

Nevada

Status of Energy Report

2011-12



Nevada State
OFFICE OF ENERGY

energy.nv.gov



Nevada State OFFICE OF ENERGY

BRIAN SANDOVAL
Governor

STACEY CROWLEY
Director

◆ ◆ ◆
NRS 701.160 *Submission of reports.*
The Director shall prepare a report concerning the status of energy in the State of Nevada and submit it to:
1. The Governor and the Commissioner on or before July 1 of each year; and
2. The Director of the Legislative Counsel Bureau for transmittal to the next regular session of the Legislature on or before July 1 of each even-numbered year.

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◆ ◆ ◆
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ENERGY EFFICIENT STREET LIGHTS: This street light in Winnemucca was funded as part of the Energy Efficiency Community Block Grant to assist Nevada communities in implementing energy efficiency upgrades. Street-light retrofits statewide have reduced energy and maintenance costs for city and county governments.

FROM THE DIRECTOR

Welcome to the *2011–12 Status of Energy Report*. This document includes information on energy usage in the State of Nevada and a summary of the status of the State Office of Energy's programs and what those programs have accomplished through July 1, 2012. Some highlights include:

- **Per capita energy consumption is down 28 percent** from a base year of 1990 based on 2010 data. Federal requirements mandate a 25 percent reduction in energy use in the state by the calendar year 2012.
- **Energy usage in state-owned buildings has been reduced by 6.3 percent** from 2005 based on data from 2005 through 2011. This is a significant reduction and moves us closer to our goal of a 20 percent reduction in grid-based energy usage in state-owned buildings by 2015.
- **More than 15,287 rebates worth \$2,386,200** were issued to Nevadans under the state's energy-efficient appliance rebate program between 2009 and 2010.
- **The office's revolving loan program (page 18) has loaned more than \$14 million** to 15 projects.
- **As of May 2012, Nevada shared first place with Indiana for having allocated 99.8 percent of ARRA funds** for the State Energy Projects Program, a program designed to increase energy efficiency, reduce reliance on imported energy, and minimize energy-production impacts on the environment. Those projects are explained further in this report.

The Energy Office oversees programs provided through statute and those that help to meet the office's mission. Office staff has grown in recent years to accommodate the 2009 American Recovery and Reinvestment Act (ARRA) programs that were implemented to support job creation, reduce carbon emissions, and promote renewable and energy efficiency projects. The U.S. Department of Energy recognized the Energy Office on several occasions for distinguishing itself as one of the leading states in ARRA implementation. Beyond ARRA, the office has launched a number of programs designed to increase clean energy production and conservation in the state. Programs and initiatives include EnergyFit Nevada, the statewide renewable energy project, a revolving loan program, the Nevada Rooftop Solar Initiative, and a commercial building retrofit program. The office also absorbed the duties of the Energy Commissioner and Renewable Energy and Energy Efficiency Authority, and, as such, pursuing the business case for the renewable energy industry and transmission planning through the New Energy Industry Task Force.

We hope you find this report informative as to Nevada's energy status and what the office has been doing in recent years. Please contact me with your questions and comments.

STACEY CROWLEY, DIRECTOR
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OUR MISSION

To ensure the wise development of the State's energy resources in harmony with local community economic needs and Nevada's natural resources to lead the nation in renewable energy production, energy efficiency and conservation, and exportation.

We strive for this by facilitating cooperation between key stakeholders, leading initiatives to stimulate economic development and attracting every energy related business venue; including energy education, retro-fitting, manufacturing, site development, generation and production, interstate and intrastate transmission, materials transportation, and energy-related recycling.



OFFICE ACCOMPLISHMENTS

2011

- ▶ The office secured grants for the State Energy Program, EnergyFit Nevada and Rooftop Solar Initiative, each of which aim to increase energy efficiency and the use of renewable energy in Nevada.
- ▶ The office merged with the Renewable Energy and Energy Efficiency Authority (REEEA) and took over its duties and responsibilities.
- ▶ With the support of Governor Sandoval and DOI Secretary Salazar, a Memorandum of Understanding between the office and the Bureau of Land Management was signed to solidify an effective working relationship on Nevada's renewable energy and transmission issues. The two offices meet regularly to encourage the timely and responsible development of renewable energy and associated transmission while protecting and enhancing resources.
- ▶ The Governor's Executive Order 2011-18 charged the New Energy Industry Task Force with working on regional transmission planning and developing a business case for renewable energy in the state. The Task Force is managed and chaired by the Director and plans to have preliminary recommendations by August 2012.
- ▶ The Department of Energy said the office ranked first in the U.S. in percent of Energy Efficiency and Conservation Block Grant funds expended – with 91 percent of fund allocated to projects. The next state was Kentucky at 59 percent. The national average was 18 percent.
- ▶ Senate Bill 59 increased the net metering cap for utilities from 1 percent to 2 percent of total peak capacity, thereby increasing potential distributed renewable energy generation projects in the state. Senate Bill 60 increased the allowable uses to take advantage of the Revolving Loan Fund program – adding energy efficiency, conservation, and renewable energy manufacturing to what was formerly only renewable energy generation projects.

2012

- ▶ The City of Las Vegas Mayor and City Council proclaimed June 6 as EnergyFit Nevada day to help promote EnergyFit Nevada, a statewide initiative to improve energy efficiency in residential homes.
- ▶ The U.S. Department of Energy declared that the office was tied for first place with Indiana for having allocated 99.8 percent of its ARRA funding.
- ▶ The Department of Energy commended the Energy Office for its excellent work with the State Energy Program. The office was cited as being “instrumental in promoting and implementing effective energy efficiency and renewable energy programs throughout the State of Nevada.”
- ▶ Working with NV Energy and the State Public Works Division, the department obtained information on energy consumption in state-owned buildings. With a procedure now in place, the department will be able to track energy usage going forward.

The Energy Office was cited by the DOE as being “instrumental in promoting and implementing effective energy efficiency and renewable energy programs throughout the State of Nevada.”

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ENERGYFIT NEVADA DAY: Energy Office Director Stacey Crowley accepts the EnergyFit Nevada Day proclamation in June 2012 from Las Vegas Mayor Carolyn Goodman and the Las Vegas City Council. EnergyFit Nevada is a residential energy efficiency rebate program. Information is available at www.energyfitnevada.com.

Energy Usage in 2011

This chapter presents data for calendar year 2011. The next chapter, entitled Energy Office Projects, brings current (i.e., through June 2012) the status of all recently completed and active projects within the Energy Office.

ELECTRIC ENERGY CONSUMPTION

Electric energy consumption in Nevada consists of customers of the investor-owned utility (NV Energy), rural electric cooperatives (co-ops), municipal utilities (munis), general improvement districts (GIDs), Shell Energy North America (Shell Energy), and the Colorado River Commission of Nevada (CRC). As shown in the chart, NV Energy provides 84 percent of the state's electrical power. Eight percent is provided by the co-ops, munis, and GIDs with co-ops accounting for the largest percentage of that group. Three percent is provided by Shell Energy, which currently supplies purchased power to Barrick Mines (i.e., Goldstrike, Turquoise Ridge, and Cortez). The CRC makes up the remaining 5 percent and provides power to the Southern Nevada Water Authority and a group of industrial companies in Clark County

Megawatt hours consumed in 2011 is presented in the table on the next page. For reference, maps showing the service areas of NV Energy, the GIDs, munis, and co-ops are presented on pages 8 and 9. As shown on the 2010 map prepared by the Nevada Rural Electric Association (NREA), the service area of several of the service providers extends into neighboring states; however, the electric energy consumption figures presented in the table are estimated for Nevada only. The Surprise Valley Electric Corporation is not listed because, even though they have a large service area in northern Washoe County, the number of customers and electrical consumption is minimal.

The information presented in the charts on the next page is for the state's largest utility provider, NV Energy. To generate electricity, the state uses several sources including natural gas, coal, nuclear (purchased), hydroelectric (from small and large sources), and renewable. As shown, most of our electricity (62 percent) is generated by natural gas with coal providing the next largest segment at 25 percent. It should be noted that the renewable percentage identified in the chart does not correlate with the percentage identified under the discussion of NV Energy's Renewable Portfolio Standard (RPS) on page 13. This discrepancy is due to the fact that RPS carryover credits and credits from energy efficiency and conservation are not accounted for in the chart.

As shown in the chart, renewable energy comes from several different sources – geothermal, solar, wind, hydroelectric (from small sources), biofuel, and biomass.

