

Re-Energizing Renewables: How New Mexico Can Move Toward Reliable, Clean and Affordable Energy

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New Mexico Public Interest Research Group (NMPIRG) Education Fund is a non-profit, nonpartisan organization dedicated to promoting environmental preservation, consumer protection and good government in the state of New Mexico through research and education. NMPIRG Education Fund works closely with NMPIRG , a consumer and environmental watchdog and advocacy organization.

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Executive Summary

New Mexico is at a critical juncture for its long term energy supply. On the eve of electricity deregulation, as the demand for power and the negative effects of traditional power production continue to increase, the state must turn away from polluting energy sources and increase the use of renewable energy, such as solar and wind power. The adoption of a renewable portfolio standard (RPS) is the best way to achieve this goal.

The electric power industry is one of the most polluting industries in New Mexico and the world. 87% of the electricity generated in New Mexico comes from dirty, coal-fired power plants. Coal plants are the largest industrial sources of a variety of pollutants, which threaten public health and the environment.

- Nationally, one-third of toxic mercury emissions comes from power plants. In New Mexico, the fish in 29,000 acres of lakes and streams are contaminated by mercury, which puts people who eat them at risk of neurological damage.
- Power plants emit one-quarter of the nitrogen oxide emissions in the state. At ground level, nitrogen oxides form ozone, or smog, and can trigger asthma attacks.
- In New Mexico, one-third of sulfur dioxide pollution is emitted by power plants. Sulfur dioxide forms fine particulate pollution and causes acid rain. Sulfur dioxide and nitrogen oxides are also the largest contributors to regional haze, which reduces or blocks visibility in the Grand Canyon and in other nearby parks.
- Power plants are responsible for one-half of carbon dioxide emissions in New Mexico. Carbon dioxide is a primary greenhouse gas, which contributes to global warming.

Rather than steering us away from polluting energy sources, current policies favor coal and gas over wind and solar power.

- A loophole in the Clean Air Act exempts 559 of the oldest, dirtiest power plants from meeting current clean air standards required for new power plants. As a result, the older, “grandfathered” plants emit up to 10 times more pollution than a new power plant. New Mexico has six grandfathered power plants.
- Fossil fuels have long received enormous subsidies, such as the \$3 billion Clean Coal Technology Program for the development of new coal-burning technology, and the \$627 million Coal Research and Development Program. Renewable energy technologies do not benefit from comparable programs.
- In 1992, wholesale deregulation, the ability of electricity generators to purchase power from other generating companies, was passed by the federal government. Since that time, coal generation across the country has increased 16%.
- Without strict controls, retail deregulation will also result in increased dependence on dirty power. Starting in 2001, New Mexico consumers will be able to choose who generates their electricity. New Mexico power providers will be encouraged to use the cheapest energy sources available without considering the broader public interest.

A transition toward clean, renewable energy is entirely feasible and strongly favored by the public.

- Solar panels at currently available efficiencies on 20% of New Mexico’s landmass could replace all the coal, oil and gas the entire United States uses each year.

- New Mexico has the 12th largest wind resource in the U.S. Its annual wind potential is estimated at 435 billion kilowatt-hours – twenty-five times the state’s annual electricity consumption of 17 billion kilowatt-hours.
- A 1998 poll found that 87% of New Mexicans cared a lot or a fair amount how their electricity is generated. By a margin of 4 to 1, respondents preferred a mandatory fee of an average of \$1.40 per month to promote renewable energy.

Contrary to common perceptions, renewable energy is affordable and reliable.

- Wind energy is currently selling for approximately 4 cents/kilowatt-hour, on par with more traditional fuels such as coal and nuclear.
- Over the past three years, solar prices have dropped from around 50 cents/kilowatt-hour to about 20 cents/kilowatt-hour, varying slightly depending on the technology. Most solar technologies are expected to drop to below 10 cents/kilowatt-hour by 2010.
- New wind plants churn out power 95% of the day. A recent study by the National Renewable Energy Laboratory concluded that intermittent generation levels of at least 10% of total energy generation can be accommodated with no adverse system impacts. Solar facilities are durable and efficient, and require very little ongoing maintenance.

New Mexico policy makers now have the opportunity to address environmental and public health concerns associated with dirty power production by adopting a Renewable Portfolio Standard (RPS). This would require all electric utilities to provide a minimum percentage of their energy from renewable energy sources.

- An RPS is needed, as New Mexico’s deregulation law did very little to promote renewable energy. The only provision in the new law that directly stimulates renewable energy production is a small fund to construct renewable energy facilities at schools and government buildings.
- Proposals for an RPS for New Mexico already have momentum. The 1999 deregulation law ordered the Public Regulation Commission to examine the advisability and desirability of an RPS.
- RPS’s are being proven effective elsewhere. Eleven other states have already adopted RPS’s to promote renewable energy in deregulated markets.
- An RPS makes good economic sense. A study analyzing a 20% RPS predicted rates to fall 13 percent over the next twenty years, with an average savings of \$5.90 per month. In Florida, a study for the DOE found that solar power would add 99 jobs per megawatt of additional capacity, versus 5 jobs for gas and 10 jobs for oil or coal plants.

Several new policies are needed to compensate for an unequal playing field for renewable energy in New Mexico as the industry is deregulated. The following sensible, achievable steps should be taken immediately:

- Increase renewable energy through adoption of a Renewable Portfolio Standard of 5% by 2005, increasing to 20% by 2020.
- Require utilities to provide information on customers’ bills on energy sources and their environmental impacts.
- Increase energy efficiency by updating energy efficiency codes for buildings and appliances.
- Require all power plants to meet the same emission standards, rather than exempting the worst plants.
- Eliminate subsidies for energy production from polluting sources.

I. INTRODUCTION

Many new technologies have been developed over the past several decades to combat the negative impacts of our current power generation. Energy efficient appliances, motors, lighting, cooling and building techniques can dramatically reduce the energy needed for homes, businesses and industries. New appliances reduce energy needs to 50-70% below that of the average models currently in use.¹ Since 1996, energy efficiency efforts by New Mexico state agencies have reduced energy

Since 1996, energy efficiency efforts by New Mexico State Agencies have reduced energy consumption by 5.4% and saved \$1.9 million dollars.

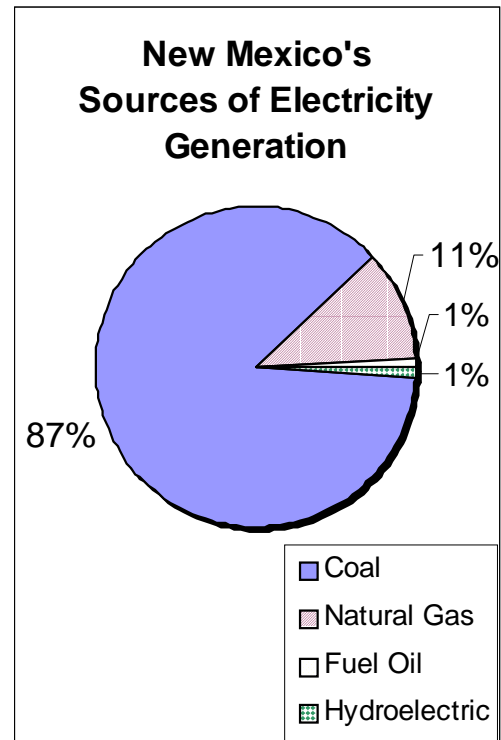
consumption by 5.4% and saved \$1.9 million dollars.² Yet over the past five years average electricity sales per New Mexico consumer have increased 400 kWh for residential and 9,000 kWh for commercial/industrial

users.³ Furthermore, New Mexico's energy efficiency codes for appliances and buildings have not been updated since 1986 despite federal recommendations to update them every 3 years.

