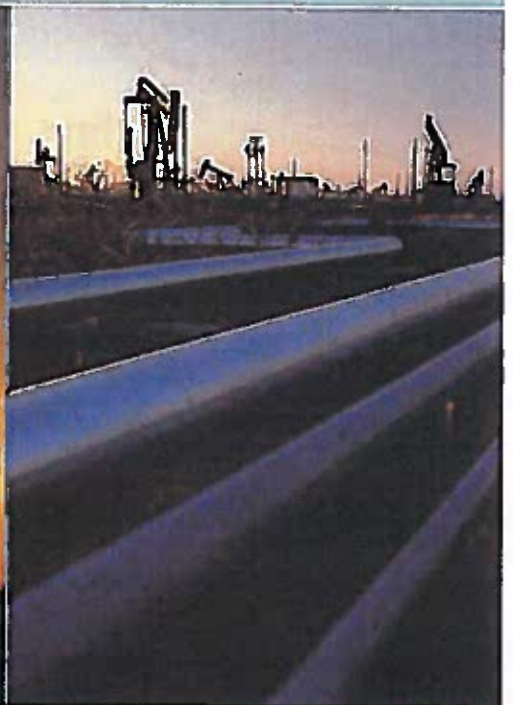
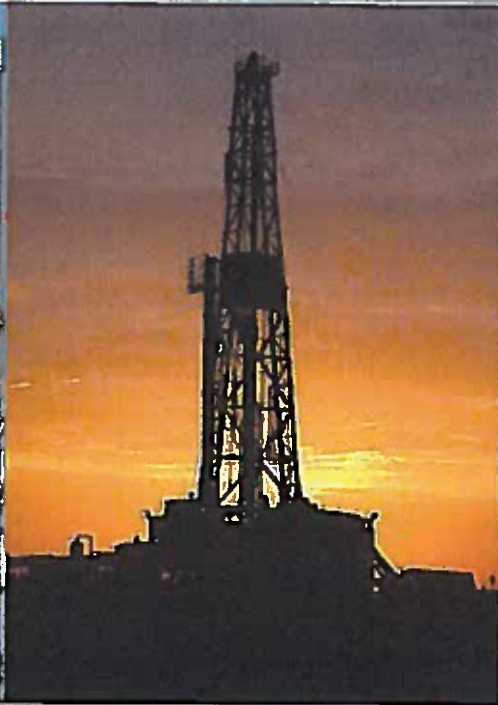
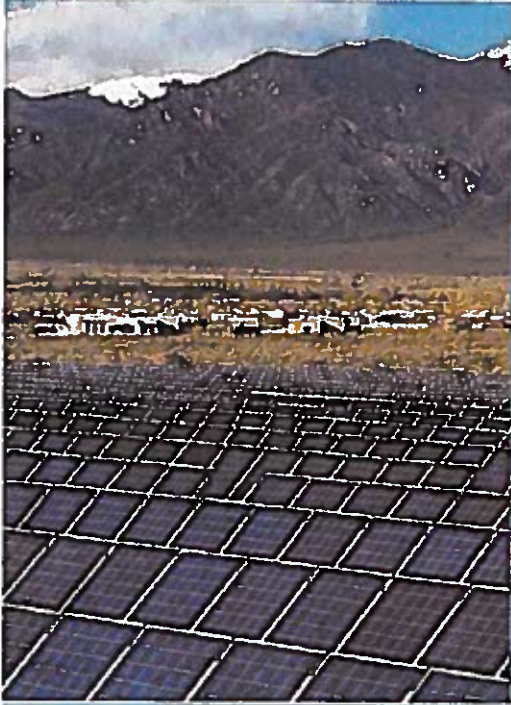