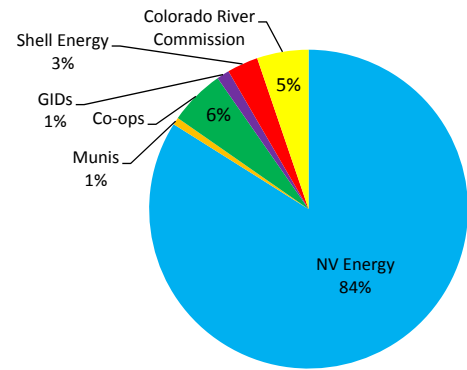
Renewable energy is defined in NRS 704.7811 as biomass, geothermal, solar, wind, and waterpower. Waterpower is further defined as power derived from standing, running or falling water which is used for any plant, facility, equipment, or system to generate electricity if the generating capacity is not more than 30 megawatts. The term renewable energy does not include coal, natural gas, oil, propane, any other fossil fuel, or nuclear energy.

2011 Electric Energy Consumption (In megawatt hours)

<u>Provider</u>	<u>MWh</u>
NV Energy (Sierra & Nevada Power)	28,344,926
Municipal Utilities	
Boulder City Electric Utility	167,000
Fallon Municipal Electric	<u>85,521</u>
Subtotal	252,521
Cooperatives	
Harney Electric	95,506
Mt. Wheeler Power	490,437
Wells Rural Electric Co.	781,251
Raft River Rural Electric	55,288
Plumas-Sierra Rural Electric	4,084
Valley Electric Association	<u>484,866</u>
Subtotal	1,911,432
GIDs	
Overton Power District #5	352,026
Lincoln County Power District ¹	<u>80,874</u>
Subtotal	432,900
Shell Energy of North America	1,064,933
<u>Colorado River Commission of Nevada</u>	<u>1,766,029</u>
TOTAL	33,772,741

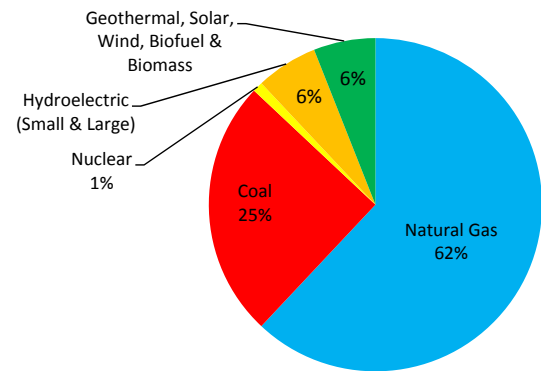
¹ Lincoln County Power District includes Alamo Power District #3, Pioche Public Utility, Caliente Municipal Electric, and Penoyer Valley Electric Cooperative
Sources: NV Energy, Nevada Rural Electric Association, Fallon Municipal Electric, Valley Electric Association, Public Utilities Commission of Nevada, and CRC

Electric Energy Consumption by Provider



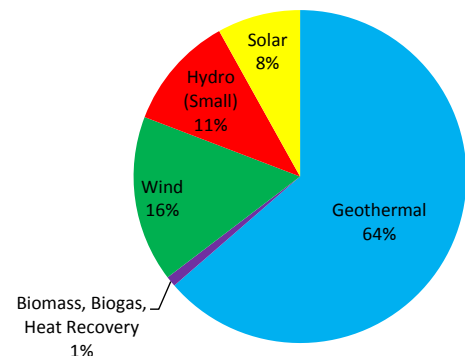
Sources: NV Energy, Nevada Rural Electric Assoc., Fallon Municipal Electric, Valley Electric Assoc., Public Utilities Commission of Nevada, Colorado River Commission of Nevada