Likewise, extraordinary improvements have been made in renewable energy production from solar, wind, biomass and geothermal sources. These renewable resources produce little or no pollution and many are cost competitive with traditional fossil fuel power plants.

Despite the existence of clean technologies and abundant resources in New Mexico for generating renewable energy, many utilities continue to rely on old, fossil fuel burning power plants. In New Mexico, 87% of the electricity generated comes from coal-fired

power plants and 11% comes from oil and gas.⁴ Over half of the electricity generated in New Mexico is exported to Arizona and California.⁵



As we enter the new millennium, New Mexico and the United States are at a crossroads for our energy supply and production. With 4.7% of the world's population, the U.S. consumes 25% of the total fossil fuel used each year worldwide.⁶ The U.S. population is expected to double over the next 60 years, straining the country's energy supply further.⁷

Throughout its history, the fossil fuel industry has fought for and received enormous subsidies, allowing it to continue polluting our air, land and water. These incentives reward coal, oil and nuclear

power, while making it difficult for new,

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cleaner generation technologies to enter the market.

Recently, large industries have fought to overhaul the old regulatory system of

utilities. By deregulating and allowing competition among electricity generators, industries hope to lower their electricity rates. Deregulation has been adopted by many states, including New Mexico. The disadvantage for renewable energy may be

further exacerbated in a competitive market as recently enacted by the New Mexico Electric Utility Industry Restructuring Act of 1999. Competition can either maintain our reliance on old, dirty power sources or forge a new path towards a renewable, clean energy future. While many states included provisions to promote a new path for renewables in a deregulated market, New Mexico's law fell short. The next century has arrived. It is time for New Mexico and the United States to move into a new energy era and follow the path that will protect public health and the environment.

II. Environmental and Health Impacts of Polluting Power

In New Mexico and the U.S., the electric power industry, due to its reliance on older, coal-burning power plants, is the largest industrial source of a variety of pollutants, including:

- 1) One-third of toxic mercury emissions. Mercury has contaminated the fish in 29,000 acres of New Mexico lakes and streams, which puts people who eat them at risk of neurological damage.
- 2) One-quarter of nitrogen oxide emissions. Nitrogen oxides form ground-level ozone, or smog.
- 3) One-third of sulfur dioxide emissions. Sulfur dioxide forms fine particulate pollution and acid rain.
- 4) One-half of carbon dioxide emissions. Carbon dioxide is the most common greenhouse gas, which contributes to global warming.

Mercury

In over 50,000 bodies of water in 40 states in the U.S., fish contain such high levels of mercury that health agencies have warned that eating the fish poses serious health risks.⁸ In New Mexico, mercury consumption warnings have been issued for 26 lakes and streams – affecting over 29,000 acres of water.⁹

Mercury is a toxic heavy metal, which if ingested, can cause serious neurological damage, particularly to developing fetuses, infants and children. Consequences of exposure to mercury include permanent and irreversible developmental problems in learning to walk and talk, incoordination, cerebral palsy, mental retardation, visual loss, abnormal reflexes, liver degeneration

and gastrointestinal disturbances.¹⁰

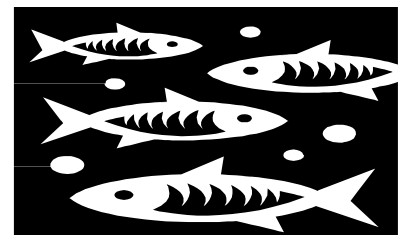
People most at risk include women of child-bearing age, pregnant women and their fetuses, nursing mothers and their children, and subsistence fishers.



Coal and oil power plants are the largest sources of mercury emissions nationally. In New Mexico, San Juan and Four Corners plants were recently ranked the 22nd and 44th largest mercury polluters of all coal-fired power plants.¹¹ Table 1 shows the pounds of mercury emitted by each of these plants last year - a combined total of 1,323 pounds. According to current EPA estimates, power plants are responsible for 33 % of mercury emissions nationally. Other mercury sources include municipal incinerators, commercial and industrial boilers powered by coal or oil, medical waste incinerators, manufacturing plants and hazardous waste incinerators.¹²

When mercury is emitted into the air, it undergoes photochemical oxidation, creating inorganic mercury, which is washed into lakes and streams by rain and snow. It then reacts with bacteria to form organic mercury, the form most toxic to humans.¹³

According to a recent study done by the Environmental



Working Group and Health Care Without Harm, the most commonly eaten fish products, including canned tuna, can present serious health threats to unborn babies and

Table 1
New Mexico estimated mercury emissions from coal-burning power plants.

Plant	Parent Company	City	Estimated*	Estimated**
			Total Mercury Released 1998 (pounds)	Mercury Air Pollution 1998 (pounds)
San Juan	Public Service Company of NM	Waterflow, NM	1,314	759
Four Corners	Pinnacle West Capital Corporation	Fruitland, NM	1,369	527
Escalante	Plains Electric Gen & Trans Coop Inc	Prewitt, NM	107	36
State Total			2, 790	1,323

*Estimated coal in mercury is calculated using plant specific coal contamination and coal consumption data. Release includes disposal in ponds and landfills as well as reuse applications such as fertilizer.

**Total stack emissions are calculated by applying total mercury released to plant-specific emission modification factors.

Source: Environmental Working Group; *Mercury Falling*, December 1999. Compiled from U.S. Department of Energy and U.S. Environmental Protection Agency database. Plant ownership is attributed to the parent company of the plant operator as of January 1, 1999.

young children because of mercury contamination.¹⁴ Reductions of mercury in the food chain will only occur if we dramatically reduce emissions from industry.

Although power plants are the largest industrial source of mercury, they are not required to limit their emissions of mercury.¹⁵ Since 1995, EPA has issued mercury limits for municipal and medical waste incinerators, proposed limits for hazardous waste incinerators, and begun to develop regulations to control mercury from small solid waste incinerators. EPA recently finished a one-year collection of data on mercury emissions from coal-fired power plants. However, it remains to be seen whether EPA will take the next step and limit mercury pollution from power plants. In the past, Congress refused to require mercury reductions from power plants as part of the Clean Air Act Amendments of 1990.

Ozone or “Smog”

Ground-level ozone, also known as “smog,” is our nation’s most prevalent form of air pollution. Despite reductions in smog levels since the passage of the Clean Air Act in 1970,¹⁶ today an estimated 117 million people live in areas of the United States where the air can be unsafe to breathe due to smog.¹⁷

Ozone is an invisible, odorless gas, which is formed when nitrogen oxides (NOx) mix with volatile organic compounds (VOCs) in the presence of sunlight. Thus, the risk to public health is highest during “ozone season” from mid-May to mid-September in most places, when there is plenty of sunlight.

