NEVADA



SAVING MONEY, CREATING JOBS AND DRIVING ECONOMIC GROWTH THROUGH ENERGY EFFICIENCY

Scaling up

efficiency to help meet

Nevada can save businesses and consumers billions by investing in energy efficiency, the cheapest and easiest way to help meet the state's energy needs.

Cutting energy waste reduces the need to generate electricity from expensive, polluting power Nevada's Clean Power Plan plants. There's now a policy target could save \$3.4 billion and the Environmental Protection Agency's Clean Power Plan — that gives Nevada a reason to redouble its efficiency efforts, creating jobs, driving economic growth, and saving businesses and consumers billions on their electricity bills.

Under the Clean Power Plan, Nevada must reduce carbon emissions from existing power plants by about 13 percent by 2030, compared to 2012 emissions from electricity production.¹ One of the quickest, most costeffective ways to do that is by making Nevada's offices, homes, schools, hotels, and other buildings, as well as the state's electric distribution system, more efficient.

Scaling up efficiency to help meet Nevada's Clean Power Plan target could save \$3.4 billion — money that can be reinvested into the state's economy — and support the creation of more than 4,600 jobs over the next 10 years.²

Maximizing energy efficiency will be a big step toward addressing the carbon pollution that fuels climate change. In 2012, Nevada taxpayers paid an estimated \$840 million in federal taxes to help clean up climaterelated weather events.3 In summer of 2015, nearly

95 percent of the state was facing conditions of moderate drought to exceptional drought - conditions that will

> worsen with climate change and affect the state's agriculture, ecosystems, and urban centers.4

> > Smarter use of energy reduces the demand for electricity generated by from existing power plants - and already well-positioned to meet the

mainly with efficiency and renewable energy, the state would meet proposed interim and final Clean Power Plan mass-based emission targets.5

therefore, reduces carbon emissions support the creation of more than that drive climate change. Nevada is **4,600 jobs** over the requirements of the Clean Power Plan: next decade. If Nevada continues robust utility energy efficiency programs and meets new demand

Nevada can ramp up efficiency efforts to help meet the Clean Power Plan by:

- > Increasing energy-savings goals for investor-owned utilities and establishing energy-savings goals for electric cooperatives and municipal utilities;
- > Ensuring utility investments in energy efficiency increase;
- > Updating the statewide minimum building energy code;
- > Ensuring that all utilities are not financially penalized when they ramp up investments in energy efficiency programs for their customers;
- > Implementing performance-based incentives for investor-owned utilities to help motivate effective efficiency programs.



Efficiency: The Cheapest Way

As shown in Figure 1, efficiency is the most cost-effective way to meet energy demand and reduce customers' electricity bills. Figure 1 compares total lifetime costs, including first investment costs and lifetime fuel costs.

Gas Combined Cycle Range Coal Nuclear IGCC Fuel Cell Gas Peaking **Energy Efficiency** Least-Cost Resource Wind **Alternative Energy** Solar PV (Utility) Solar Thermal Solar PV (Rooftop Residential) 100 300 150 200 250 Levelized Cost of Electricity (\$/MWH)

Figure 1. Efficiency is the Cheapest Way to Meet Nevada's Energy Needs⁶

Source: Lazard Estimates 2014

Energy efficiency means more jobs, less carbon for Nevada.

Investments in efficiency create jobs in the construction industry for workers who upgrade existing buildings. Energy efficiency also creates jobs for HVAC and efficient lighting system designers, manufacturers, and installers.

In addition to this direct job creation, efficiency creates jobs indirectly. When Nevadans save money on their electric bills, customers spend those savings in the local economy.



Nevada's Energy Efficiency Progress

Nevada's utility efficiency programs — which, for example, reduce the cost of LED lighting in homes and businesses, help customers tune up AC systems, and remove old inefficient refrigerators — help customers make upgrades that cut energy waste. Since 2007, NV Energy has cumulatively saved as much energy as nearly 7 percent of its electricity sales, 7 or enough energy to power more than 180,000 Nevada homes for a year.8 These efficiency savings also avoided more than 1.4 million metric tons of carbon pollution, equivalent to the annual emissions of nearly 300,000 cars.9 However, Nevada is ranked only 26th among states for its utility programs¹⁰ — demonstrating that the state's utilities have room for improvement and could save hundreds of millions of dollars for households and businesses by increasing energy efficiency investments.

Investor-owned Utilities

Nevada has two investor-owned electric utilities — Sierra Pacific Power Company and Nevada Power Company, which are both subsidiaries of NV Energy.

NV Energy serves 1.2 million customers and nearly 90 percent of the state's electricity demand. Since 2007,

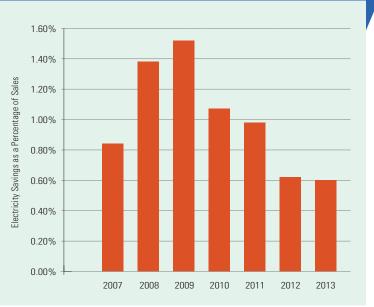
NV Energy's investments in energy efficiency have saved customers more than \$500 million on their energy bills.

12

A common way to benchmark utility energy efficiency achievements is to examine annual energy savings as a percent of electricity sales: An energy efficiency effort that saves customers an amount equal to 1 percent of the utility's energy sales for that year is considered fair, while 2 percent is excellent. As shown in Figure 2, NV Energy significantly ramped up its energy efficiency savings from 2007 through 2009, reaching an impressive 1.5 percent of sales. 13 However, NV Energy scaled back

its investments during the recession, when the Public Utilities Commission of Nevada approved cuts to the efficiency portfolio. By increasing investments and savings again, NV Energy can help lower customer bills and reduce carbon pollution.