Sources of Electric Energy

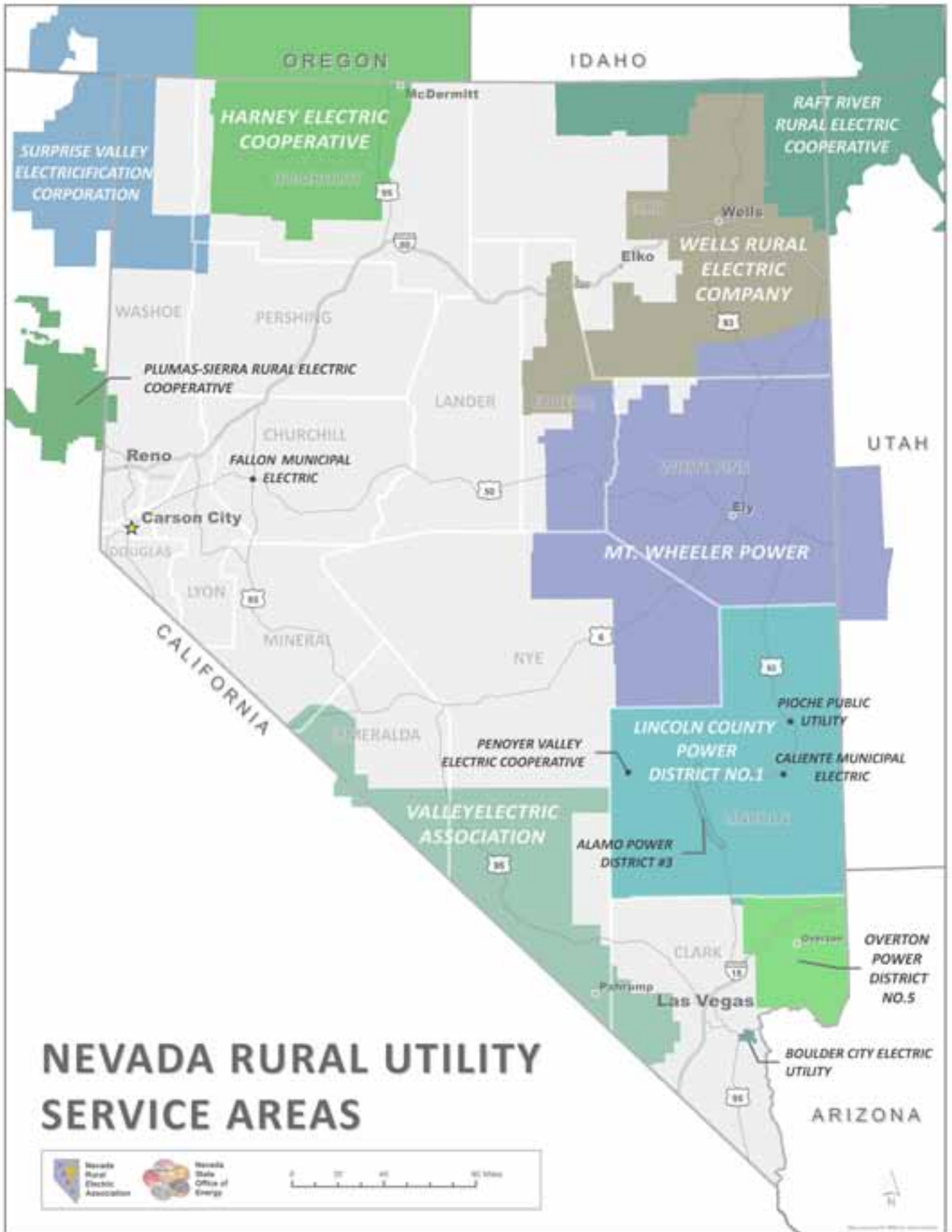


Sources: NV Energy, Public Utilities Commission of Nevada

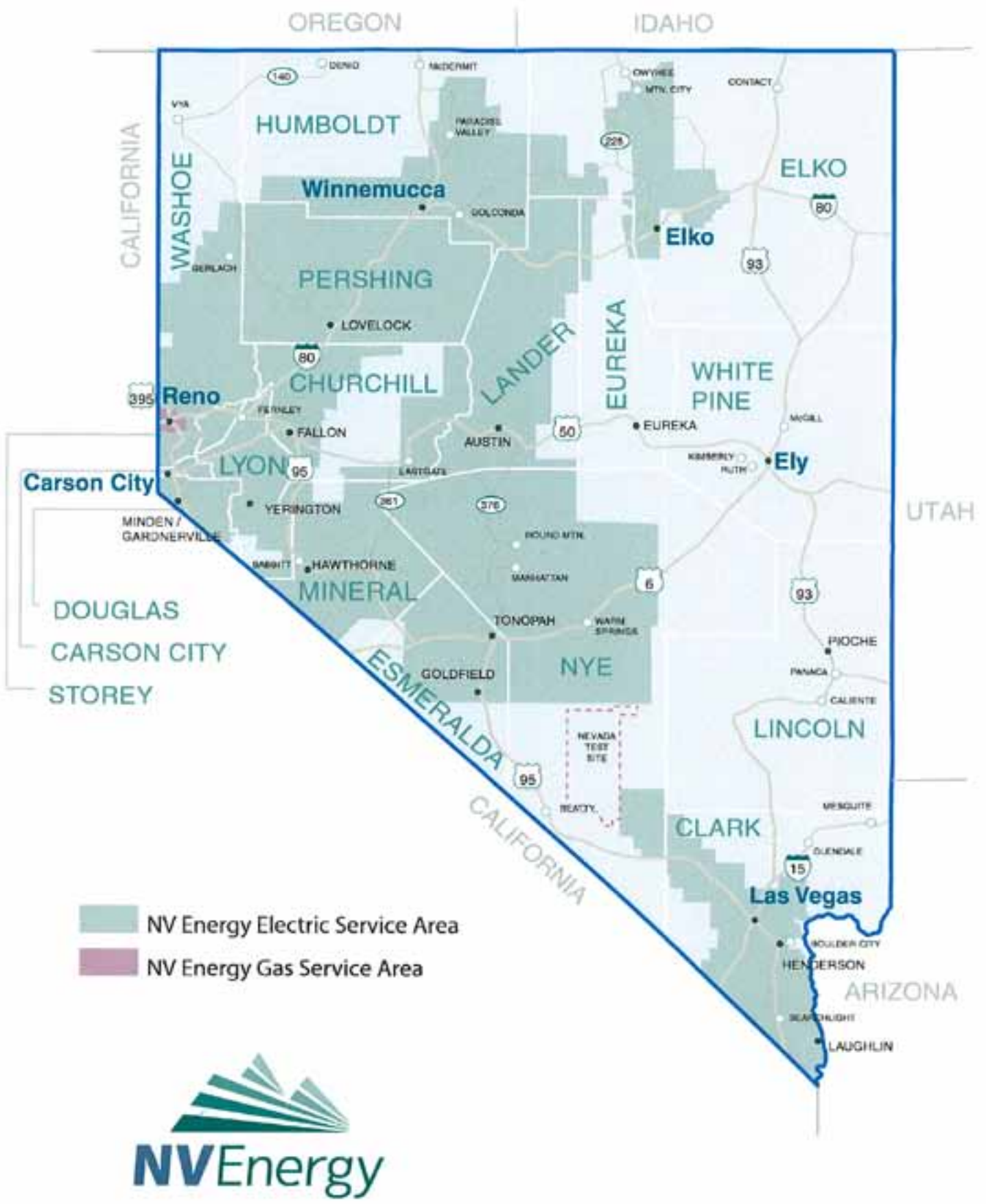
Sources of Renewable Energy



Sources: NV Energy, Public Utilities Commission of Nevada



Source: Nevada Rural Electric Association



Source: NV Energy

Nevada has achieved a 26.6 percent reduction in per capita energy consumption since 1990.

PER CAPITA ENERGY CONSUMPTION

For states to be eligible for financial assistance, federal requirements mandate that state plans include “. . . a goal consisting of an improvement of 25 percent or more in the efficiency of use of energy in the state in the calendar year 2012, as compared to the calendar year 1990.” The data below show that Nevada exceeded that goal in 2010 with a 26.6 percent reduction in per capita energy consumption. (Total energy consumption data for 2011 will be available in the fourth quarter of 2012.)

Per Capita Energy Consumption 1990-2010
(Millions of BTU)

<u>Year</u>	<u>Population</u>	<u>BTU/Person</u>
1990	1,236,130	323
2000	2,066,831	303
2001	2,132,498	293
2002	2,206,022	288
2003	2,296,566	284
2004	2,410,768	289
2005	2,518,869	287
2006	2,623,050	291
2007	2,718,337	284
2008	2,738,733	272
2009	2,711,206	261
2010	2,724,634	237 <i>A 26.6% reduction!</i>
<u>2011</u>	<u>2,721,794</u>	<u>Not Yet Available</u>

Source: Nevada State Demographer, Certified Population Estimates, July 2000 – July 2011,
U.S. Energy Information Administration

The Caliente Depot’s new HVAC system helps reduce energy consumption and saves on power costs.



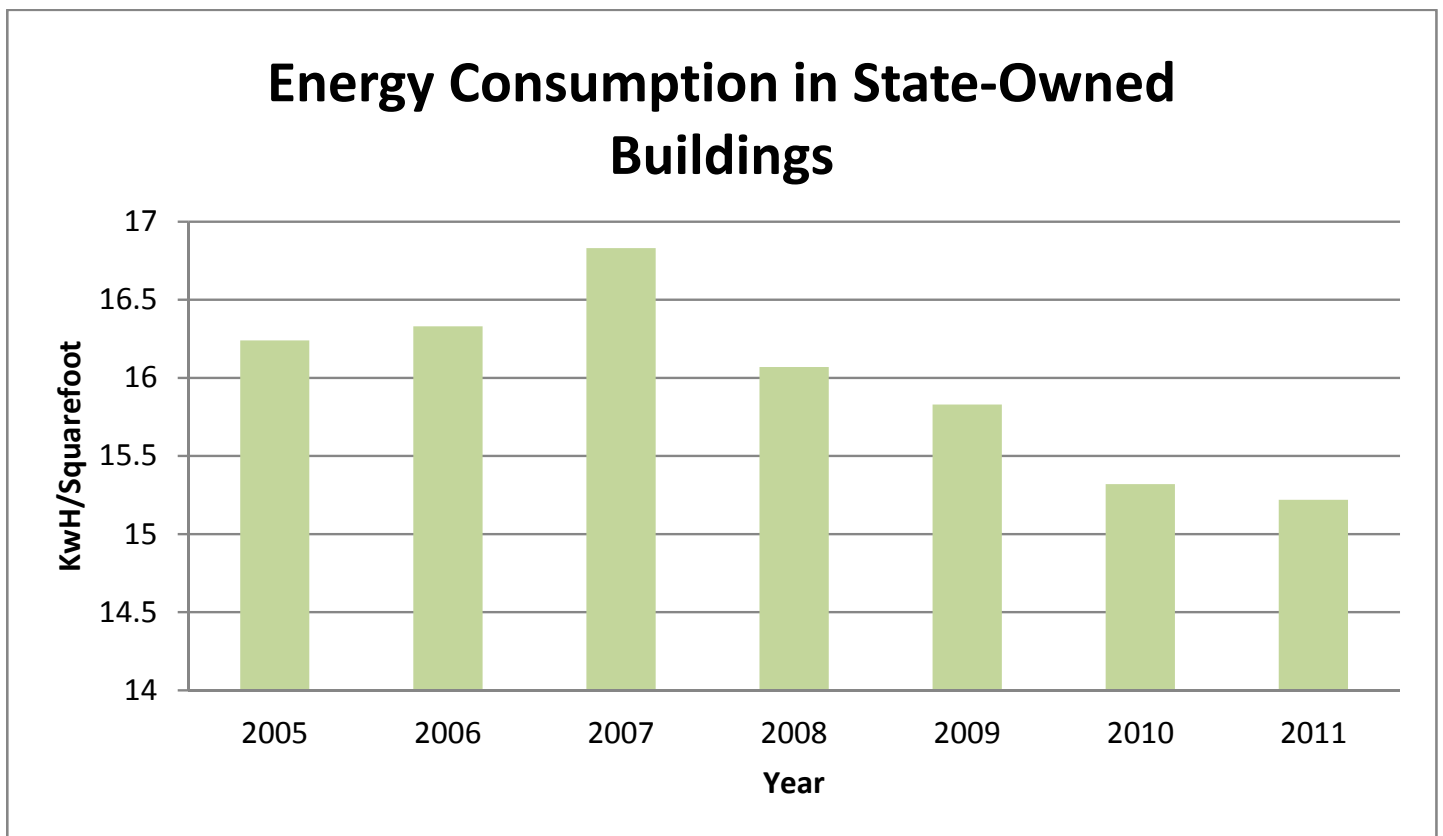
ENERGY USAGE IN STATE-OWNED BUILDINGS

The Nevada Revised Statutes (NRS 701.215) require the Director to prepare a state energy reduction plan which directs state agencies, departments, and other entities in the Executive Branch to reduce grid-based energy purchased for state-owned buildings by 20 percent by 2015. Since this requirement was added to NRS in 2005, it has been assumed that 2005 is the base year from which the reductions will be calculated. Further, since grid-based energy is specifically referenced, only electric energy consumption has been tracked.