When inhaled, ozone oxidizes and “burns through” lung tissue. Breathing ozone

causes airways in the lungs to become swollen and inflamed. Eventually, this causes scarring, and decreases the amount of oxygen that is delivered to the body through each breath. Outdoor exercise on days when ozone concentrations are high increases the impact on the respiratory system. In addition, the corrosive effect of exposure to ozone in the respiratory system increases susceptibility to bacterial infections.¹⁸

For vulnerable populations, including children, people with asthma or other respiratory diseases, and the elderly, smog poses a more serious health threat, sending those with asthma and cardiopulmonary disease to emergency rooms. A 1996 American Lung Association study found that in 13 cities between 30,000 and 50,000 emergency room visits were caused by ozone pollution.¹⁹ A 1999 study blamed smog for triggering 6 million asthma attacks each year.²⁰ According to the American Lung Association, at least 93,000 New Mexicans suffer from asthma, 37,000 of whom are children.²¹

In the same way that smog attacks or “oxidizes” human lung tissue, it also oxidizes plant tissues, damaging forests and crops. By eroding plants’ stores of carbon, it leaves trees and crops unable to respond to normal demands of growth and development and abnormal demands caused by bad weather, pests or nutrient deficiencies. Smog leads to over a billion dollars of crop loss each year.²² At least ninety plant species in the Great Smoky Mountain National Park exhibit ozone injury.²³

Fine Particulate Matter, or “Soot”

The American Lung Association estimates that 70 million people live in areas where the air is unsafe to breathe due to fine particulate pollution, or “soot”.²⁴ Particulate matter consists of tiny solids or acid

aerosols. Some aerosols are large enough to see, and some are so tiny that they are invisible, and potentially lethal.

Combustion of fossil fuels - gas, oil, coal, and diesel fuel - by sources such as electric power plants, industry, cars and trucks, are the primary cause of fine particulate air pollution. In some cases burning fossil fuels releases fine particles directly into the air, but more often nitrogen oxides or sulfur dioxide released through combustion are transformed into acid aerosols in the air. These acid aerosols are even more irritating to the human lungs than non-acidic particles.

Coal-burning is far and away the largest source of fine particles and their precursors, emitting 22 million tons per year.²⁵ Other sources include gasoline and diesel exhaust from cars and trucks, dust from agriculture and unpaved roads, chemical manufacturing, solvent use, forest fires, wood burning and other industrial processes.

Based on decades of research, scientists have discovered that the most dangerous particles are the ones that are least visible, the tiny ones that become deeply imbedded in the lungs when inhaled. Therefore, the EPA has created two particulate air pollution standards, one for coarser particles with diameter of up to 10 microns (millionths of a meter), and one for fine particles with a diameter of less than 2.5 microns.

As is the case with ozone, fine particulate matter is of most concern to certain vulnerable populations, including young children, the elderly and those with respiratory diseases such as asthma. Coughing, swallowing or sneezing cannot expel these “fine” particles. As they sit in the lungs, they cause varying degrees of irritation and loss of heart and lung function, depending upon their chemical composition.

Particulate-related illnesses include bronchitis, chronic cough, increased emergency room visits and hospital admissions and, in the worst cases, premature death. The U.S. EPA estimates that tens of thousands of lives are cut short each year in the U.S. due to fine particulate pollution.²⁶

Regional Haze

In addition to threatening respiratory health, soot also causes “haze,” making it difficult to see in some of the most beautiful vistas in America. According to the National Park Service, forty years ago one could see for over 90 miles from the peaks of the Southern Appalachians, whereas today visibility is under 35 miles on an average summer day, and under 12 miles on a smoggy day.²⁷

The Southwest’s superb vistas are also threatened by regional haze. In 1990, significant concern prompted Congress to create the Grand Canyon Visibility Transport Commission (GCVTC).²⁸ In 1993, the National Academy of Sciences reported that, “Many visitors to America’s national parks and wilderness areas are unable to enjoy some of the beautiful and dramatic views that would prevail in the absence of air pollution.”²⁹ The GCVTC concluded that, despite improvements in visibility since 1970, by 2010, economic growth in the region could overwhelm the effect of Clean Air Act compliance, especially if increasing demand for electricity is met by new, conventional coal-fired power plants.³⁰ The report also shows that sulfate, or soot, pollution is responsible for about one-third of visibility degradation on the Colorado plateau, and electric utilities are responsible of forty percent of such emissions regionally.³¹ Nearly all such emissions from utilities can be credited to coal-burning power plants.

Carbon Dioxide

The earth's average temperature appears to be on the rise, caused by the emission of gases from man-made sources threatening wide-ranging catastrophic climate changes. This was the conclusion of 2,500 of the world's leading climate scientists, economists and other experts of the United Nations' Intergovernmental Panel on Climate Change in its fall 1995 report.³² The evidence is convincing. The hottest 12 years on record have all occurred since 1980, culminating in 1998 – the hottest year ever recorded.³³ The average number of disaster declarations from extreme weather increased 86% over the past 15 years.³⁴

The primary gas associated with global warming is carbon dioxide. During the past 100 years, human beings have increased the atmosphere's concentration of carbon dioxide by 25 to 30 percent.³⁵ The largest sources of global warming pollution are the burning of fossil fuels to produce electricity and to power automobiles. Electric power plants emit one-half of all carbon dioxide in New Mexico³⁶ and one-third of carbon dioxide emissions in the U.S.³⁷

Climate scientists' predictions of global warming are dire. The Intergovernmental Panel on Climate Change warns that if carbon dioxide concentrations double, which could happen in the next 50 years, the resulting temperature rise could produce severe environmental effects. These might include longer droughts, expansion of deserts, loss of coastal regions due to rising seas, spread of malaria and other insect-borne disease, and more frequent

and extreme weather events including floods and tornadoes.³⁸

Climate change could also exacerbate existing natural and human induced pressures on endangered species, many of which survive in the unique ecosystem of New Mexico. More than 2,000 plant species thrive at the intersection of Arizona, New Mexico and Mexico – nearly 10% of all the species found in the United States.³⁹ Narrow strips of riparian vegetation throughout the state are extremely important to wildlife, especially a number of endangered or threatened species.



Nuclear Energy - Not the Solution

Despite the absence of nuclear power plants in New Mexico, the impact of this wasteful energy is still felt in the state. Some utilities rely on nuclear power produced elsewhere as part of the energy they provide to customers in New Mexico. High-level radioactive waste from out-of-state reactors would be shipped through the middle of New Mexico under a proposal to store the waste at Nevada's Yucca Mountain.¹ Nuclear waste is a national problem affecting all of us.