Seizing our Energy Potential: Creating a More Diverse Economy in New Mexico



New Mexico Energy Policy & Implementation Plan



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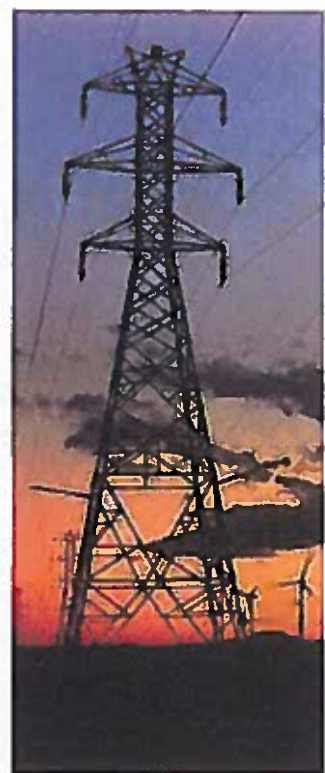


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State of New Mexico
Office of the Governor



Susana Martinez, Governor

To the People of New Mexico:

Thank you for taking the time to review this new state energy policy and implementation plan. Fortunately, New Mexico is one of the most energy-rich and energy-diverse states in the nation. Southeast and northwest New Mexico produce large amounts of oil and natural gas. These industries provide much of the revenue we rely on to run state government—for things like public education spending, Medicaid, and critical public safety efforts. The sun also shines brightly and is available for harvest across New Mexico, and the state boasts a thriving solar economy. Additionally, there is an abundance of wind, geothermal, and other renewable energy resources.

A key principle of this plan is that New Mexico cannot afford to exclude any energy asset from our portfolio of development opportunities. With an “all of the above” approach that encourages and prizes energy development of all kinds, New Mexico can better lead economically, create well-paying jobs across our state, and better respond to the changing needs of the future energy marketplace. In addition, this approach allows New Mexico to lead the way in helping our nation become more energy secure and independent, which is critical given the national security challenges we face today.

I can think of no state in the nation better poised than New Mexico to lead in all aspects of energy development. In addition to the abundance and diversity of the resources I have mentioned, we have tremendous intellectual assets, including national laboratories, world-class university research institutions, and community colleges with nationally renowned job training programs for the energy sector.

Despite energy’s integral role in New Mexico’s economy, the state has not had an updated its energy policy since 1991. Needless to say, times have changed, and with it, so has technology. In recent years, for example, the shale oil and gas revolution has transformed the United States energy sector and heralded a new age of energy abundance. Technological improvements are making it easier and more cost-effective each day to produce

wind and solar power. New Mexico needs a new energy plan that reflects today's realities and priorities for energy development.

This energy policy departs from the thinking of 25 years ago, which assumed future energy scarcity in New Mexico and the nation. It begins, instead, by embracing energy abundance and attempts to focus on how to use energy for the general welfare and long-term security of New Mexico's citizens.

I appreciate the contributions and input of all those throughout the State who offered their ideas and opinions about New Mexico's energy future. Together, we can seize our energy potential and create the kind of thriving, diverse economy we need to ensure a brighter future and greater opportunities for our children and families long-term security of our country and the general welfare of New Mexico's citizens.

Sincerely,

A handwritten signature in black ink that reads "Martinez". The signature is written in a cursive, flowing style.

Susana Martinez
Governor



State of New Mexico
Energy Minerals & Natural Resources Department



David Martin, Secretary

To the People of New Mexico:

New Mexico plays a critical role in supplying energy resources both for our state and our nation. Ensuring our state stays at the forefront of energy production requires forward-looking, cutting-edge planning and a dynamic vision for our future. We seek to achieve this with "Seizing Our Potential – the New Mexico State Energy Plan."

The New Mexico Energy Plan ensures that the state will expand its role as an energy leader, while continuing to provide income and create jobs across energy industries. The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) worked with hundreds of New Mexicans across the state's geography and stakeholders that represented all energy resources throughout 2014 to develop the plan, the first of its kind in nearly 25 years.