Information on energy consumption in state-owned buildings has not been presented in previous status reports. This information has, however, been obtained for the 2011 report. The primary source for this information is NV Energy. State-owned buildings currently total 23,526,624 square feet. Since 2005 the state has added 2,383,801 square feet of building area to its inventory. Therefore, to accurately present the information on energy-consumption in state-owned buildings, usage is presented on a square foot basis (i.e., kilowatt hours per square foot). Ninety five percent (95%) of state-owned building are served by NV Energy. The remaining 5 percent are served by various municipal utilities, co-ops, and general improvement districts (i.e., Mt. Wheeler Power, 2.4%; Wells Rural Electric Company, 1.1%; Caliente Power Company, 0.6%; and the remaining 0.9% is split between several small utility companies). These small companies do not have records available for the past few years; therefore, it is not possible to determine whether there have been reductions in energy usage over the 2005 to 2011 time frame.



New, energy efficient lighting in the state printing building has helped reduce electrical usage.



Source: NV Energy, State Public Works Division

Energy consumption in state-owned buildings has gone down by 6.3%.

As the figures show, energy consumption in state-owned buildings has gone down by 6.3%. Usage in 2005 was 16.24 kilowatt hours per square foot and usage in 2011 was 15.22 kilowatt hours per square foot. This is a fairly sizeable reduction; however, it will be difficult to achieve an additional 14 percent reduction in the few years remaining between now and 2015. Based on conversations with the staff of the State Public Works Division (SPWD), the state can probably anticipate another 1 percent reduction in energy usage as a result of the retrofit work completed with the money received from the American Recovery and Reinvestment Act of 2009. Many of the retrofit projects were completed in the past few months and, therefore, the benefits are not yet apparent in the data available from NV Energy.

A variable that must be considered when comparing one year's data against another is the fact that the number of employees and plug loads do not remain constant over the years. For example, more employees may be moved into a building or equipment may be added. Since circumstances change over the years, it is challenging to accurately compare one year to another.



ROOFTOP SOLAR at the DMV in Henderson.



Spring Valley wind array.

RENEWABLE PORTFOLIO STANDARD

In 1997, the Nevada Legislature enacted into law the Nevada Renewable Portfolio Standard (RPS), which mandates that a share of the energy delivered to Nevada retail customers come from renewable energy resources. Renewable resources, as defined under the NAC, include geothermal, solar, wind, small hydro, biomass, and recovered energy from waste heat sources. For calendar year 2011, the RPS required that not less than 15 percent of electricity sold to Nevada retail customers must come from renewable energy resources, and not less than 5 percent of that amount must be generated or acquired from solar resources. Additionally, not more than 25 percent of that amount may be met through energy efficiency measures. The energy efficiency measures achieved a savings of 2,167,847 MWh based on calculations prepared from data contained in NV Energy's Portfolio Standard Annual Report for Compliance Year 2011.

In 2011, the RPS increased from a 12 percent requirement to a requirement of 15 percent of total retail energy sales from renewable resources. The RPS increases again to 18 percent in 2013 and 2014, 20 percent in 2015 through 2019, 22 percent for the years 2020 through 2024, and finally to 25 percent for 2025 and beyond.

Based on information contained in NV Energy's Renewable Portfolio Standard Annual Report for Compliance Year 2011, NV Energy successfully met and exceeded the increased 2011 RPS credit requirements which state that 15 percent of retail sales come from renewable energy resources and 5 percent of that amount comes from solar resources. In southern Nevada, Nevada Power exceeded both the 2011 RPS requirement and the solar RPS requirement, achieving 16.7% and 10.0%, respectively. In northern Nevada, Sierra exceeded both the RPS requirement and the solar RPS requirement ending the year at 24.9% and 8.2%, respectively.

The RPS outlook for NV Energy is favorable based on current assumptions and contracts, with both the north and south service areas on target to meet RPS compliance requirements for several years.

In 2011, Southwest Gas' Conservation and Energy Efficiency (CEE) programs saved 787,864 annual therms. Southwest Gas' CEE Plan consists of five programs designed to reduce consumption and improve energy efficiency in a cost effective manner.

At right is part of a small-scale hydroelectric project at the Young Brothers Ranch in Lander County. The brothers, Ralph and Paul, received a HydroGenerations rebate from NV Energy, part of the RenewableGenerations program.



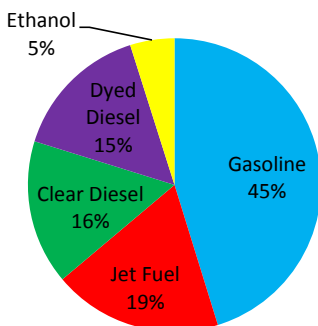
STATUS OF UTILITY-FUNDED SOLAR, WIND AND HYDRO PROJECTS

A summary of NV Energy’s RenewableGenerations program for solar (electric and hot water), wind, and hydro is available online: http://issuu.com/nvenergyrenewablegenerations/docs/12.11_monthlyreport.

TRANSPORTATION FUEL CONSUMPTION

Transportation fuels fall into the category of fossil fuel and alternative fuel. Fossil fuels include gasoline, jet fuel, diesel (dyed and clear), and aviation gas. The federal definition of alternative fuels includes natural gas, electricity, liquefied petroleum gas (propane), methanol, ethanol, and certain blends.

2011 Sources of Transportation Fuel



The taxable fuel consumption by source is presented in the chart. Fuels that satisfy NAC 486A include federally reformulated gasoline (RFG) or equivalent, low sulfur diesel (15 ppm), blends of 20 percent biodiesel with 80 percent petroleum diesel, A-55 formulated with naphtha, hybrid electric vehicles, and “certified vehicles” (i.e., gasoline vehicles with a federal ultra low-emission vehicle ULEV rating).

The table on page 15 presents taxable fuel consumption by fuel type in millions of gallons. Biodiesel is not identified separately because it is not segregated from taxable diesel sales and, therefore, is not easily separated.

Source: Nevada Department of Taxation, Nevada Department of Motor Vehicles

Transportation Fuel Consumption

(Millions of gallons)

<u>Source</u>	<u>Gallons</u>	<u>Percent</u>
Gasoline	981.00	45%
Jet Fuel	404.80	19%
Clear Diesel (on-road)	346.10	16%
Dyed Diesel (off-road)	332.30	15%
Ethanol	106.20	5%
CNG(Natural Gas)	0.24	>.01%
LPG(Propane)	1.85	>.01%
<u>Aviation Gas</u>	<u>1.87</u>	<u>>.01%</u>
TOTAL	2,174.36	100%

Source: Nevada Department of Taxation, Nevada Department of Motor Vehicles



The State of Nevada Motor Pool's flex-fuel tank in Las Vegas.

Energy Office Projects

■ *Active Projects*

The Energy Office has a number of active projects geared to improve the energy efficiency of Nevada homes, increase the use of renewable sources of energy, and enhance the tracking of energy use in the state. This section highlights the office's current programs and results achieved to date.



ENERGYFIT NEVADA

Project Manager: Kevin Hill

The Energy Office received a three-year, \$5 million Department of Energy grant in 2010 for EnergyFit Nevada, a program aimed at increasing comfort and energy savings in Nevadan's homes while reducing energy consumption. Homeowners can learn more at EnergyFitNevada.com and sign up for the program. Low-interest loans are available to fund recommended upgrades, and if the home shows a minimum 20 percent increase in energy efficiency, the homeowner can receive a minimum \$1,000 rebate. The program's goal is to upgrade 1,750 single family residences in Nevada by October 2013.

★ **RESULTS**

COORDINATION: Regular meetings are being held with the Energy Office; University of Nevada, Reno; University of Nevada, Las Vegas; Home Free Nevada; Truckee Meadows Community College; the City of Las Vegas; and the U.S. Department of Energy.

