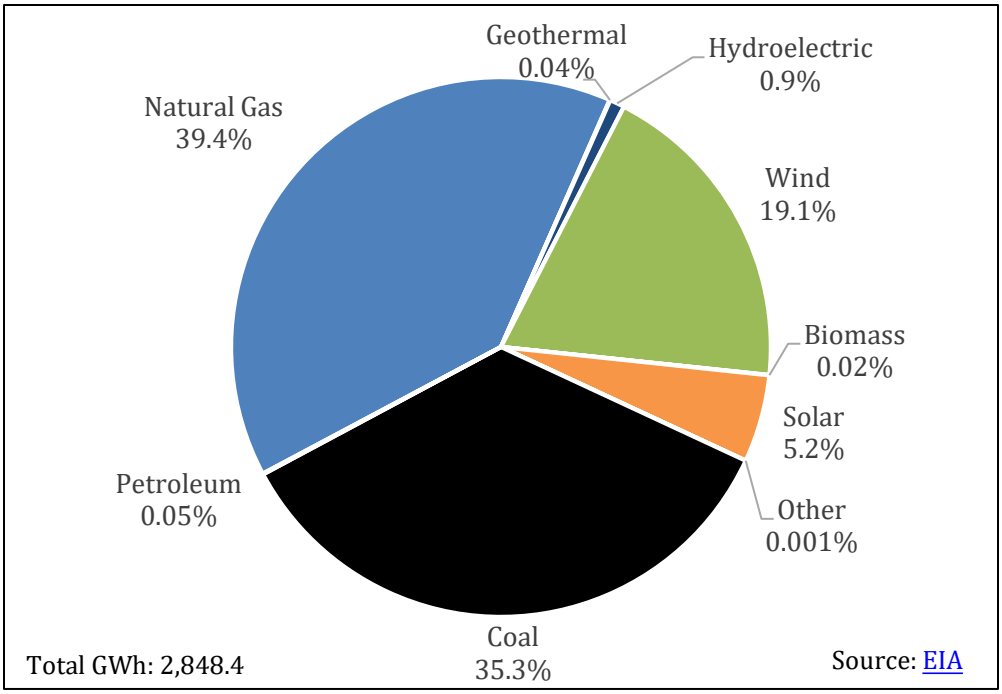
State Brief: New Mexico

BACKGROUND

New Mexico consistently ranks in the top ten states for oil and natural gas production. The state generates most of its electric power from coal and natural gas. The proportion of electricity generated from coal has decreased in recent years; coal provided two-thirds of New Mexico's electricity generation in 2013. This is due to a variety of factors, including low natural gas prices, stricter air quality regulations, and California's decision in 2014 to stop purchasing coal-fired electricity, which led to the retirement of several coal plants in New Mexico.

New Mexico's Electricity Mix, June 2018



Installed wind capacity has doubled in the past two years, increasing from 6.5% in 2015 to 13.5% in 2017, according to the most recent verified U.S. Energy Information Administration (EIA) data available. The state's renewable energy market is supported by a mandatory renewable portfolio standard (RPS) which sets a target of 20% renewable electricity generation by 2020 for investor-owned utilities (IOUs). New Mexico also offers a range of financial incentives for renewable generation and solar installations. The state's regulatory commission is currently examining the ways in which the Land of Enchantment can encourage growth of renewable energy and reduce carbon emissions from the power sector. In October of 2017, the New Mexico Public Regulation Commission (NMPRC) approved a proposal for scheduling workshops on a clean energy standard that would require that utilities reduce carbon dioxide emissions by 4% each year through 2040.

The NMPRC regulates three natural gas companies, 21 electric cooperatives, and three IOUs in the state. The NMPRC has five elected, term-limited members. Currently, there are four Democrats and one Republican commissioner, with Democrat Sandy Jones serving as chair. Democratic majorities control both chambers of the state legislature, and sitting Governor Susana Martinez is a Republican.

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.

[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.

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 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

Policymakers can view grid modernization as creating a policy structure that supports and ties together many other initiatives, such as smart metering infrastructure, customer data management, energy storage, electric vehicle infrastructure, and utility business models.

In the last two decades, new 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, advanced metering infrastructure, dynamic pricing, and other emerging technologies allow an exchange of information and electricity between a consumer and their electric provider.