As we look at what energy means to New Mexico, and to the rest of our nation, it's important to know what is happening in our state at this time:

- New Mexico is the 4th highest net energy supplier to the United States, primarily because of petroleum and natural gas production.
- New Mexico currently ranks in the top 10 for production in nearly every major energy category, both fossil and renewable. Petroleum output is reaching the all-time record production of the 1970s, and New Mexico produces more renewable energy now than at any other time in state history.
- New Mexico's resource production potential is world class: the San Juan Basin remains the nation's second largest conventional natural gas reserve, the Permian Basin contains three of the 100 largest oil fields in the United States, and solar and wind energy resource production potential are 3rd and 11th in the nation, respectively.
- An estimated 68,800 jobs, or 9% percent of all employment in New Mexico, are directly or indirectly related to the oil and gas industry.
- Taxes royalties from the oil and gas industry account for over one-third of the state's General Fund.

Great strides are being made in every corner of our state, but we know from recent market fluctuations that the energy economy is ever changing. New Mexico must continue to promote energy diversity through investment in all of its energy assets, and strategic planning and key policy leadership are needed to effectively deploy these assets. Within this plan, there are many important actions we can begin to take that will move our state forward, including:

- **Infrastructure** – Creating or improving energy infrastructure will not only create jobs, but also open up new markets for New Mexico’s energy and products. From new rail lines to additional electric transmission, our state can better move our energy and its derived products around New Mexico, the Southwest, and Mexico. Infrastructure in oil and gas development attracts new project capital investment and can help clear export bottlenecks.
- **Education** – Educational institutions—from K-12 schools to junior colleges and research universities—are the biggest benefactors of our state’s energy revenues, and they return scientists, engineers, and other trained workers to the energy industry. New Mexico’s higher education institutions also offer advanced energy research to industries that are dependent on technology innovation.
- **Energy Tax Incentives** – All New Mexicans depend on energy, not only in their homes, businesses, and vehicles, but also for their livelihoods. Our state can remain competitive with neighboring states through additional investment in infrastructure, exploration, and production through smart tax incentives.
- **Regulatory Streamlining** – Removing unnecessary requirements from energy industry operations will expand growth. Regulatory balance and timely actions can be achieved without compromising on health, safety, and environmental standards. We can be prosperous producers while protecting our resources.
- **New Collaboration with Federal Agencies** – New Mexico’s energy resources exist in many jurisdictions, including state, tribal, federal and fee (private). This Administration has established a precedent in assisting federal-tribal agencies with limited means to process permits, helping to promote additional oil and gas development in the San Juan Basin. Building on this precedent, the state can continue to identify opportunities to remove bottlenecks in federal processes and create new pathways for other states and resource owners to follow.

Energy produced in New Mexico is not only essential to powering our daily lives, it also provides essential revenue that supports our schools, hospitals, local governments, and communities. The markets that benefit from New Mexico’s energy products lie within, and outside of, our state’s borders. The responsibility, and the opportunity, for energy resources and products in New Mexico cannot be understated.

We look forward to working together to implement the recommendations contained in the State Energy Plan, to ensure that New Mexico remains competitive in today’s energy markets and continues to meet the needs of the state and nation.

Sincerely,



David Martin
Cabinet Secretary

EXECUTIVE SUMMARY



Growing New Mexico's economy via the energy sector is the core tenet of the new Energy Policy and Implementation Plan for the State of New Mexico. The state has an abundance of energy resources, both fossil-based and renewable, and also an abundance of energy ingenuity in its companies, universities, and national laboratories. With an "all of the above" energy policy (no fuel source is excluded), New Mexico can depend on the future of the energy marketplace. This energy policy departs from the thinking of 25 years ago, which assumed future energy scarcity in New Mexico and the nation. It begins with recognition of energy abundance and attempts to chart a path where New Mexico further harnesses its energy resources to increase general welfare.

Principles that Drove the Development of the New Mexico Energy Policy

The goal of the energy plan revolves around objectives that are comprehensive enough to incorporate all of the state's energy resources but includes definitive opportunities to allow for accountability in success. These include a focus on economic growth and job creation as well as identifying incentives that increase market potential. The plan must consider both near-term and long-term objectives that can be measured and adjusted to conditions in the energy economy.