MARKETING: Press conferences were held in June 2011 in Reno and Las Vegas launching the initiative, resulting in positive media coverage and 150 inquiries fielded by Home Free Nevada, the nonprofit partner that connects homeowners with approved contractors. An all-day marketing charrette was conducted in October 2011, facilitated by two marketing consultants, Purdue Marion and Walden Hyde. The charrette resulted in developing the program's marketing and advertising campaign and materials including brochures, logo development, and a website have been created (www.energyfitnevada.com) and are being widely distributed ahead of a larger media campaign scheduled to occur in the summer of 2012. Team members continue to promote the program at public events and to industry partners.

UPGRADES: As of mid-June 2012, 96 homeowners have upgraded their homes, making them more comfortable, reducing energy consumption, and saving money through rebates offered by the Energy Office. Another 56 homes are in the process of being upgraded.

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NEVADA ROOFTOP SOLAR INITIATIVE

Project Manager: Robert Nellis

The Nevada Rooftop Solar Initiative, one of the Energy Office's newest programs, is designed to increase and strengthen Nevada's residential and commercial rooftop-solar photovoltaic market by:

- Standardizing codes, inspections, and ordinances
- Developing an efficient process to implement rooftop solar installations from concept to final completion, and
- Building upon existing programs and efforts to develop revolving loan programs.

The main goal of the program is to streamline the permitting and interconnection process for rooftop-solar systems so that installations can be completed within two months of approval. The project also aims to make solar electricity cost-competitive with other forms of energy – as well as to ultimately see 5 percent of all single family homes and businesses in Nevada using rooftop-solar systems.

★ RESULTS

The Rooftop Solar Initiative is built on a foundation of public-private partnership, experience, and expertise. Partners include the Associated General Contractors, Clark County, the University of Nevada Las Vegas, Truckee Meadows Community College, NV Energy, Southern Nevada Water Authority, Public Utilities Commission, and the cities of Las Vegas, North Las Vegas, Henderson, and Reno.

To date, the initiative has secured \$765,000 for the initial stages of the project. Phase 1, which ends December 1, 2012, includes formalizing partner agreements, developing the project plan, reviewing the framework for streamlining PV installations, holding planning and permitting workshops, assembling a contractors' list, conducting focus groups, and developing a marketing and outreach plan. Anticipated project outcomes include reducing the costs of rooftop-solar PV to less than \$4 per watt installed by 2016, generating more than 200,000,000 MMBtu in annual energy savings, creating or preserving more than 1,000 jobs, and contributing an economic impact of more than \$200 million to the state by 2020.

Goals include reducing the costs of rooftop-solar PV to less than \$4 per watt installed by 2016 and contributing an economic impact of more than \$200 million to the state by 2020.



ROOFTOP SOLAR: A primary goal of the Rooftop Solar Initiative is to streamline the permitting and interconnection process for rooftop-solar systems so that installations can be completed within two months of approval.

REVOLVING LOANS FOR RENEWABLE ENERGY

Project Manager: Robert Nellis

More than \$8 million was funded under the federal American Recovery and Reinvestment Act of 2009 to provide short-term, low-cost loans to developers of renewable energy projects in Nevada. These loans serve as a bridge financing option to provide funding for various startup costs associated with these projects. Once projects reach mature levels and financing is in place, the loans are repaid. Projects that fall under the categorically exempt size requirements for the National Environmental Policy Act are given a higher priority in order to avoid potentially lengthy delays due to environmental reviews.

★ RESULTS

The original \$8.2 million in funding has been built up to more than \$12.8 million, mainly due to moving unspent ARRA funds from other programs into the Loan Fund. According to the U.S. Department of Energy, Nevada was the first state to have 100 percent of its ARRA revolving-loan funds allocated, indicating efficiency by the Energy Office as well as the industry's interest in developing projects in Nevada. The program is now self-funded, and, in early 2012, \$474,705 in unspent ARRA funds were transferred to the revolving loan fund and loaned to two new projects. Additional funding is being sought to continue to grow the existing the program.

GREEN BUILDINGS

Project Manager: Kevin Hill

Leadership in Energy and Environmental Design (LEED) is the rating system used to measure energy efficiency and other environmental attributes in buildings. The Energy Office administers the green building tax abatement program based on the LEED rating system. The program was instituted in 2007 as an incentive for business owners to improve the energy efficiency of new and existing buildings. The abatement ranges from 25 to 35 percent for 5 to 10 years depending on the building's final LEED rating (minimum of Silver Level).

★ RESULTS

More than 20 LEED buildings in Nevada, primarily in Washoe and Clark counties, received tax abatements through this program. The buildings range in type and include new construction, core and shell, and renovation of existing buildings. A bill from the 2011 legislative session, AB202, modified the requirements, limiting the eligible existing building abatement to only manufacturing facilities with a minimum number of employees and other requirements. The list of active green building tax abatement projects in Nevada is available online: http://www.energy.state.nv.us/documents/LEED_ProjectLog.pdf

More than 20 buildings in Nevada, primarily in Washoe and Clark counties, have been LEED certified and received tax abatements through the Energy Office's green-building tax abatement program.



Palazzo, Las Vegas
LEED SILVER



302 East Carson
Building, Las Vegas
LEED GOLD



PetSmart Distribution
Facility, Las Vegas
LEED SILVER



The Energy Office has hosted about 80 trainings statewide on new energy codes in order to bring contractors, architects, and developers into compliance with new standards.

BUILDING ENERGY CODES

Project Manager: Emily Nunez

More than \$1 million was funded under the federal ARRA to adopt the 2009 International Energy Conservation Code (IECC) in Nevada as the state's minimum standard, to provide outreach and training to stakeholders, and to develop a plan to ensure compliance with the code by 2017. The 2009 IECC has been adopted by many states to ensure minimum design and construction requirements for energy efficiency.

★ RESULTS

The 2009 IECC was adopted as the minimum standard in Nevada and goes into effect July 1, 2012. A copy of the regulation is online: <http://energy.state.nv.us/energy-efficiency/programs/energy-related-codes.html>. The office is required to adopt the latest version of the IECC every third year and is developing a plan to ensure 90 percent compliance by 2017.

Approximately 80 trainings on IECC standards have been conducted statewide, and the office is seeking additional funding to provide future trainings for all stakeholders affected by the new code.

RENEWABLE ENERGY TAX ABATEMENTS

Project Manager: Suzanne Martins

The Renewable Energy Tax Abatement program administers Nevada's renewable energy tax abatements, which came under the Energy Office's jurisdiction in July 2011. The program awards partial sales and use tax and partial property-tax abatements to eligible renewable energy producers. The Energy Office reviews the abatement applications, conducts public hearings to determine eligibility, and reviews annual compliance audits after abatements have been granted.

★ RESULTS

Regulations for the program were adopted in 2010. The state has approved 12 tax abatement applications, which include large scale solar PV, solar thermal, biomass, geothermal, and wind projects throughout the state. A list of projects is available online: <http://www.energy.state.nv.us/energy-efficiency/reap.html>.



GOVERNOR BRIAN SANDOVAL: State-issued renewable energy abatements helped make possible Enel Green Power's solar-geothermal project outside of Fallon, the world's first hybrid project of its kind.



New HVAC system at Truckee Meadows Community College.

COMMERCIAL RETROFIT GRANT

Project Manager: Sue Stephens

The Energy Office received a \$746,048 Department of Energy grant in December 2011 to analyze and enact methods to significantly improve Nevada's regulatory and policy environment for implementing energy efficiency projects in existing commercial buildings. The goal of the program is to shift the way that commercial retrofit projects are evaluated, from both an energy-savings and financial return perspective, and to create a plan for implementation that will increase the number of retrofit projects accomplished each year. Approaches and best practices of other utilities, states, and nations will be examined and recommendations will be developed and designed around the unique circumstances of the state. A plan for formal adoption of proposed revised and new policies will be presented in October 2013.

★ RESULTS

In support of the grant, NV Energy pledged in-kind contributions estimated to reach a value of \$250,000 over a two-year period. In February 2012, a sub-grant for \$330,363 was awarded to the University of Nevada, Reno, to research current economic development and energy policies, address specific barriers to commercial building energy efficiency retrofits, and conduct financial analyses. Different scenarios will be explored and a plan of action will be recommended for implementation. Key partners, including the Governor's Office of Economic Development, and major stakeholders met in June 2012, to discuss the program's objectives and develop a process for accomplishing its goals.