Uranium is a primary material needed for nuclear power generation. Negative environmental and health impacts have resulted from major uranium mining operations in New Mexico. Numerous studies indicate increased lung cancer among uranium miners. A 1995 study updated the health impact on Navajo uranium miners and found excess mortality for lung cancer, tuberculosis, pneumoconioses and other respiratory diseases.² The excessive health problems associated with such radiation exposure prompted Congress to pass the Radiation Exposure Compensation Act in 1990. The uranium mines and mills also left widespread contamination in the Ambrosia Lake area. A 1985 study done by the New Mexico Environmental Improvement Division, found elevated levels of radionuclides in cattle that grazed in the area and warned against eating these cattle for any length of time.³ The recommendations to the New Mexico legislature and Governor Anaya included restricting access to these contaminated lands for grazing or public use.⁴

Even though the production of nuclear power involves enormous environmental and health risks, some utilities continue to advertise nuclear energy as the clean alternative. In the 1998 Environmental Annual Report, Public Service Company of New Mexico (PNM) claimed its commitment to reducing carbon dioxide emissions by 1.5 million tons by the year 2000. The report states that "to reach this goal, the company will increase generation at Arizona's Palo Verde Nuclear Generating Station, which does not burn fossil fuels and therefore produces no greenhouse gases."⁵ By failing to discuss radioactive waste disposal problems and uranium mining impacts on health and the environment, PNM implies that nuclear energy is a safe, clean alternative to fossil fuel plants. The past nuclear accidents at Chernobyl, Three Mile Island and, most recently, in Japan prove otherwise. From the mining of materials through generation to radioactive waste disposal, nuclear power has been proven neither clean nor safe.

It was once thought that nuclear power would be one of the cheapest sources of electricity. The inherent safety issues of nuclear generation have caused skyrocketing insurance and safety costs. As a result, many utilities have not received the projected return on their investments in nuclear power. They turned out to be bad investments. Now, in attempt to regain these costs, utilities are legalizing their ability to recoup their investments, or "stranded costs," from consumers before the market is deregulated. According to New Mexico's newly passed deregulation law, utilities are guaranteed at least half of these costs, estimated in the hundreds of million of dollars, paid for by their customers. Thus, nuclear power has proven not only hazardous for the environment, but also wasteful for consumers.

1 Nevada for Nuclear Projects, Nuclear Waste Project Office, *High-Level Nuclear Waste Shipping Route Maps to Yucca Mountain and Shipment Number Estimates – Multi-Purpose Canister Base Case*, Carson City, Nevada, October 1995.

2 Roscoe, R.J., et al., "Mortality among Navajo Uranium Miners," *American Journal of Public Health*, April 1995, Vol. 85, No. 4.

3 Brown, Michael and Jere Millard, EID NEWS, New Mexico Environmental Improvement Division, June 17, 1986.

4 Working Group on New Mexico's Radiation Protection Regulations, *Recommendations and Statement of Reasons for Changes in New Mexico Radiation Protection Regulations and Their Enabling Legislation*, February 15, 1985.

5 PNM Environmental Annual Report, 1998.

III. Current Policies Favor Dirty Energy Sources

The Lethal Loophole

A loophole in the Clean Air Act exempts the oldest, dirtiest power plants from meeting current clean air standards required for new power plants. When Congress passed the Clean Air Act in 1970, older power plants were exempted from the emission controls required for new sources of pollution. The rationale for this loophole, put forth by the power industry, was that older plants would soon be retired and replaced by new, clean facilities. Therefore, they argued, it would be a waste to require retrofits to these plants. Each time Congress amended the Clean Air Act in 1977 and 1990, this “grandfather” clause remained.

Nearly thirty years after the original exemption, which included 559 power plants, 446 of these plants are still in operation. According to a recent report by USPIRG and the Environmental Working Group, they are producing more and more of the nation’s electricity.⁴⁰ These old plants can emit as much as ten times more pollution than new coal-fired power generation facilities.

Before a new facility can begin operations, it must install pollution control technology that produces either the “lowest achievable emission rate” or the “best available control technology,” depending on the local air quality.⁴¹ It is generally accepted that the “best available control technology” for new coal plants today is selective catalytic reduction, which will achieve emission rates of 0.15 pounds of nitrogen oxides per million Btu, and scrubbers for sulfur

dioxide, which can achieve emission rates of less than 0.3 pounds of sulfur dioxide per million Btu.⁴² By contrast, older, coal-burning power plants routinely emit well over 0.5 pounds of nitrogen oxides per million Btu, and some emit as much as 6.0 pounds of sulfur dioxide per million Btu.⁴³



The absence of pollution controls on grandfathered plants results in an economic advantage over new plants. Recently, this “pollution subsidy” for nitrogen oxides and sulfur dioxide was estimated to confer as much as a 2-cent per kilowatt-hour advantage to an older coal plant compared to a new combined cycle gas power plant.⁴⁴ This subsidy to pollute constitutes a strong incentive to lengthen the lives of old facilities, rather than replacing them with modern, clean generation sources.

Unlimited Carbon Dioxide and Mercury Pollution

Under current Clean Air Act regulations, there is no limit on power plant emissions of carbon dioxide or mercury. This creates another incentive to generate electricity with coal, one of the largest sources of these pollutants.

Older, coal-burning plants emit more carbon dioxide than any other source of power, because they are inefficient and the carbon content of coal is higher than that of most other fuels. Pollution control equipment will not reduce

carbon dioxide emissions. Reductions in carbon dioxide emissions from the electric power sector can only be achieved through increased efficiency or by switching to cleaner fuels. Renewable energy sources, such as solar or wind power, do not produce carbon dioxide emissions.

Mercury emissions from coal-burning power plants, the largest source of mercury pollution, are also not regulated. Conversely, all other major sources of mercury are regulated. Municipal and hospital waste incinerators are currently being regulated for mercury emissions and the health care industry is voluntarily reducing the use of mercury-containing instruments.

Mercury emissions from power plants can be reduced in a variety of ways. The most effective way is to switch to fuels that contain little or no mercury, such as renewable energy or natural gas.⁴⁵ At coal-burning power plants growing evidence indicates that activated carbon injection can reduce mercury emissions by 90 percent or more.⁴⁶ Unfortunately, the solid waste resulting from this process would contain mercury and pose disposal problems.

New Mexico's Dirty Power Plants

New Mexico has 6 grandfathered power plants. Three of the plants are gas-fired. Gas is a much cleaner burning fuel than coal, yet still poses environmental risks due to extraction and carbon dioxide emissions. The other three plants are coal-fired. Of these, the two largest coal power plants – generating 70% of the electricity in the state – San Juan and Four Corners, are among the 100 filthiest plants in the nation.⁴⁷ Table 2

gives the rankings and amounts of various pollutants from these power plants. The San Juan and Four Corners plants are approximately 15 miles apart, which further increases the negative impact on local air and water quality.