Developing the Policy

The New Mexico Energy, Minerals, and Natural Resources Department (EMNRD) led this policy

process and, in partnership with local economic development groups, hosted six listening sessions across New Mexico's energy geography. Approximately 450 people representing industry, citizens, non-governmental organizations, and state and local governments attended the listening sessions and provided input. After the majority of the sessions, a diverse group of energy leaders reviewed this input for energy policy considerations that were then submitted to EMNRD. This process provided the foundation for the objectives and content found within this policy.

Twelve Objectives

Twelve objectives provide the framework of the New Mexico Energy Policy and Implementation Plan. Additional recommendations and background information are found within the full policy text for each of these objective areas.

Embrace our Potential — Promote All Sources of Energy to Advance Economic Development & General Welfare in New Mexico

Consideration of the energy assets of different geographic areas of New Mexico, and an inclusion of all energy resources, are fundamental principles of the state's energy policy. Just as investment advisors encourage diverse portfolios to help manage risk, similarly New Mexico's strategy embraces all forms of energy to provide multiple options for economic diversity and to hedge against changes in market conditions.

▶ Recommendations in this area include:

- Embracing an "all of the above" approach to energy policy for state economic benefit and risk reduction;
- Supporting regional energy policy, infrastructure, and development pathways and solutions;
- Ensuring that sound science and economics, as well as the availability energy resources drive state energy policy decisions;
- Commissioning comprehensive analyses of state energy tax credits; and
- Providing consistent energy tax policy to provide certainty for industry.

Stimulate Energy Investment in New Mexico through Utilization of Abundant Natural Gas

Horizontal drilling in previously impervious shale formations has resulted in an oversupply of natural gas in the United States. The oversupply has driven the price for natural gas down to the point that drilling new gas wells in New Mexico is down to the point that the economics of drilling new gas wells in New Mexico are marginal, and state revenues, and state revenues and the economy surrounding the natural gas industry have been negatively impacted. New Mexico has an abundance of natural gas, and new market applications are needed to stimulate demand. Increasing the industrial and manufacturing applications for natural gas and natural gas vehicles are promising options to enhance natural gas demand within the state.

► Recommendations in this area include:

- Identifying and attracting petrochemical and manufacturing companies that utilize natural gas as a feedstock to New Mexico, particularly to San Juan County;
- Involving state universities and laboratories in economic research and modeling to assist industry in petrochemical projects; and
- Studying natural gas vehicle incentives that are competitive with other states, and encouraging development of additional natural gas fueling stations.

Identify the Feasibility of New Energy Markets & Technologies

There are a number of emerging energy technologies that New Mexico can take advantage of. As federal regulations increasingly impact current coal markets across the United States, the state may need to look abroad, or to markets other than power generation, for its coal resources. Conversely, small modular reactors (SMRs) could provide carbon-free, baseload electricity generation, and SMRs contain improvements to cost, safety, and environmental concerns that are present for larger nuclear generation facilities. In addition, energy storage is a rapidly growing and critical industry that can

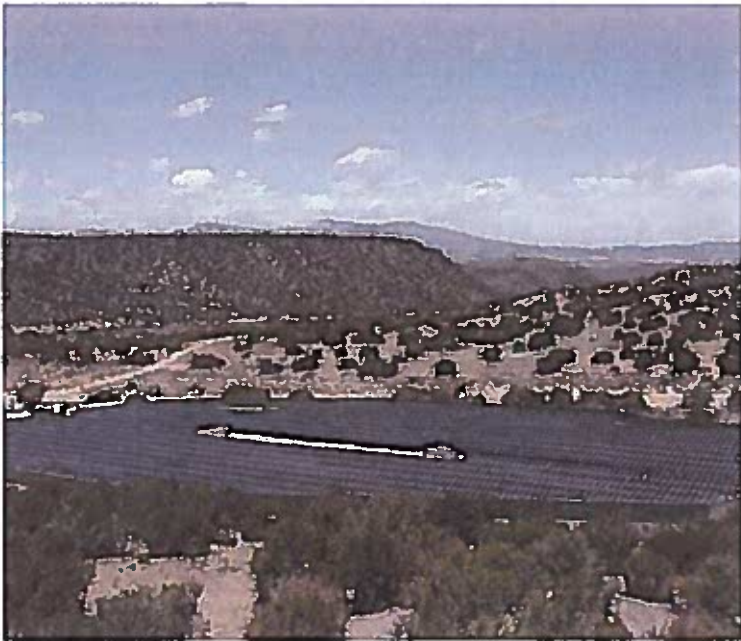
enhance the penetration of intermittent renewable energy resources, such as wind and solar energy. New Mexico's national laboratory energy expertise, its engineering and science public universities, and existing demonstration projects could lead to a robust energy storage industry in the state.