NEW ENERGY INDUSTRY TASK FORCE

Project Manager: Stacey Crowley

Governor Brian Sandoval issued an executive order in November 2011 charging the New Energy Industry Task Force with facilitating the timely development of transmission facilities and renewable energy resources in the state. Task Force work will include the development of the "business case" for renewable energy in the state and transmission planning recommendations to the Governor by the fall of 2012. The order states that coordination of transmission planning and development is critical to the success of the renewable energy industry in Nevada. The Energy Office Director serves as the chair of the Task Force, which also includes members of industry, utility, transmission development, environmental interests, as well as representation from the PUCN, Nevada System of Higher Education, the Bureau of Land Management, Consumer Protection, and other valuable stakeholders.

STATE ENERGY PROGRAM FORMULA GRANT

Project Manager: Pete Konesky

The State Energy Program formula grant is an annual source of federal funds from the Department of Energy (DOE). The program's goal is to improve the reliability and maintain the affordability of energy supplies available to Nevada's residents and businesses consistent with the need to protect the state's environment and human health. For the 2011 program year, \$349,000 was received from DOE, plus a match of \$69,800 from state funds.

In April 2012, the State Energy Program formula grant for program year 2012 was submitted to the DOE, and the office is expected to receive \$247,000. New funding requests include money for monitoring the office's revolving loan program (page 18), managing the Building Codes program, and funding for the close-out audit for the SEP ARRA grant.

The following projects have been completed or are ongoing under the State Energy Program grant.

RENEWABLE ENERGY, CONSERVATION AND USE

This program promotes the use of renewable energy and energy conservation, reviews energy trends, coordinates with federal and state agencies to reduce energy costs and works to improve Nevada's economy.

★ RESULTS

- A sub-grant of \$35,000 was given in March 2012 to the High Desert Montessori Public Charter School in Reno for the installation of solar hot water and PV systems. The match was more than \$400,000.
- A sub-grant of \$15,000 was given to the Eastern Nevada Landscape Coalition in March 2012 for bio-charcoal made from pinyon-juniper. Pinyon-juniper has encroached onto productive rangelands and can be a severe fire hazard. Charcoal made from pinyon-juniper is being used as a soil amendment, which enhances wildlife habitat and rejuvenates soils at mine sites. The bio-char may also be used for energy-crop production in the future. Additional funding has been provided to the Nevada Division of Forestry for the project.



The kiln that converts pinyon juniper into bio-char, a charcoal used as a soil amendment. Image courtesy of Chris Lynch, University of Nevada Small Business Development Center.

TRANSPORTATION FUEL

There are two laws that affect transportation fuel in the state. NRS 486A covers state and local government fleets in Clark and Washoe counties and requires 90 percent of new vehicle purchases to use an alternative fuel. The federal law defined in the Energy Policy Act requires EPA non-attainment areas for ozone (Clark County) to comply with the federal definition of alternative fuels and 75 percent of new vehicle purchases must utilize alternative fuel.

Nevada's transportation fuel efforts are designed to decrease Nevada's dependence on imported fossil fuels in order to improve urban air quality and decrease risk to the state economy in the event of pipeline supply disruptions. Additional objectives include promoting the increased availability and use of alternative fuels and increasing market demand for alternative transportation fuels that can be produced domestically or within Nevada.

★ RESULTS

In 2012, the Energy Office supported the National Governor's Association memorandum of understanding for the use of natural gas as a transportation fuel.

Numerous activities concerning transportation fuel are underway:

- Regular communication is occurring with surrounding states regarding fuel issues.
- An Electric Vehicle Infrastructure Readiness Task Force has been created with more than 100 stakeholders dedicated to supporting electric vehicle charging station infrastructure.
- Two Clean Cities Coalitions in Nevada are working to reduce consumption of fossil fuels for transportation and to facilitate alternative fuel infrastructure.
- The office gave a sub-grant to the Nevada Venture Accelerator to perform NEC 625 code training in Reno and Las Vegas in May 2012. The infrastructure needs for electric vehicles require new code requirements, and these trainings helped educate on the requirements for electric vehicles and charging stations. More than 50 people attended the training.

STATEWIDE RENEWABLE ENERGY PROJECT

Program Manager: Robert Nellis

The Statewide Renewable Energy Project was created to develop renewable energy systems on multiple sites in order to offset the amount state agencies pay for electrical power. Nevada solicited interest from private-investors to design, build, own, and operate solar photovoltaic projects through long-term power purchase agreements on up to 55 sites for 10 state agencies and the City of Las Vegas.

★ RESULTS

An independent evaluation committee from state agencies, the Nevada System of Higher Education, and the City of Las Vegas selected the vendor, GA-SNC So-

lar, LLC, after independently ranking eight proposals. State Purchasing issued a Letter of Award to GA-SNC Solar, LLC, and an agreement was approved by the state Board of Examiners March 1, 2011. GA-SNC met with state agencies and analyzed utility data to determine the feasibility of constructing solar facilities on the sites. GA-SNC determined that some projects were not financially viable with their established business model and those projects were subsequently removed from the list. The remaining projects were determined to have the potential to be viable but would need NV Energy's RenewableGenerations rebates or other financing mechanisms to be feasible. The remaining projects are on hold pending a financial proforma that is attractive to the developer and are revenue neutral for the state agency.

ENERGY ASSURANCE PLAN

Project Manager: Pete Konesky

The Energy Office was granted \$438,573 including administrative costs to update and implement the state's *Energy Assurance Plan*, which outlines the structure for monitoring and overseeing energy demand and supply in case of a disruption or an emergency. The plan provides the ability to intervene, when directed, to ensure a reliable supply of electricity, natural gas, motor vehicle fuel, propane, and other heating products are available to the citizens of Nevada. A detailed work plan includes developing new energy-use and disruption-tracking systems, incorporating "smart grid" technology, as well as outfitting a room capable of handling the personnel required to respond to any energy contingency that may develop through implementing the plan.

★ RESULTS

An energy contingency center was configured with visual and connective technologies to enhance the Energy Office's effectiveness in responding to energy contingencies. The office prepared a process for tracking the duration, response, restoration, and recovery time of energy supply disruption events and notified all Nevada energy-supplying entities of the energy disruption tracking process and requested their participation. The office received comments from the Department of Energy on the draft *Energy Assurance Plan* noting that the initial plan sufficiently documented guidelines for responding to an energy emergency.

An Intrastate Energy Assurance Exercise was successfully conducted in July 2011. The University of Nevada, Reno Seismology Laboratory provided a customized earthquake simulation program for the exercise. A California-Nevada joint exercise, held at South Lake Tahoe in 2011, dealt with a major fuel outage. Both Nevada and California received excellent feedback relating to their EA and fuel rationing plans.

The Energy Office and Nevada Division of Emergency Management represented Nevada at the DOE's Interstate Western Regional EA exercise in Phoenix in November 2011. The focus of the exercise was to make states aware of interdependencies that may exist if an adjoining state has an emergency event.

The updated *Energy Assurance Plan* will be finalized by August of 2012.

■ Completed Projects

The Energy Office managed numerous grants funded through the American Recovery and Reinvestment Act of 2009. The primary goal of these projects was to increase energy efficiency in Nevada. Most grantees reported back significant savings in maintenance costs, improved energy tracking, significant energy savings, and enhanced renewable energy opportunities. This section highlights the ARRA projects that have been successfully completed by the office.



A Nevada school bus that received a retrofit for clean diesel.

NEVADA SCHOOL BUSES

Project Manager: Pete Konesky

A \$496,000 EPA grant was received by the Energy Office in 2006. When the Nevada Division of Environmental Protection (NDEP) also received a grant from the EPA for clean-diesel buses, an agreement was made between NDEP and the Energy Office for the installation of emission control systems onto school buses.

★ RESULTS

The combined funding covered upgrades on most school buses in Nevada. Remaining funds were used to purchase coolant heaters for 109 vehicles that can warm the buses prior to starting engines, thus reducing engine idle time and engine maintenance. This project was completed December 31, 2011.



LED street light in Carson City.

ENERGY EFFICIENT STREET LIGHTING AND TRAFFIC SIGNALS

Project Manager: Pete Konesky

More than \$1.5 million in ARRA funding was budgeted to make street lighting and traffic signals more energy efficient. This project allowed regional transportation commissions and various Nevada communities to work together in replacing street lights and traffic signals with more efficient LED lighting. The lighting boosted energy savings and enhanced safety at intersections by increasing visibility.