Deregulation of the Electric Industry

In 1992, the national deregulation of the wholesale electric market changed the way utilities make decisions about power generation. Instead of assuming they need their own power plants to meet the needs of their customers, utilities now look to the wholesale marketplace to meet the demand for power. Deregulation has thus eliminated the traditional revenue incentive for utilities to build new power plants. This has led to an increased reliance on heavily polluting older power plants and the reopening of some mothballed facilities. In the search for the cheapest power, old power plants are attractive, because they often aren't required to use modern pollution controls. Recently, Detroit Edison attempted to reopen the Conners Creek power plant in Detroit without installing new pollution control devices on the plant.⁴⁸ Detroit Edison lost the ensuing legal battle with local citizens and now plans to switch the plant to natural gas with modern pollution controls.⁴⁹ Illinois Power also recently announced plans to reopen five oil-burning units at its Havana plant, which have been closed since 1996.⁵⁰

These changes in the market have resulted in an overall increase in our reliance on coal. From 1988 to 1992, coal power generation increased only two percent. Since 1992, when the wholesale market was deregulated with

the federal Energy Policy Act, coal power generation has increased by nearly 16 percent.⁵¹

In 1992, plants that generate power predominately from coal were using 60 percent of their capacity (most can run at up to 85 percent of their maximum capacity).⁵² By 1997, the capacity had jumped to 67 percent.⁵³ During the same period, utility power plant new capacity increased only 2.4 percent, while electricity demand increased 11.6 percent over the same period.⁵⁴ Thus, more of the increased energy need was met by existing capacity from old power plants rather than new ones.

Another victim of deregulation has been energy efficiency programs. While increasing coal production, utility companies have reduced spending on energy efficiency budgets. From 1992 to 1997, U.S. utilities cut their combined investment in energy savings programs by 45 percent, or \$736 million, largely in response to deregulation.⁵⁵

New Mexico Increases Use of Dirty Power

New Mexico, along with many other states, has taken electricity deregulation one step further by passing laws

allowing competition among utilities for retail electric customers. However, when New Mexico took action to restructure the industry, the legislature inadequately addressed the effects of the policy changes on the environment and public health.

This trend of increasing reliance on dirty power plants also applies to New Mexico. Since 1992, New Mexico's old coal power plants have dramatically increased generation. The generation increase from San Juan was the 10th largest increase in carbon dioxide pollution from power plants in the nation – equivalent to nearly ½ million cars worth of pollution.⁵⁶

Table 3 shows the increases in generation since 1992 and the corresponding increases in pollution.

Unless measures are taken to address cleaning up grandfathered power plants and moving toward cleaner, renewable energy, the trend of increased coal production from the older, dirtier power plants will only be further exacerbated by the impending retail deregulation which goes into effect in January of 2001 in New Mexico.

Table 2
New Mexico's Power Plants among the Top 100 Dirtiest in the Nation

Plant Name	Owner	Heat Input (mmBTU)	CO2, 1997 (tons)	Nox, 1997 (tons)	SO2, 1997 (tons)	Excess NOx (tons)	Excess SO2 (tons)	National Rank Excess Nox	National Rank CO2 emissions
Four Corners	Arizona Public Service Company	156,364,341	15,863,300	44,244	37,391	32,516	13,936	22	26
San Juan	Public Service Co. of New Mexico	141,423,426	14,509,543	30,515	42,943	19,908	21,730	53	32

Source: U.S. PIRG and NMPIRG Education Fund, *The Lethal Loophole: A comprehensive report on America's dirtiest power plants and the loophole that allows them to pollute*, June 1998.

Table 3
Pollution in New Mexico resulting from increased electricity generation from coal-fired power plants.

Facility	Utility	County	Increase in Generation since 1992	CO2 pollution* (tons)	Pollution Equivalent in Cars**	NOx pollution* (tons)	Pollution Equivalent in Cars**
San Juan	Public Service Co. of NM	San Juan	43.4%	4,423,263	660,326	9,425	459,761
Raton	Raton Public Service Co.	Colfax	11.6%	8,149	1,216	28	1,386

*Pollution caused by increased generation is calculated by applying NOx and CO2 emission rates from 1997 or 1996 to increased generation at plant.

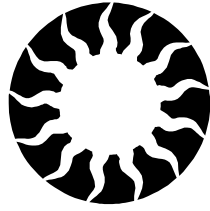
** EPA Office of Mobile Sources Assessment and Modeling Division. Based on average in-use passenger fuel economy and emission rates.

Source: Environmental Working Group and U.S. PIRG Education Fund, *Up In Smoke*, 1999. Compiled from DOE/EIA form 759 and 860 database (1992-1998), EPA 1997 ETS database, EPA 1996 E-GRID database.

IV. New Mexico's Renewable Energy Resource

Solar Resources

New Mexico experiences 3,200 hours of sunshine per year – far above the national average and substantially more than most other states in the Southwest.⁵⁸ The sun can be converted into electricity either by heating fluids through a thermodynamic cycle, as in solar thermal, or directly into electricity, as with solar photovoltaic technologies. In a study of direct solar radiation, the U.S. Department of Energy (DOE) and the Electric Power Research Institute (EPRI) found the Southwestern United States offers the best development for solar thermal technologies in the



world.⁵⁹ Similarly, New Mexico's abundance of sun also makes it ideal for photovoltaic development. A Princeton University study found that solar panels (PV hydrogen at current efficiencies available) on 20% of New Mexico's landmass could displace all the coal, oil and gas the entire United States uses each year.⁶⁰

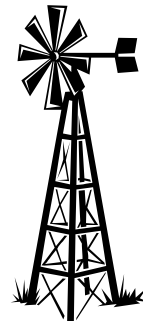
With the exception of a few, independent,

government-led projects at state parks, universities and the Indian Pueblo Cultural Center in Albuquerque, solar energy is an underutilized and underdeveloped resource in New Mexico. It does not even register in the generation mix for electricity. While solar is still more expensive than other

renewable technologies, it is rapidly becoming more affordable. In fact, prices for photovoltaic panels have dropped from \$80 per watt in the 1970's to around \$4-5 per watt today.

Wind Resources

According to Pacific Northwest Labs, a division of DOE, New Mexico has the 12th largest wind resource in the U.S. Its annual wind potential is estimated at 435 billion kilowatt-hours⁶¹ - twenty-five times the state's annual electricity consumption of 17 billion kilowatt-hours.



Currently, only one commercial wind turbine has been installed in New Mexico – a 660-kilowatt turbine near Clovis – by The Texas Wind Power Company of Austin.⁶³ Colorado's wind power program currently services 15,000 Colorado customers and the program is planning development of 25 more megawatts (MW), which would serve approximately 6,000 more homes.⁶⁴ Southwest Power Service is currently planning and building another wind project in the same area.

Table 4 provides a picture of other states' wind resources in the region and the development of those resources. Texas has the second largest wind potential in the country at 136,000 MW

What's a Kilowatt-hour?

Part of our electricity bill is based on how many kilowatt-hours (kWh) we use. A kilowatt equals 1,000 watts of power, so a 1,000 watt light bulb (very bright) burning one hour would use one kWh. Watts are simply the measure of the rate work is done by electricity with a kilowatt equaling about 1.34 horse-power.⁵⁷

Watts, Megawatts and Kilowatts

All of these are measures of electricity's ability to do work. Equal to volts (pressure of electricity in a circuit) times amps (measurement of the electrical current).⁶²

Kilowatt=1,000 watts

Megawatt= 1,000,000 watts

and has already installed over 187 MW of wind turbine capacity versus New Mexico's 49,700 MW of wind potential and 0.66 MW installed. Colorado has only 5,000 more megawatts of wind potential than New Mexico, but Colorado has installed 20 more megawatts of wind turbines with 25 more megawatts planned. Clearly, New Mexico trails far behind its regional counterparts when it comes to development of wind resources.

