

NEW MEXICO

<http://www.emnrd.state.nm.us/ECMD/index.htm>

The New Mexico Energy Conservation and Management Division (ECMD) oversees statewide energy efficiency, alternative transportation, clean fuel, and renewable energy programs. Program funding is provided primarily by the U.S. Department of Energy, enabling ECMD to deliver technical support and consultative services to New Mexico tribes, state agencies, schools and the general public.



Mission: The ECMD develops and implements effective clean energy programs—renewable energy, energy efficiency and conservation, alternative transportation and fuels—to promote environmental and economic sustainability for New Mexico and its citizens.

Programs: ECMD operates four Renewable Energy Programs (solar, wind, geothermal, biomass); a comprehensive Energy Efficiency Program, which encompasses building energy codes and standards, sustainable “green” building, and energy performance contracting; and an Alternative Transportation Program that includes clean-burning fuels (ethanol, biodiesel, compressed natural gas, hydrogen).

In addition, the Division administers an overarching Clean Energy Grants Program that funds demonstration projects, feasibility studies, resource assessments, and educational outreach efforts proposed by public entities such as municipalities, counties, tribal governments, K-12 schools, colleges/ universities, and State agencies.

ECMD is also involved in regional activities, including issues pertaining to interstate electricity transmission, U.S.-Mexico border energy, and the Western Governors’ Association’s Clean and Diversified Energy for the West initiative.

Renewable Energy

ECMD’s attention remained focused on renewable energy, especially given New Mexico’s world-class renewable resources and their potential to yield substantial economic and environmental benefits for our citizens. Governor Richardson again demonstrated his commitment to “leading by example” in renewable energy by requiring all State agencies to purchase at least 10 percent of their electricity from renewable sources. The Division facilitated these purchases and is monitoring compliance.

Solar Resources

Since 2004 there have been 25 solar systems installed at schools (18), state/local governments (4), tribal organizations (2), and community colleges (1) through state and federal funds, the majority being from the state legislature for EMNRD’s Clean Energy Grants program. Throughout New Mexico, in both urban and rural communities, solar systems have been installed to demonstrate solar thermal and photovoltaic technologies.

Schools with Sol is a solar demonstration program of EMNRD for New Mexico’s K-12 schools. The systems produce electricity and hot water for school facilities and examples of these types of installations are shown in the photos. Planned for installation during the 2004-07 timeframe, the systems create opportunities for renewable energy education in New Mexico’s schools; provide residential-scale demonstrations in the schools’ local communities; and displace conventional electricity, natural gas, and propane consumption in

school facilities.

Several incentives for solar energy came together for the first time in 2006 that greatly improve the economics for photovoltaic systems of 10 kW and smaller. The combined benefits of solar tax credits, both state and federal, and PNM's energy production rebate program have made photovoltaic systems economical over a nominal 25-year lifecycle. The solar tax credits reimburse taxpayers for 30% of system capital cost, up to a maximum of \$11,000 (state: \$9K; federal: \$2K), while the energy production rebate pays interconnected utility customers 13 cents per kilowatt-hour for all solar electricity produced over time. Coupled with net metering and the direct utility electricity savings, a photovoltaic system operating under New Mexico's outstanding solar resource can pay for the original investment in 25 years.

Taxpayers installing solar water heating systems can take advantage of the state and federal tax credits. Low-cost solar domestic hot water systems can utilize the federal tax credit alone in many cases, while higher cost solar space heating systems can benefit from both state and federal tax credits. Direct solar air heating systems qualify for the state solar tax credit. Solar swimming pool heating systems are not eligible for either, but no assistance is needed: the less expensive collector technology used can potentially lead to heating fuel savings paying off the installation expense in only a few years.

New Mexico's solar tax credit program is fundamentally improved from the program of 25 years ago. For taxpayers to be eligible for a tax credit, solar systems must be approved for the quality of components and installation through EMNRD's certification process. Key requirements of certification are installation by a licensed New Mexico contractor and approval by the building code authority. The tax credit is available through 2015 and up to \$5 million in state government support is available each year.

ECMD continued to implement major projects that use our extensive solar resource. Funding from the U.S. Department of Energy's State Energy Program and our Clean Energy Grants Program have supported these activities in the past. However, future funding for these activities has diminished. EMNRD each year provides public information and educational activities on solar energy at various conferences, workshops, and other venues, including the Taos Solar Music Festival, New Mexico State Fair, and the New Mexico Solar Energy Association's Solar Fiesta. ECMD also evaluated the potential of Concentrating Solar Power technologies.

Wind Resources

Through its Wind Power Program, ECMD has performed a critical role in the development of wind power in the state. The information ECMD provides, especially wind data, has been instrumental in the development of utility-scale wind power plants. The program has provided detailed wind resource assessments of the state and high quality wind data to over 40 wind power developers, PNM, landowners and others. ECMD has provided three years of wind speed data collected at eight promising sites and is continuing detailed wind energy resource assessment in order to promote further commercial development. In 2005 ECMD installed a permanent, 100-meter tall wind-monitoring tower, to provide improved wind data for the industry. This project was motivated by the fact that modern turbines have rotors up to 100 meters or higher. Wind data at 40 meters must be extrapolated, reducing the accuracy. Also, a permanent installation will allow future projects the opportunity to correlate their on-site data to our long-term data in real time, thus reducing the monitoring period required and improving accuracy. Finally, this permanent monitoring tower will reveal any trends due to climate change.