★ RESULTS

Allocations were \$249,789 for Carson City, \$326,979 for Clark County, \$230,311 for Henderson, \$394,800 for Las Vegas, \$358,600 for North Las Vegas, and \$10,600 for Washoe County RTC. All projects are complete. The Energy Office received permission from the DOE to transfer surplus funding from the Alternative Fuel Infrastructure to Street Lights for additional lighting projects in Carson City and Clark County. About 2 million kWh in energy savings has been estimated to

date. Grant recipients report that the new lights have a 5- to 10-times greater lifespan, which has added additional savings because of reduced maintenance costs. The table below shows the number of lights and signals installed by recipient as well as the annual energy savings achieved.

Project Recipient	Technology	Funds Allocated	Annual Energy Savings (kWh)	Lights
Carson City	LED Lighting Retrofit	\$249,789	142,224	323
Clark County	LED Lighting Retrofit	\$326,979	798,118	686
Henderson	LED Lighting Retrofit	\$230,311	798,118	686
Las Vegas	LED Lighting Retrofit	\$394,800	572,000	987
North Las Vegas	LED Lighting Retrofit	\$358,600	262,500	550
Washoe County RTC	LED Lighting Retrofit	\$10,600	6,030	28
Totals		\$1,571,079	2,578,990	

Grant recipients report that the new lights have a 5- to 10-times greater lifespan, which has added additional savings because of reduced maintenance costs.

ALTERNATIVE FUELS FOR STATE VEHICLES

Project Manager: Pete Konesky

More than \$150,000 of ARRA funding was budgeted to replace a fuel tank at the Nevada State Motor Pool in Las Vegas with a dual-capacity tank that allows ethanol (i.e., E85) to be stored and dispensed into flexible-fuel vehicles in the state inventory. This allowed additional flexible-fueled vehicles to be ordered as a future strategy aimed at reducing petroleum use and meeting the energy policy act requiring 75 percent of newly purchased vehicles to use alternative fuels.

★ RESULTS

The system was completed in November 2010, inspected, and is in operation. Funding left over from this project was used for additional street lights and traffic signals for Carson City (\$6,000) and Washoe County (\$8,840). Remaining funds (\$30,580) were used in Carson City for transportation systems, such as additional street lighting.



The new ethanol (E85) fuel tank now being used for state vehicles in Las Vegas.

STATE BUILDING ENERGY UPGRADES

Project Manager: Robert Nellis

More than \$7 million was budgeted as a part of an ARRA grant to provide energy efficiency and renewable energy upgrades to existing state-owned buildings. Projects included the following:

- Lighting replacements to more efficient fluorescent lights and LED lights
- New lighting control systems
- Energy saving window treatments
- HVAC system upgrades to more efficient systems
- Photovoltaic installations at four locations
- Related projects designed to save the state significant energy costs.

All projects strived to meet ARRA SEP goals of annual energy savings of at least 10 MBtus saved for each \$1,000 spent. Based on information available from the State Public Works Division and the monitoring performed by the state's consultant, CLEAResult, these savings will be achieved.

★ RESULTS

One hundred and seventy two (172) state buildings were completed by April 2012, including solar installations at the DMV in Henderson, the Legislative Council Bureau parking garage in Carson City, the Nevada State Library and Archives in Carson City, and the Grant Sawyer Building in Las Vegas. On the average, most projects are projected to have paid for themselves within nine years. The estimated energy savings is 73.2 MBtus or 6,430,519 kWh.

The results of this project are detailed in the CLEAResult report available online: <http://energy.nv.gov/energy-efficiency/programs/state-buildings.html>.

New, energy efficient lighting in the Department of Education's boardroom in Carson City.



ENERGY IMPROVEMENTS AT NEVADA'S SCHOOLS

Project Manager: Kevin Johnson

More than \$9 million under ARRA was budgeted to provide \$441,176 to each of Nevada's 17 school districts. The program aimed to make Nevada schools more energy efficient by upgrading lighting and HVAC systems, as well as adding window treatments, lighting control systems, and renewable energy installations. The larger per-capita counties, Washoe and Clark, received an additional \$1 million each. Projects strived to meet ARRA's annual energy savings of at least 10 MBtu for each \$1,000 of investment.

★ RESULTS

Contracts were awarded and projects are finished in all 16 participating counties. (Mineral County rejected its funding.) A free Energy Star Portfolio benchmark tool on energy savings, reporting before and after project installations, is being sponsored by NV Energy for districts that fall within NV Energy's service area. Visit <http://energy.state.nv.us/documents/recovery/EnergyEfficientSchoolsProjectDescriptionandAwardees.pdf> for project descriptions and awardees. The project created or retained 75 jobs. Energy savings are detailed in the table below.

ENERGY SAVINGS BY COUNTY

Project Recipient	Technology	Funds Allocated	Estimated Annual Energy Savings (kWh)
Carson City	Lighting Retrofit	\$441,176	1,364,311
Churchill	Solar	\$441,176	140,000
Clark	Solar	\$1,441,176	700,000
Douglas	Boiler Replacement	\$441,176	553,470
Elko	Lighting Retrofit	\$441,176	1,461,285
Esmeralda	Solar	\$441,176	146,000
Eureka	HVAC Upgrade	\$441,176	179,000
Humboldt	HVAC, Boiler Replacement	\$441,176	260,700
Lander	Solar	\$441,176	200,000
Lincoln	Lighting Retrofit	\$441,176	162,284
Lyon	Lighting Retrofit	\$441,176	663,000
Nye	Lighting Retrofit	\$441,176	1,300,356
Pershing	Solar	\$441,176	280,000
Storey	Solar	\$441,176	280,000
Washoe	Solar	\$1,441,176	560,000
White Pine	Lighting Retrofit, Insulation & Window Upgrades	\$441,176	313,042
TOTALS		\$9,500,000	8,563,448 kWh





BUSINESS DEVELOPMENT THROUGH RENEWABLE ENERGY

This project was jointly administered by the Energy Office and the Governor’s Office of Economic Development (GOED). To help unify the statewide effort to rebuild and diversify Nevada’s economy, the Energy Office awarded the Nevada Institute for Renewable Energy Commercialization (NIREC) a contract to support the statewide growth of renewable energy industries. Bringing together Nevada’s future and existing renewable energy suppliers, NIREC and the GOED partnered to develop an online, printable directory and database of Nevada’s clean and renewable energy suppliers.

★ RESULTS

NIREC identified almost 500 companies located in Nevada – or seeking to do business in the state – that sell renewable energy products or provide related services. The companies were placed in the *Nevada Clean Energy Supplier Directory*, and the second edition is available online: <http://nirec.org/directory.html>. There is also a searchable database on the NIREC website. In addition to the directory, a guide of available training programs and related information, such as grants, events, and projects, are also posted on the NIREC website: www.nirec.org. GOED provided additional funding to continue the directory until July 2013. A new format will give companies the ability to add and edit their own contact information.

NIREC also produced two white papers for the office that examined the feasibility of rare earth elements and lithium production in Nevada. The documents are available at energy.nv.gov.

Nevada’s renewable energy suppliers and service providers are easily found online at <http://nirec.org/directory.html>.



WIND TURBINE in Washoe Valley, Nev.

RENEWABLE ENERGY EXPORT ENGINEERING FEASIBILITY STUDY

Project Manager: Stacey Crowley

More than \$1.3 million under ARRA was budgeted to perform feasibility studies and ensure a strategically planned development of energy sources in Nevada. The State allocated this money to evaluate the state's transmission infrastructure and develop viable projects for high-voltage transmission lines to benefit renewable energy development and exporting energy out of Nevada. Slightly more than half (i.e., \$1,588,948) of the original \$3 million was transferred to the Revolving Loan Program (see page 18).

★ RESULTS

The Energy Office signed a contract with the nonprofit Nevada Energy Assistance Corporation (NEAC) for electrical transmission engineering and an extensive feasibility study. A final report of the Transmission Initiative Routing Study was presented to and approved by the NEAC Board of Directors in April 2012. The report details projects that capture renewable energy generation from established zones to major substations that could deliver the energy to California utilities. These transmission routes would create jobs throughout Nevada and, once completed, would provide a key piece of infrastructure facilitating the export of new sources of renewable energy as well as greater energy reliability and diversity for Nevada and California. The report is available online: <http://energy.nv.gov/resources-forms/neac.html>.

Work is continuing on the topics of this report through the Energy Office's New Energy Industry Task Force (see page 22).