Table 4 - Wind Potential⁶⁵

State	Rank	Potential Megawatts (MW)	Currently Installed (MW)
TX	2nd	136,000	187.72
WY	7th	85,000	72.95
CO	11th	54,900	21.1
NM	12th	49,700	0.66

People Want Clean Energy

New Mexicans agree with the majority of Americans when it comes to renewable energy and environmental protection. According to a 1998 poll conducted by Public Service Company of New Mexico (PNM), 87% of people cared a lot or a fair amount how PNM generated its electricity.⁶⁶ Roughly a quarter of participants said they would voluntarily contribute an average of \$4.00 per month to a renewable fund. However, an overwhelming majority, by a margin of 4 to 1, preferred a mandatory fee of an average of \$1.40 per month to promote renewable energy.

According to recent polls from across the nation, Americans are concerned about the environmental impact of energy and clearly support the increased development of renewable energy such as solar and wind. In a 1998 poll, the

Safe Energy Communication Council found that six out of ten American voters across all political parties want renewable energy or energy efficiency to be the top priority for federal research and development funding.⁶⁷ A similar poll in Pennsylvania by the Energy Coordinating Agency reported that 78% of the general population felt it is very or extremely important for their electricity supplier to generate with renewable energy, and 68% reported a willingness to pay more to obtain it.⁶⁸

In neighboring Texas, three utilities conducted polling of their customers in 1996. Nearly two-thirds thought air pollution and global warming were somewhat to very serious problems. The initial polls found that 67% to 71% of customers thought renewable energy should be the first option pursued by utilities.⁶⁹ Customers were also willing to pay an average of \$5.50 to \$7.83 per month for renewable energy and about \$5 per month for additional environmental protection.

In response to customer desires, regulatory and legislative bodies in at least eleven states across the country have implemented programs to increase the use of renewable energy. Partially due to overwhelming public support Texas and Pennsylvania, for example, have implemented regulations to require the development of renewable energy by utilities in their respective states. New Mexico has not responded to this public demand in the same manner as these states. New Mexico's recently passed Electric Restructuring Act of 1999 does not implement strong programs to promote the development of renewable energy in the face of a deregulated market.

Renewable Energy Creates Jobs

Increased development of renewable resources can translate to more quality jobs for New Mexicans. Numerous studies across the country show that more renewable energy and energy efficiency provides more jobs than from coal and nuclear power.

A wind project of 250 megawatts would be enough to power 60,000 homes and provide 15,000 person-years of employment.⁷⁰ In Florida, a study for the DOE found that solar PV would add 99 jobs per megawatt of additional capacity versus 5 jobs per megawatt for gas combined cycle or combustion turbine power plants and 10 jobs per megawatt for oil or coal plants.⁷¹ In neighboring Texas, a study found that construction of solar power facilities created more jobs per megawatt of electric capacity than any other technology – 181 jobs per megawatt – while renewable technologies overall created more jobs per megawatt than conventional technologies.⁷² Additional investment in renewable energy in Wisconsin is estimated to create 22,000 job-years over a 30-year period.⁷³ The U.S. DOE’s National Renewable Energy Lab determined that solar thermal technology creates two and one-half times the skilled, high-wage jobs as conventional power plants.⁷⁴

Tables 5 and 6 detail another study by the U.S DOE with the predicted additional jobs and economic value for 1995-2006 based on projected capacity additions for Florida.⁷⁵ The renewable intensive development scenario provides the most jobs, over 40,000 more than

business-as-usual, and more money, \$1.8 billion more than business-as-usual

Table 5 – Construction Jobs

Scenarios	Total MW	Monetary Value mill \$*	Total Value added mill \$	# of Jobs added
Business-as-usual	3297	1719	1020	20792
Renewable intense	2589	4603	2870	61881
Renewable modest	3155	1844	1090	22571

*Monetary value is the total value of all economic impacts created by the various scenarios throughout the local economy.

Table 6 – Operation and Maintenance Jobs

Scenarios	Total MW	Monetary Value mill \$*	Total Value added mill \$	# of Jobs added
Business-as-usual	3297	87	38	573
Renewable intense	2589	98	81	2131
Renewable modest	3155	88	44	807

*Monetary value is the total value of all economic impacts created by the various scenarios throughout the local economy.

V. A Renewable Portfolio Standard for New Mexico

In order to address the public's desire for more renewable energy, as well as environmental and public health concerns linked to deregulation, many states have adopted various measures to level the playing field for renewable energy. One of the most popular such measures is called a Renewable Portfolio Standard, or RPS, which requires all electric utilities to provide a minimum percentage of their energy from renewable energy sources. For example, a 2% RPS would require that 2% of the energy which all utilities offer come from renewable energy sources such as solar and wind.

Despite overwhelming public support in New Mexico for such measures and abundant renewable resources, such as solar and wind, the New Mexico deregulation law did not include an RPS. Instead, it ordered the Public Regulation Commission to examine the advisability and desirability of a requiring a renewable portfolio standard.

The New Mexico Electric Utility Restructuring Act of 1999 did include a funding mechanism called a system benefit fund. Starting in 2002, the fund will consist of a small charge collected on every consumer's bill. The fund has several purposes, including consumer education, low-income bill assistance, extension of transmission lines, and limited renewable energy projects built only on schools or government buildings. Unfortunately, there is a cap

of \$4 million for the renewable portion of the fund, but no minimum spending requirement. Thus, within the law, a total of \$4 million could go to renewable projects, or absolutely nothing could be spent on renewable projects. While it remains to be seen how the fund will be administered, the fund is not dependable or extensive enough to rely solely on it for promoting renewable energy in New Mexico.

Other States

Currently, twenty-four states have passed legislation or regulations that deregulates the electric utility industry. Eleven states have passed RPS's, which vary from state to state in the definition of renewable energy and amount required by different years. Most include at least some of the following: solar, wind, biomass, geothermal, landfill gas, fuel cells, hydro, cogeneration, ocean and methane recovery. Some of the smaller percentages are due to stricter definitions for the RPS, such as Arizona, which only allows solar power to count for its RPS. Likewise, larger percentages are a result of more relaxed definitions such as Maine, which permits existing hydropower to figure into its total. Table 7 features the states that have adopted RPS's, their percentages and by what year.

Table 7 - Renewable Portfolio Standard (RPS) by State

<u>State</u>	<u>Percent required</u>	<u>By what year</u>
ME	30	2000
CT	13	2009
NJ	6.5	2012
MA	5	2009; 1%/yr. increase after 2009
MN*	4.3	
IA*	2.5	
NV	1	2009
NJ	4	2012
PA**	4	2005 (20% of residential customers)
AZ	1	2002
TX~	3 (2280 Megawatts)	2009

*These states have not deregulated, but have minimum renewable energy requirements measured by a percent of their sales.
 **Pennsylvania has divided the requirement by service-territory, thus it varies depending on the company.
 ~ The requirement for Texas is for Megawatts of renewable energy constructed, not percentage. Most estimates for a percentage range between 3 and 6 percent of Texas' total electricity consumption.

