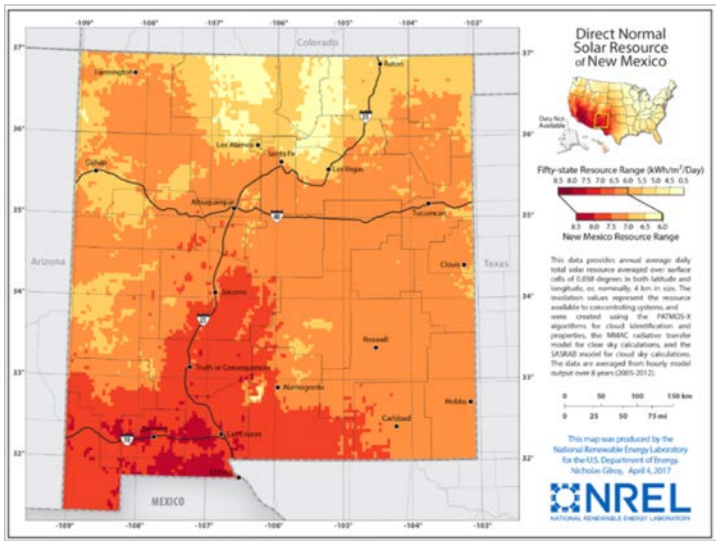
NEWS

- August 7, 2019: New Mexico Ranked 3rd in the Nation for Wind Energy Development
- July 20, 2019: New Mexico Utility Seeks Feedback on Closure of Coal Plant
- July 3, 2019: PNM Proposes Gas, Solar+Storage Mix as Cheapest Option to Replace San Juan Coal Plant
- May 2, 2019: Xcel Nearly Done With Grid Modernization Project in Roswell
- April 22, 2019: PNM Chief: Utility Will be Emissions Free 5 Years Ahead of Schedule
- April 17, 2019: New Mexico Seeks Energy Savings in State Building Upgrades
- April 8, 2019: New Mexico Governor Signs Efficiency Bill Decoupling Energy Use From Utility Revenue
- March 29, 2019: Tucson Electric Power to Double Its Renewable Energy Output with New Mexico Wind Project
- March 22, 2019: Lujan Grisham Signs Landmark Clean Energy Bill
- March 13, 2019: In Midst of An Oil Boom, New Mexico Sets Bold New Climate Goals
- March 6, 2019: Xcel on Board with Carbon-free Legislation
- February 26, 2019: Possible Reprieve for New Mexico Coal Plant is a Surprise for PNM
- February 25, 2019: Energy Transition: Oil & Gas Taxes to Fund Solar
- February 22, 2019: PNM Firmly Supports Clean Energy Initiative
- February 4, 2019: No Time to Waste: What Lies Ahead in New Mexico on Methane Policy?
- February 1, 2019: Governor Lujan Grisham, Rep. Nathan Small Announce Renewable Portfolio Standard Legislation

NEW MEXICO'S WIND AND SOLAR RESOURCES

WIND https://windexchange.energy.gov/states/nm
SOLAR https://www.nrel.gov/gis/solar.html





OTHER RESOURCES

- New Mexico Energy, Minerals, and Natural Resources Department: http://www.emnrd.state.nm.us/
- 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: http://programs.dsireusa.org/system/program?fromSir=0&state=NM
- U.S. Energy Information Administration, New Mexico: https://www.eia.gov/state/?sid=NM
- American Wind Energy Association (AWEA): https://www.awea.org/resources/fact-sheets/state-facts-sheets
- National Renewable Energy Laboratory Biomass Maps: https://www.nrel.gov/gis/biomass.html
- U.S. Department of Energy's Alternative Fuels Data Center, New Mexico: https://www.afdc.energy.gov/states/nm
- SPOT for Clean Energy, New Mexico: https://spotforcleanenergy.org/state/new-mexico/
- The Rocky Mountain Institute: From Gas to Grid – Building Charging Infrastructure to Power Electric Vehicle Demand

- The GridWise Alliance: EVs - Driving Adoption, Capturing Benefits
- The Regulatory Assistance Project: Performance-Based Regulation

Our Resources

CNEE Homepage: http://cnee.colostate.edu/

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

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

Clean Energy Policy Guide for State Legislatures: http://cnee.colostate.edu/cleanenergypolicyguide/

The Energy Policy Podcast: http://energypodcast.colostate.edu/

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