► Recommendations in this area include:

- Supporting feasibility studies of exporting coal and including coal export considerations in a rail feasibility study for northwest New Mexico;
- Developing an SMR taskforce to provide technical and legal support for a pre-feasibility study of an SMR prototype reactor in New Mexico;
- Creating a post-2020 Low-Carbon Electricity Portfolio Standard that includes nuclear power;
- Supporting a state initiative to establish an industry partnership for an Advanced Battery Chemistry and Materials Center in New Mexico; and
- Pursuing energy storage development with the private sector, especially new technology projects such as advanced batteries and flywheel/hydraulic energy storage systems.

Provide Regulatory Clarity for Existing & Emerging Energy Industries

Energy entities in New Mexico generally fall into two realms: operating energy providers such as utilities and extractive industries, or developers of "new technologies" such as solar, wind, geothermal, small modular reactors, and biofuels. For New Mexico to attract energy-related economic development opportunities, the state should maintain a reputation of streamlined regulatory processes and state agencies working in partnership with businesses. Regulatory clarity for the energy industries of New Mexico takes many forms. For the oil and gas industry, it requires the state to assert itself as the primary regulator. For newer energy technologies, it requires the state to monitor regulatory obstacles and increase clarity in permitting processes. Timely permitting for energy projects expedites revenue flows and job creation in the state.



▶ Recommendations in this area include:

- Reinforcing state primacy over oil and gas regulation;
- Making New Mexico's state regulatory entities easier to work with;
- Reviewing state policies regarding nuclear power generation and adopting all federal regulations for safety and development, so that the state process is consistent with federally mandated requirements; and
- Initiating a state-led effort to assist or encourage local jurisdictions to reduce soft costs for solar photovoltaic installation, such as permitting and right of way procedures

Provide a New Framework of Inter-Governmental Harmonization & Asset Deployment

New Mexico is a checkerboard of private (44%), federal (34%), state (12%), and tribal (10%) lands and minerals. For large-scale development that covers large mineral estates, such as oil, natural gas, and coal, multiple agencies are involved in permitting and regulation, and there are opportunities to reduce duplication of efforts. State and federal collaboration can alleviate some of the bottlenecks experienced in permitting and right-of-way approvals. Experience has shown that creative arrangements between the State of New Mexico and the federal government can lead to breakthrough efficiencies, especially in the oil and gas industry.

▶ Recommendations in this area include:

- Promoting the goals and objectives of the New Mexico energy policy by commenting on federal rulemakings, National Environmental Policy Act (NEPA) processes, Resource Management Plan revisions and updates, or their federal actions that impact the oil and gas sector to assure access to mineral resources for development in New Mexico;
- Implementing agreements with the Bureau of Land Management (BLM) to streamline permitting, operating requirements, and inspections to avoid duplication and promote consistency with state rules;
- Encouraging the BLM field offices to be adequately funded as required to perform the work required by federal laws in a timely manner and to a level that advances oil and gas development in New Mexico;
- Initiating a single set of regulations and paperwork requirements on all lands, regardless of the mineral and surface ownership, to lower costs and accelerate approval of applications; and
- Collaborating with federal regulators to reduce complex rules, regulations, and processes covering permitting for oil and gas drilling and operations.