--Sources: compiled from information provided by American Council for an Energy Efficient Economy and Union of Concerned Scientists.

What would it cost?

Some fear that, while more renewable energy means more jobs, the cost of electricity would simultaneously increase as well. Most studies show a modest initial increase in rates, yet over a longer period rates would reduce more than current prices. A DOE analysis found a 10% non-hydro renewable requirement would reduce rates 17% below 1996 levels in 2020.⁷⁶ The study also revealed the average residential

consumer would save about \$6.56 per month in that time period. Another study analyzing a more aggressive 20% RPS predicted rates to fall 13 percent between 1997 and 2020 with an average saving of \$5.90 per month between 1998 and 2020.⁷⁷

Clearly, shifting toward cleaner, renewable energy would provide enormous benefits to New Mexico's economy. It's something New Mexico can't afford not to do.

VI. Common Myths of Renewable Energy

Myth 1: “The market will take care of it”

Utilities and others argue that in a competitive market companies will only survive if they provide products people are willing to buy. In a free market, products demanded by the consumers will be provided, albeit for a price they are willing to pay. Given all the polling data the majority of the public clearly wants more renewable energy and many are willing to even pay extra for it.

Unfortunately, a truly competitive market is an oxymoron for electric generation. Decades of skewed government subsidies for polluting fuels, a disincentive for long-term planning, and inflated, unfair renewable pricing practices create an unlevel playing field for renewable energy.

As discussed in section III, federal policies indirectly subsidize the cost of polluting power’s impacts on public health and the environment. Numerous direct subsidies for polluting fuels such as coal and nuclear have also skewed the cost of these generation sources. The federal government sponsors programs such as the \$3 billion Clean Coal Technology Program, for the development of new coal-burning technology, and the \$627 million Coal Research and Development Program.⁷⁹ Meanwhile, the federal support for renewable energy is small in comparison with an annual R&D budget of only \$300 million for all renewable technologies combined.⁸⁰

To the extent that truly fair and competitive markets cannot be obtained, public policies and regulation may still be required to assure that the public interest is factored into market outcomes.⁷⁸

Fossil fuels are not alone in receiving taxpayer dollars. According to the Congressional Research Service, from 1948-1996, the nuclear power industry has received more than half of all taxpayer support for energy research and development.⁸¹ We’ve provided federal subsidies of \$57 billion for nuclear power since 1950.⁸²

Deregulation will also present a disincentive to invest for the long term. As companies fight to provide the cheapest power possible, they will search for short-term, low cost investments.⁸³ Most new renewable projects are characterized by higher capital costs that require longer-term contracts than lower capital cost projects. Hence, investors are likely to pass over what in the long term could be a more cost-effective option of renewable energy.⁸⁴

Without intervention, utilities will likely offer renewable energy only at a premium price for those who can afford it and are willing to pay more. This practice will maintain an artificially high price for renewable energy and slow the development of additional renewable projects once the high-end market is saturated. Unfortunately, premium prices exclude many people who would otherwise choose cleaner energy. As shown in the PNM poll, people prefer mandatory renewable energy programs, because as the benefit is enjoyed by the public at large, so should the responsibility be shared. Customers are deterred from voluntary programs, since the benefit will accrue to other non-contributing

customers as much as those contributing.⁸⁵ Mandatory provisions will provide for a quicker, more affordable and fairer penetration of renewable energy technologies.

The Energy Information Administration (EIA) division of DOE admits that, “the continued use of renewable-based electricity faces strong challenges in a competitive market.... In order to maintain renewables as a generating option, a number of strategies have been put in place or proposed. One or more of these mechanisms – renewable portfolio standard (RPS), systems benefits charge (SBC), public benefits fund (PBF), net metering, green marketing – are generally part of Federal and State proposals to support renewables while their costs continue to decline.”⁸⁶

The market will take care of renewable energy? The Department of Energy agrees that this is highly unlikely. In order to penetrate the market, renewable energy will need help to overcome decades of skewed subsidies, disincentives under deregulation and inflated, unfair pricing attempts by utilities.

Myth 2: “The technology is too expensive”



Many people are still under the mistaken impression that investments in renewable energy are extremely expensive. Fortunately, twenty years of research and development and increasing market penetration has paid off. The cost of renewable energy has dropped significantly. Despite heavy incentives for fossil fuels, some renewable technologies are already cost equivalent to traditional fossil fuel power.

Wind energy is one of the cheapest of all renewable energy technologies. Graph 1 shows the significant decrease in wind prices – a 90% drop since 1978. Currently, wind projects are selling energy from 3-5 cents per kilowatt-hour – equivalent to coal or nuclear energy. The National Wind Coordinating Committee estimated the average wind cost at 4.37 cents per kilowatt-hour for a 50 megawatt project with a 28% capacity factor.⁸⁷ A recent project in Canada will produce enough electricity for 16,000 homes at 4 cents per kilowatt-hour (exchanged to US \$).⁸⁸

While the cost of solar photovoltaic (PV) and thermal technologies have also dropped significantly, they are still somewhat expensive compared with wind or other technologies. As mentioned earlier, photovoltaic panels have dropped from \$80 per watt in the 1970’s to around \$4-5 per watt today. Currently, solar PV and thermal range from 11 to 20 cents/kWh. As the use of solar increases, the cost is expected to continue to decline considerably.

The DOE estimates that costs of renewable energy technologies will continue to drop significantly. Determination of costs are often done by adding up construction, fuel, and operations and maintenance costs and spreading, or levelizing, the cost over the life of the technology (usually about 30 years). Table 8 compares the levelized cost of energy for various renewable sources from 1997 costs through predicted 2030 costs. In just 3 years, the cost of photovoltaic technologies has dropped from around 50 cents/kWh to around 20 cents/kWh, varying slightly depending on the technology. By 2010, the DOE expects the cost of nearly all the renewable resources to range from 2.5 cents/kWh to 9 cents/kWh.