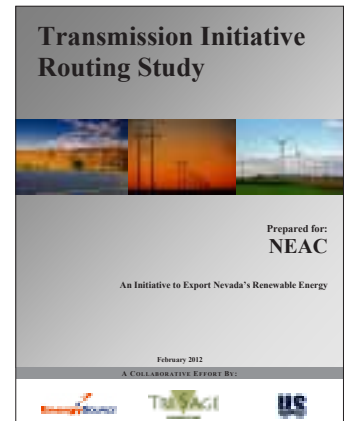
ENERGY EFFICIENT APPLIANCE REBATES

Project Manager: Pete Konesky

The Energy Office received \$2,495,000 (including administrative costs) to be used for a State Energy Efficient Appliance Rebate program. This program allowed Nevada residents to receive rebates when they purchased energy efficient appliances. The rebates were available to replace used appliances with Energy Star appliances. Rebate amounts were: refrigerator (\$200), freezer (\$150), washing machine (\$150), and dishwasher (\$100). Purchases had to be from Nevada retailers.

★ RESULTS

15,287 rebates were issued, which equated to \$2,386,200 in rebates made available to Nevadans. Savings estimated to date include 1.3 million kWh saved, more than 40 million gallons of water and 784 tonnes (metric tons) of carbon dioxide kept from the atmosphere.





Energy efficient street light in Winnemucca.



Solar panel in Carlin.



Solar array in Ely.

STATEWIDE ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANTS

Project Manager: Kevin Johnson

The Energy Office was awarded a \$9,593,500 grant to assist cities and counties in implementing a variety of energy efficiency upgrades and renewable energy opportunities. The Energy Office immediately sent letters to all included cities and counties, which subsequently submitted projects for approval. The Energy Office worked with the Department of Energy to gain project approval, lift funding restrictions, and receive approval for advanced funding to the sub-grantees. The projects ends in September 2012.

CITIES AND COUNTIES

More than \$6 million was allocated to Nevada cities and counties for energy efficiency and conservation projects, as well as renewable energy systems. The 10 largest counties and 10 largest cities in Nevada by population were awarded funding directly by the DOE, independent from any Energy Office grants.

★ RESULTS

After receiving confirmation that Lander County did not want to participate in the use of ARRA grant funds, the Energy Office allocated a portion of the funds originally designated for Lander County to Lincoln, Mineral, Storey, and Eureka counties. Through successful gains in the efficient administration of this program, additional amounts that were formerly dedicated to salary and administrative costs were reallocated directly to projects. West Wendover was awarded additional money to construct a second 50-kW solar array on its city hall. Caliente, Fallon, and Winnemucca were awarded additional funds as reimbursements for project expenses the cities incurred out-of-pocket.

Besides the counties listed above, Esmeralda County received funds to construct two solar panel arrays to help offset the county's electrical expenses: a 10-kW array to operate a water-well at Silver Peak, and another 10-kW array on the Goldfield County courthouse.

Grant funds were also distributed to the cities of Carlin, Ely, Lovelock, Wells, and Yerington. Ely installed a solar-panel array next to its firehouse, offsetting up to 40 percent of its electricity consumption, as well as solar thermal panels on the firehouse roof, which offset up to 60 percent of its propane usage use for interior heating and hot water, both of which are critical for the operation of the firehouse, particularly in light of the cold local climate. The solar power array is projected to save 36,680 kWh each year, and the solar thermal panels are projected to save 1,780 gallons of propane, which is roughly equivalent to 47,700 kWh each year.

All five counties and nine cities have completed their projects, with the exception of Winnemucca and West Wendover, which should be 100 percent complete by mid-July 2012.

EMERGENCY VEHICLE IDLE REDUCTION

More than \$700,000 was allocated for 125 battery devices that allow emergency personnel to shut off engines and provide up to four hours of power for operation of computers, radios, light bars, and other vehicle equipment. Requests for vehicle monitoring and heating systems to be incorporated into the system reduced the number of devices that were ordered, resulting in a more operator-friendly system that is more apt to be used for longer periods of time. The reporting system will have concrete data for energy savings and greenhouse gas reductions.

★ RESULTS

Sub-grants were issued to the Washoe County Sheriff's Office, Henderson Police Department, Las Vegas Metro Police Department, and the Nevada Highway Patrol for \$178,200 each. The City of Henderson accepted \$50,000 of the \$178,200 allotted to them. The remaining \$128,200 was granted to the North Las Vegas Police Department. Las Vegas Metro (41 units), Henderson Police Department (12 units), and the Washoe County Sheriff's Office (38 units) installed the battery units.

The remaining two agencies installed the majority (28) of the units they have ordered. The vendor of the battery units offered 28 smaller units, which can be used in smaller patrol vehicles. They also offered a unit with remote uploading technology, allowing data to be sent wirelessly to a data-collection point, which increased the amount of time each vehicle can remain on duty. The North Las Vegas Police Department and the Washoe County Sheriff's Office purchased units with this feature. Early data collection shows significant fuel savings and carbon reductions on vehicles using energy efficient units. The Nevada Highway Patrol in Elko decided to discontinue the program because the batteries did not fit their specific needs. The batteries were delivered to the Nevada Division of State Parks for use in their vehicles

STATE BUILDINGS: MONITORING NATURAL GAS AND ELECTRICITY USE

More than \$200,000 was allocated to pay for monitoring the energy consumption in state buildings. LPB Energy Management Services monitored all state-owned buildings, established baselines, reviewed utility bills for errors, and negotiated rebates on behalf of the Energy Office.

★ RESULTS

LPB initiated the data-capture process and NV Energy and Southwest Gas reported that savings to the state had been realized. In some cases, the incorrect utility rate schedule was assessed and errors were corrected.



Emergency vehicles around the state have been outfitted with battery devices that increase fuel savings and reduce carbon emissions.



Old Fallon street lights.



New Fallon street light.

TRAFFIC SIGNAL AND STREET LIGHTING

This project provided \$1,477,457 in funding, plus administrative costs, to install energy-efficient street lighting and traffic and pedestrian signals and signs in Nevada cities and counties.

★ RESULTS

All projects were approved and funds were sent to Nevada cities and counties. All projects are complete. The Regional Transportation Commission of Washoe County completed LED streetlight upgrades and pedestrian crosswalk signals within county-controlled intersections in the greater Reno-Sparks area. Ely, Fallon, Douglas County, and Lyon County installed various combinations of LED streetlights, traffic signals, and LED-illuminated street signs at major intersections. The table below shows the light installations by jurisdiction.

City/County	Streetlights	Traffic signals/signs
Douglas Co.	30 streetlights	8 illuminated (edge-lit) street signs
Ely	35 streetlights	41 traffic signals
Fallon	640 streetlights	
Lyon Co.	71 streetlights	2 traffic signals
Washoe RTC	1156 streetlights	891 pedestrian signals

Source: Nevada State Office of Energy

The installations completed by the RTC lower the power consumption for each streetlight from 250W to 140W, and for each pedestrian signal, from 26W to 6W. It is estimated this will save the RTC \$114,000 a year. The installations also save in maintenance costs, since the average life of these bulbs is three times or more that of traditional bulbs, reducing the need for change-outs.

The new LED streetlights in Ely are estimated to use 90 percent less power than the former incandescent bulbs, which reduced electricity usage to only one-tenth of the previous amount. The new LED streetlights are estimated to use 30 percent less power than the previous metal-halide bulbs. These changes have already had a noticeable impact on the city's operating expenses.

Douglas County has projected, based on four months of monitoring its new streetlights/street signs, that energy usage is being reduced at the rate of 1,513 kWh per year because of the new installations.

THE INDUSTRIES OF THE FUTURE GRANT

Project Manager: Pete Konesky

This grant was extended at the last minute by the Department of Energy so the funds could be quickly spent. A sub-grant of \$9,500 was given to the Nevada System of Higher Education's Nevada Industry Excellence program, which "revitalizes Nevada's manufacturing, construction and mining community by addressing individual needs and providing direct support and referral services." The grant provided Six Sigma Green Belt training for six Barrick Gold Corp. employees during the week of April 9-13, 2012. Barrick matched the grant with \$27,280.

GEOHERMAL OUTREACH GRANT

Project Manager: Pete Konesky

This grant was extended by DOE to expend the remaining grant funds (\$19,000) for student tuition to attend the June 2012 Geothermal Academy at the University of Nevada, Reno.



Students from the 2011 National Geothermal Academy explore steaming fissures on the Ormat Steamboat Springs property just south of Reno. This sinter terrace is characteristic of past geothermal geyser activity. Photo by Wendy Calvin, University of Nevada, Reno.



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