Establish the Foundation of New & Improved Energy Infrastructure

A deficiency of energy infrastructure limits New Mexico's economic development potential. The recent oil boom in New Mexico exposed oil and gas infrastructure bottlenecks in both southeastern and northwestern New Mexico. Unless they are resolved, there will be adverse effects on takeaway capacity and on capital investment in new drilling when the pace of development again increases.

New Mexico has lost one oil refinery, while oil production, mainly from unconventional resources, is approaching record 1970s output. Consequently, the state can benefit from new refinery investments and existing refinery expansions to promote value-added jobs for New Mexicans.

For electricity delivery, there are a number of reasons to update and expand electricity transmission infrastructure in New Mexico: the state can take advantage of economic development opportunities that require additional power, utilities can continue to provide reliable service to existing homes and industries, and updated transmission and distribution infrastructure helps increase the penetration of renewable energy on the grid.

► Recommendations in this area include:

- Encouraging cooperation among EMNRD, the Department of Finance and Administration, the New Mexico Department of Transportation, and state legislators to mitigate road infrastructure constraints and reallocate existing tax revenues to address public road repair and new construction;
- Prioritizing the streamlining of right-of-way permitting processes on state land and assisting relevant agencies with right-of-way processing on federal and tribal lands;
- Supporting the feasibility study of a rail branch line from I-40 to the Farmington region of the Four Corners;
- Coordinating with multiple state agencies to explore possibilities for new oil refineries or expansion of existing refineries;
- Improving state-controlled aspects of transmission siting and permitting and supporting utilities to make transmission infrastructure investments; and
- Considering the installation of smart meters by utilities to accommodate the needs of a basic "smart grid."

Maximize Cost-Effective Deployment of Energy Efficiency in Public Buildings

The existing inventory of New Mexico's public buildings represents a vast amount of square footage and energy efficiency potential. Public buildings that are more energy efficient have lower utility bills, which help to control operating costs that are paid with taxpayer dollars. Obtaining upfront capital to implement energy saving measures in state buildings can be a challenge. When capital funding is not adequate to support energy efficiency projects in state government buildings, energy savings



performance contracting (ESPC) can be used. When implemented, the ESPC projects can result in a major reduction in state energy usage.

► Recommendations in this area include:

- Institutionalizing a program for energy performance in public buildings that includes annual benchmarking, energy use disclosure, energy performance targets, and monitoring; and
- Performing an evaluation of ESPC policies and addressing barriers to expanding this type of financing in New Mexico.

Address Public Concerns Regarding Energy Development & Public Health, Safety, & the Environment with Sound Scientific Evidence

All forms of energy development have impacts, and the public has perceived concerns regarding the environment, public health or safety. Recently, the boom in unconventional oil and gas production across the United States has raised public awareness about possible impacts from development. In particular, there have been concerns about groundwater contamination from oil and gas operations, air quality issues, oil transport, and other issues such as induced seismicity. In other energy sectors, there are also concerns about public health, safety, and the environment, including from power generation and emissions from coal-fired power plants. The legacy of uranium mining and risks associated with nuclear power development are also of concern for some

members of the public. It is important that the state continues to implement and enforce regulatory rules to prevent environmental degradation and protect public health while allowing for energy development to occur.

► Recommendations in this area include:

- Encouraging voluntary baseline groundwater testing by the oil and gas industry at private water wells near drilling sites before new well drilling commences;
- Accelerating development of natural gas gathering pipelines to reduce flaring;
- Developing a state plan for Section 111(d) of the Clean Air Act through collaboration among the New Mexico Environment Department (NMED), EMNRD, and the Public Regulation Commission;
- Supporting efforts to capture and sequester CO₂ from energy production and industrial sources, especially for subsequent use in enhanced oil recovery.