Even though 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 take action. The 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 provides technical support to a smart grid demonstration project of Public Service Company of New Mexico (PNM). The project was established using American Recovery and Reinvestment Act of 2009 (ARRA) funds.

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. States may also decide to require that utilities propose a ten-year grid modernization plan within a specified timeframe. Legislation could require plans to outline a clear set of grid modernization goals and describe methods to measure, report, verify, and enforce progress towards those goals. States might also provide incentives or cost recovery mechanisms for utilities to meet grid modernization goals. The NMPRC's current investigation of new methods of cost recovery for regulated assets could be extended to incorporate incentives for utilities seeking to make power system improvements. A standardized method for the state's ratemaking policies, if designed to reward performance against public policy goals such as increased energy savings, could remove utility disincentives for grid upgrades. In 2017, the NMPRC opened an investigation to study the potential for implementing performance-based regulation in utility rate design.

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. 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. The state could establish customer data access to energy data through the Green Button Connect program, for

example. Southwestern Public Service Company has implemented Green Button access for customers in its service territory.

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. Finally, energy storage can help the commercial sector avoid costly demand charges. As utilities around the country consider extending demand charges to the residential sector, this will become an even more important issue.

The flexibility of battery storage, combined with advanced metering infrastructure, allows 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 lead to a number of economic and environmental gains.

Storage provides multiple benefits to both the customer and the utility. State planning and regulatory policies can help maximize these benefits by 1) establishing a framework for easy integration of energy storage into the grid and 2) 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 an RFP soliciting bids 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.

In addition to evaluating energy storage's benefits to the grid, there are several additional 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 utilities to 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 adding 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 jump-start market creation, spur fast learning, and guide the development of a regulatory framework. Five states currently have energy storage goals that range from five megawatt hours (MWh) to two gigawatts (GW). In 2017, NMPRC denied requests for the adoption of 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. 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 would help reduce their demand charges. Policymakers might want to start first with a policy to incentivize solar system owners.

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 2018 Bloomberg New Energy Finance report predicts that at least 50% of total global electricity will be renewable 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 interests 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, 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. 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. Allowing shared, or community, renewable energy projects addresses these barriers. These projects have multiple owners or subscribers who pay for a portion of 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 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. In just the last four years, over nine GW of renewable contracts have been announced by corporate entities. In the first quarter of 2018 alone, corporations signed 14 agreements for over 1700 MW 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 the single largest corporate PPA signed in 2018 thus far. 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 emissions and increase investments in clean energy resources. New Mexico's current RPS sets a 20% renewable energy target for IOUs and a 10% target for rural electric cooperatives by 2020, with a 20% carve-out for solar and a 30% carve-out for wind. Utilities in the state are taking the lead by incorporating more renewable resources in their energy portfolios. Regulators approved a plan proposed by PNM to phase out all coal generation by 2031. PNM intends to increase their renewable energy portfolio and add energy storage and natural gas to the energy mix in order to meet growing demand. In 2005, Governor Richardson signed an executive order establishing statewide emissions reductions goals of 10% by 2020 and 75% by 2050 relative to 2000 levels.

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 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. Following petitions from Western Resource Advocates and the New Mexico Attorney General, the NMPRC began investigating (Case no. 17-00211-UT) implementing a clean energy standard, designed to reduce annual greenhouse gas (GHG) emissions.

ELECTRIFICATION OF THE TRANSPORTATION SECTOR

An estimated 55% 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. Another important barrier to increased adoption of EVs is their higher up-front cost as compared to similar conventionally fueled vehicles. 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. 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 additional 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. Nissan offered a limited rebate on the purchase of an EV Nissan Leaf for PNM customers.

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 target these types of locations and attempt to pair the appropriate level of charging infrastructure with a reasonable amount of time a person will be at that location. Legislation could direct a state agency to develop such a 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.

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.