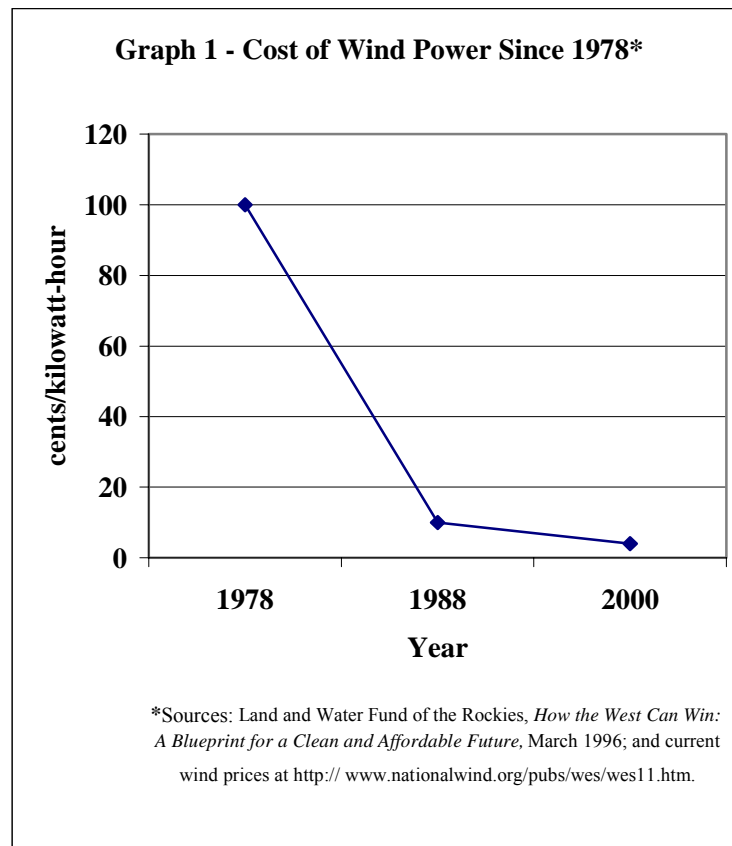


Table 8. Levelized Cost of Energy for Generating Company (GenCo) Ownership**

		Levelized COE (constant 1997 cents/kWh)				
Technology	Configuration	1997	2000	2010	2020	2030
Biomass	Direct Fired	8.7	7.5	7.0	5.8	5.8
	Gasification-based	7.3	6.7	6.1	5.4	5.0
Geothermal	Hydrothermal Flash	3.3	3.0	2.4	2.1	2.0
	Hydrothermal Binary	3.9	3.6	2.9	2.7	2.5
	Hot Dry Rock	10.9	10.1	8.3	6.5	5.3
Solar Thermal	Power Tower	--	13.6*	5.2	4.2	4.2
	Parabolic Trough	17.3	11.8	7.6	7.2	6.8
	Dish Engine – Hybrid	--	17.9	6.1	5.5	5.2
Photovoltaics	Utility-Scale Flat-Plate Thin Film	51.7	29.0	8.1	6.2	5.0
	Concentrators	49.1	24.4	9.4	6.5	5.3
	Utility-Owned Residential	37.0	29.7	17.0	10.2	6.2
Wind	Advanced Horizontal Axis Turbines					
	-Class 4 wind regime	6.4	4.3	3.1	2.9	2.8
	-Class 6 wind regime	5.0	3.4	2.5	2.4	2.3

* COE is only for the solar portion of the year 2000 hybrid plant configuration.

**Generating Company takes a market-based rate of return approach to building, owning and operating a power plant. The company uses balance-sheet or corporate finance, where debt and equity investors hold claim to a diversified pool of corporate assets.

Source: U.S. DOE and EPRI, *Renewable Energy Technology Characterization*, December 1997.

Most discussions of the costs of energy production ignore the cost of environmental damage, yet this involves real expenses, which we all must pay. It is difficult, however, to put a price on cleaner air or uncontaminated fish. Air pollution nationally, including from power plants, is estimated to cause \$20-50 billion in health costs annually.⁸⁹ The benefits of the Clean Air Act alone were estimated at up to \$3.2 trillion between 1970 and 1996.⁹⁰ The real question is not whether we can afford to invest in more renewable energy, but what it will cost us if we don't.

Myth 3: “The technology isn’t reliable”

Since some renewable energy technologies are intermittent, producing energy that is available only when the sun is shining or the wind is blowing, critics argue that renewable energy will threaten the reliability of electricity. Traditionally, coal-fired power plants in the U.S. run at 60% capacity, while solar and wind projects, without storage, run at 20-30% capacity.⁹¹

However, there is ample evidence that reliability of renewable projects is comparable, if not greater, than traditional fossil fuel power plants. Availability of newer wind plants has improved to 95% or greater on average.⁹² Certain solar thermal technologies can operate at capacities of up to 65% dispatchable power.⁹³ A recent National Renewable Energy Laboratory (NREL) review suggests that intermittent generation levels of at least 10% of total energy generation can be accommodated with no adverse system impacts.⁹⁴ On the Pacific Gas and Electric System, wind energy already provides up to 7% of the system load and has supplied about 5% during peak hours without adverse effects.⁹⁵

An often-neglected component of increased reliability is storage. New storage technologies for renewable projects allow greater flexibility to dispatch energy as needed. Storage technologies have moved past the traditional battery to flywheels, compressed air storage, superconducting magnetic storage and advanced electrochemical capacitors. These technologies greatly enhance renewable energy availability, even in the absence of sun or wind.

Reliability is also a function of the resource availability and the technology. Siting projects in higher resource areas, where there is more sun and wind, will increase reliability. New Mexico, as previously discussed, has incredible solar and wind resources – some of the highest in the nation. Thus, the reliability of projects in New Mexico would be greater than elsewhere.

Renewable technologies are generally considered mechanically reliable, as well. For example, solar photovoltaic projects are thought to be extremely reliable, because the technology is durable, has high efficiency, low cost and a lack of moving parts.⁹⁶

VII. Conclusion and Policy Recommendations

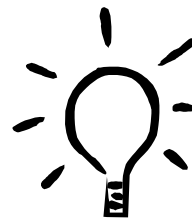
Historically, our country has relied on polluting fossil fuels and nuclear power to meet energy needs. As our country grapples to meet increasing energy demand, we must look toward a cleaner, more efficient energy future. The impending competitive market is a perfect opportunity to break our dependence on dirty power but this will only happen if policy makers take decisive action to level the playing field.

It is time for federal and state legislators and regulators to move New Mexico into the new century by promoting policies to protect public health and the environment. State policymakers need not wait for federal leadership to take action. We recommend adoption of the following policies:

Renewable energy

- ☀ Require utilities to provide a minimum 5 percent portion of their total energy from renewable resources such as solar and wind by 2005, increasing to 20% by 2020. This level is technologically and economically feasible, and would benefit all New Mexicans in many ways.
- ☀ Ensure state funds collected for renewable energy projects are spent as intended. These funds were designed to aid the development of public renewable energy projects, provide bill assistance to low-income consumers and increase consumer awareness.
- ☀ Require power providers to disclose their energy sources

and environmental impacts on customer's bills. This would allow consumers to make educated decisions when purchasing their energy.



Energy Efficiency

- ☀ Update state energy efficiency codes for buildings and appliances. New Mexico's efficiency codes are years behind national standards and updating them would save money and energy.

Dirty Power Plants

- ☀ Create a level playing field for all power plants by making older power plants meet the same emission standards as new power plants. In a competitive market, standards should be the same, thus, eliminating any unfair advantage or incentive to increase pollution from older power plants.
- ☀ Set strict limits on mercury and carbon dioxide emissions. There are currently no limits on the amount of these pollutants a power plant can emit.
- ☀ End federal and state subsidies for polluting power such as coal and nuclear. Government subsidies only provide incentives to continue the pollution of our air, land and water by these industries, instead of focusing on other less polluting energy sources.

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