Reduce Fresh Water Consumption for Energy Production

This policy marks the first time that water and energy planning have been combined in New Mexico. In the future, as water supplies become increasingly stretched, it will become even more important to consider energy while planning for water as well as consider water supplies while planning for energy development and generation. In general, state policy is to encourage water conservation and reuse.

There are a number of important areas the state can focus on to reduce water consumption in the energy sector. Reducing fresh water use and recycling produced water in oil and gas operations could have major regional impacts. Power generation is another sector that requires large amounts of water for cooling, and alternative sources for fresh water and new technologies could be utilized to reduce water needs. New Mexico also has extensive brackish water resources that could be used for energy development, but also take substantial amounts of energy to treat. Lastly, it may be beneficial to expand state water planning to include water that does not have water rights associated with it (e.g., produced or some



brackish waters) and explicitly address water needs for the energy sector.

► Recommendations in this area include:

- Using non-potable water in energy production operations to the maximum extent possible;
- Gathering data on current water usage in the oil and gas industry to better determine facts on the effects of industry activity on groundwater and surface water sources;
- Exploring and evaluating opportunities to reuse produced water, and providing clear regulatory guidance for produced water reuse;
- Promoting technology development for both brackish and produced water treatment;
- Promoting reduced water consumption in the electric power industry;
- Collecting, reviewing, centralizing, and making public information and data on brackish water aquifers; and
- Promoting interagency coordination and communication among the Office of the State Engineer, NMED, and EMNRD on energy/water nexus discussions and brackish water policy development and implementation.

Provide Science & Technology-Based Information & Data about the Energy Sector

To make informed energy decisions, the New Mexico public and elected officials must have accurate

information about pros and cons of energy systems and advances in technologies. The state can assist in providing unbiased information and making it readily accessible. Recently, there have been concerns at the county and local levels about oil and gas development, which called for the state to respond to and assist public officials grappling with aspects of oil and gas production and distribution. There are also opportunities for the state to be a clearinghouse for information on topics such as advances in mining techniques for uranium, nuclear power development, and renewable energy.

▶ Recommendations in this area include:

- Implementing an education campaign to increase citizen knowledge of oil and gas operations, renewable energy development, uranium mining, and nuclear power development;
- Creating a repository of facts available on oil and gas and renewable energy development in New Mexico for the public and media to reference; and
- **Creating a strategic alliance of independent experts as qualified rapid response teams to assist New Mexico's counties and municipalities by providing science-based education and technical information regarding oil and gas development.**

Improve Workforce Training for the Energy Sector

The energy sector has growing workforce demands that range from highly skilled to entry-level positions. In particular, the oil and gas industry has experienced major growth since 2009, and due to this growth and high levels of retirements, it requires graduates in engineering, geology, and hydrology. Many jobs in the energy industry require science and technology training from the "STEM" (science, technology, engineering, and math) disciplines. Others require specialized training offered by two-year colleges. New Mexico's educational institutions—from two-year colleges to four-year research universities—are capable of keeping the energy workforce pipeline filled if they align curricula with energy industry needs.

▶ Recommendations in this area include:

- Encouraging colleges and universities to align their curricula with core energy workforce needs;
- Pursuing specialized degree programs and certifications at colleges and universities to meet industry and regulatory needs; and
- Supporting two-year college training programs in applied energy technologies.
- Encouraging Early College High Schools to emphasize Science, Technology, Engineering and Mathematics (STEM) courses and energy technologies.

Monitor & Review the Energy Policy

Prior to this effort, the state has not had a formal energy policy in more than 20 years, despite vast changes in oil and gas technology and production and greater penetration of intermittent renewable energy sources. Important policy decisions must be informed by the most up-to-date energy information. In addition to updating the policy at regular, discrete intervals, it is important to evaluate the progress of policy implementation.

▶ Recommendations in this area include:

- Reviewing the New Mexico Energy Policy and Implementation Plan on a regularly scheduled basis: a full review with public outreach and participation opportunities is required every five years, with more frequent internal review with reference to implementation to address any needed changes.