NEWS

- September 5, 2018: PRC Agrees to Fast-Track Two Solar Projects for Facebook Data Center Expansion
- September 5, 2018: PRC Rejects SunZia Transmission Line Project
- September 5, 2018: PRC Votes to Kill 'Standby Fee' Charged to Eastern New Mexico Customers
- August 22, 2018: PNM Seeks to Join Western States in 'Energy Imbalance Market'
- August 21, 2018: Senator Heinrich: a 100% Clean Energy Grid is 'Completely Doable'
- August 16, 2018: New 9.8 Megawatt Solar Farm in Gallup, New Mexico, will Save City $785,000 in First 8 Years
- July 5, 2018: Pattern Energy Harnesses NM's Blustery Gusts.
- June 18, 2018: New Mexico Regulators Consider $2B Renewable Energy Transmission Project

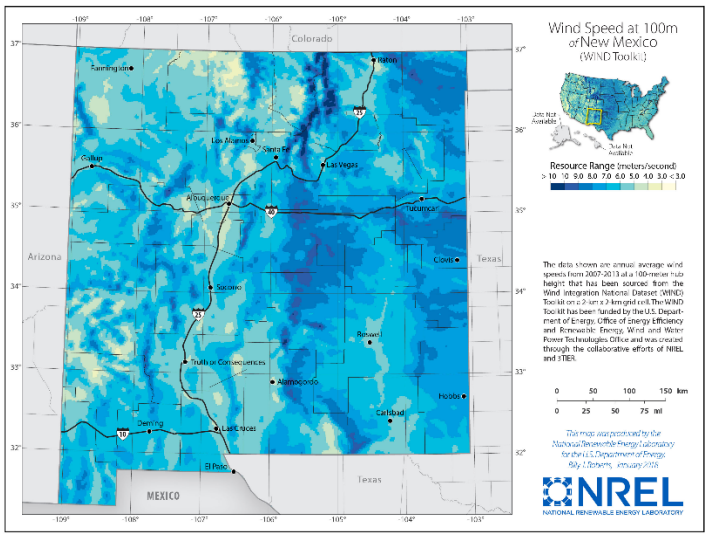
OTHER RESOURCES

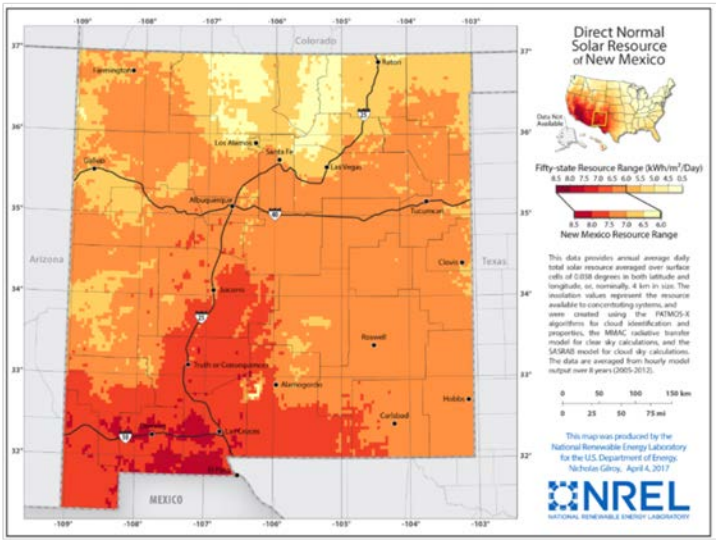
- New Mexico Energy, Minerals, and Natural Resources Department: http://www.emnrd.state.nm.us/
- The American Council for an Energy-Efficient Economy State and Local Policy Database, New Mexico: https://database.aceee.org/state/new-mexico
- The Database of State Incentives for Renewables and Efficiency, 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), New Mexico: http://awea.files.cms-plus.com/FileDownloads/pdfs/New%20Mexico.pdf
- 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/

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

- The Rocky Mountain Institute: From Gas to Grid – Building Charging Infrastructure to Power Electric Vehicle Demand
- The GridWise Alliance, Inc., EVs - Driving Adoption, Capturing Benefits: http://gridwise.org/evs-driving-adoption-capturing-benefits/
- The Regulatory Assistance Project, Performance-Based Regulation: https://www.raponline.org/event/performance-based-regulation-the-power-of-outcomes-part-1/

NEW MEXICO'S WIND AND SOLAR RESOURCES
WIND https://windexchange.energy.gov/states/nm
SOLAR https://www.nrel.gov/gis/solar.html





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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