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Geothermal Resources

A geothermal strategic plan was published in 2005, utilizing U.S. Department of Energy (DOE) funding, to provide recommendations and promote action for future geothermal development in New Mexico. It was prepared by NMSU in collaboration with the New Mexico Geothermal Energy Working Group (NMGEWG), Geothermal Heat Pump Consortium, DOE's Geopowering the West program, and EMNRD. The strategic plan presents background on geothermal development in New Mexico to date and provides recommended future actions in the direct use, power generation, and heat pump technology areas. NMGEWG is a group of stakeholders in New Mexico's geothermal industry, including developers, drillers, geologists, engineers, scientists, utility representatives, government managers, facilities managers, and energy consultants.

Bioenergy Resources

ECMD is focused on the increased development and use of biomass, including forest thinnings, dairy/livestock manure, landfill gas, and other feedstock materials. New Mexico has significant bio-based resources that may be used to create energy. Two areas currently being studied and utilized are dairy waste and forest biomass. Municipal waste treatment and landfill gas projects are also underway and are under development. Bio-energy feedstock may be produced or harvested explicitly for energy production or may be a waste stream from agricultural, municipal or industrial sources.

Several factors have recently contributed to the growth of bio-energy projects in New Mexico: 1) The State's Renewable Energy Portfolio Standard gives two-to-one credits for this use. 2) Reduction of catastrophic fire potential. Energy Conservation and Management Division has funded the following woody biomass, dairy biomass and municipal waste projects using funds appropriated by the NM legislature, US DOE and USDA.

CLEAN FUELS AND TRANSPORTATION RESOURCES

ECMD encourages and supports the development of alternative transportation programs (ride-sharing, park & ride campaigns) as well as the promotion of alternative fuel vehicle acquisition and renewable fuel infrastructure development.

ECMD continues to provide financial support for the Las Cruces Rideshare Program that provides assistance to commuters interested in using carpools and vanpools in southern New Mexico. This program has reported reduced vehicle miles traveled of over 26 million and displacement of 2.2 million gallons of fuel for 502 carpools and 12 vanpools.

In 2006, ECMD worked with other state agencies to develop an implementation plan for Executive Order 2005-049 that requires that state government replace Fifteen percent (15%) of their transportation fuel use with renewable fuels such as ethanol and biodiesel by 2010.

ECMD convened a Renewable Fuels Task Force as directed by the 2006 House Memorial 41 (HM 41) to evaluate New Mexico's potential for renewable fuels production from the agricultural sector. House Memorial 41 acknowledged that the State of New Mexico currently has abundant supplies of oil and gas, but those reserves are finite. Further, the Memorial recognizes the need to reduce foreign imports of oil. Recognizing the need for rural economic development opportunities in New Mexico, HM 41 suggests that renewable fuels can provide opportunities while ensuring a sustainable energy future and reducing vehicle air emissions.

The Task Force was also charged to develop strategies to enhance a renewable fuels industry and recommend legislation for renewable fuels standards for the 2007 legislature. The Task force endorsed a thirty percent corporate tax credit for year 2008 to 2013 for capital costs, operation and maintenance costs as well as research and development costs incurred in connection with the production, storage, blending and distribution of liquid renewable fuels and gaseous renewable fuels such as hydrogen and methane. This includes the cost of construction, installing and equipping such technologies, up to maximum of \$6.5 million per state fiscal year for all taxpayers, including refueling station retrofits for renewable fuels. A fifty thousand dollar cap per occurrence would ensure that large producers are not the sole beneficiaries of the tax credit. Only products produced and used in the state could be eligible for the tax credit.

House Memorial 41 defined renewable fuels as fuels derived from agricultural and forest waste products; as defined, these fuels must meet ASTM standards. House Memorial 41 cites Executive Order 2005-049 and the federal Energy Policy Act of 2005, which states that seven and one-half million gallons of ethanol be produced and consumed annually by 2012.

Alternative Fuel vehicle acquisitions for state government including 1992 model year through 2005 model year total 1,549 vehicles including 41 CNG buses and 8 Hybrid Electric vehicles. It is expected that the total vehicle acquisition for 2006 model year will be approximately 200 including 4 CNG buses and 4 Hybrid Electric vehicles. We are in compliance with both Federal and State mandates.

Clean Energy Projects

In the last two years, EMNRD-ECMD solicited proposals under the Clean Energy Projects Program from eligible public entities, including municipalities, counties, public schools (K-12), colleges/universities, State agencies and tribal governments.

No funding was received in 2006 for this program. Projects have been awarded throughout New Mexico in the following program areas:

Renewable Energy - Solar, wind, geothermal, biomass, and hydrogen technology applications in all sectors; distributed energy technologies such as fuel cells and district heating systems; co-generation (combined heat and power).

Energy Efficiency and Conservation - Technology applications such as energy control systems and efficient lighting, motors and appliances, as well as behavioral practices, that reduce energy use and costs in buildings and the transportation sector; residential/commercial building energy codes and standards.

Clean, Efficient Transportation - Ridesharing/carpooling; park-and-ride programs; vehicles and infrastructure for use of clean-burning fuels such as compressed natural gas (CNG), ethanol (E-10, E-85), and biodiesel.

Benefits resulting from the Program include a reduction in energy consumption and expenditures; generation of new jobs and revenues; environmental protection and improvement (e.g., reducing emissions of air pollutants and greenhouse gases); enhancement of public health; decreased dependence on foreign oil; greater energy security.