Figure 2. NV Energy's Annual Electricity Savings as a Percent of Sales (2007-2013)



Building Energy Codes

Building energy codes specify requirements or minimum efficiency levels for all types of building elements, including walls, windows, lighting, and water heaters. Codes are good policy: it is much cheaper to make a building efficient at the time of construction than to go back later. Nevada has a statewide energy code for new residential and commercial buildings based on the 2012 International Energy Conservation Code (IECC).¹⁴



Recommendations to Ramp up Nevada's Energy Efficiency Savings

Nevada has made significant progress in achieving efficiency savings, but much more can be done to help meet the Clean Power Plan targets and save customers money.

Establish energy-savings goals for all utilities

Although NV Energy serves most of the state's demand, Nevada also has eight electrical cooperatives, four municipal electric utilities, and three general improvement districts that serve approximately 55,000 customers.15 All utilities must do their part to reduce carbon pollution, regardless of utility size. Every utility should be Nevada could save required to meet escalating annual more than 45,000 metric efficiency goals, ramping up to tons of carbon dioxide savings of 2 percent of sales each by 2025 by updating year over the next several years. building codes. Increasing investments in efficiency, for example by investing in Conservation Voltage Reduction in the distribution grid as well as new technologies such as LED lighting in all sectors (including streetlighting), can help utilities meet their escalating goals. All utilities should do their part to increase energy savings, save customers money, and help meet the Clean Power Plan emissions targets in the

Increase investments to reach higher levels of savings

most cost-effective manner.

To achieve higher levels of energy savings, Nevada's utilities must make energy efficiency a priority. Despite an expansion of investments in energy efficiency (and annual savings) from 2006 through 2009, the Public

Utilities Commission of Nevada (PUCN) approved cuts to NV Energy's investments in efficiency from 2010 through 2012. During this time, annual savings fell. Fortunately, in 2013 the PUCN approved higher investments and savings scaled up the following year. The PUCN and NV Energy must continue this trend of investing more in efficiency programs to help save more energy, while also lowering customers' bills and reducing pollution.

Advance building energy codes

Nevada has adopted the 2012 IECC for new commercial and residential buildings, and the state should now upgrade to the 2015 code, which includes the Home Energy Rating System Index option that offers flexibility to builders and deeper energy savings. 16 Nevada could save more than 45,000 metric tons of carbon dioxide by 2025 from upgrading to the 2015 IECC statewide. 17

Implement decoupling for all utilities to remove the disincentive for energy efficiency

Under traditional regulation, utility revenues are based on the amount of kilowatt-hours they sell. If they sell more than predicted when rates were set, they keep the excess profits. But they may not recover all of their approved fixed-costs if sales are lower than expected, which can create a disincentive to maximize the amount of savings that customers realize through energy efficiency.

"Decoupling" removes this disincentive by breaking the link between fixed-cost recovery and sales, and



ensures utilities recover no more and no less than their authorized fixed costs. Through periodic adjustments — as either bill surcharges or refunds — regulators ensure utilities recover all prudent expenses while protecting customers from paying too much for service. This removes utility risk in investing in energy efficiency as recovery of fixed costs is guaranteed.

Currently, NV Energy has a lost revenue recovery mechanism. We recommend regulators and boards replace this mechanism with decoupling for all of Nevada's electric utilities, ensuring that a statewide ramp up in efficiency investments will not affect the financial stability of the state's utilities.

Establish a performance-based incentive mechanism for good energy efficiency programs

In addition to implementing decoupling to ensure that utilities are not hurt financially from efficiency, regulators should also approve a performance-based financial incentive for effective energy efficiency programs. Utilities receive incentives for investments in power plants and wires, and should therefore also receive incentives for saving energy and lower customers' bills through energy efficiency. A performance-based incentive for energy efficiency would help level the playing field with other resources and sustain a long-term commitment to energy efficiency.

A typical performance-based incentive includes a reward for good performance and a penalty if goals are not met. This structure helps align the utility's financial responsibility to its stakeholders with the public interest of saving energy and lowering bills.

CONCLUSION

Nevada has shown leadership on energy efficiency in the past, but a renewed commitment to efficiency savings would save businesses and consumers money, create new jobs, and address the costly effects of climate change.

Energy efficiency can play an important role in helping Nevada design a cost-effective plan to reduce carbon emissions in response to EPA's Clean Power Plan (CPP) standards while lowering customers' bills, creating jobs, and supporting the local economy. Nevada should build on its current set of cost-effective energy efficiency policies and programs, and make energy efficiency the cornerstone of its CPP implementation plan.





Endnotes

¹ The percentage varies depending on whether Nevada opts to include new sources in its cap. For existing sources only, Nevada's mass-based goal is a 13 percent reduction from 2012 levels by 2030; if new sources are included, Nevada's mass-based goal is a 5 percent reduction from 2012 levels. EPA, "Clean Power Plan: State at a Glance — Nevada," last updated August 3, 2015, http://www.epa.gov/airquality/cpptoolbox/nevada.pdf.

- ² Howard Geller, SWEEP, "The \$20 Billion Bonanza: Best Practice Electric Utility Energy Efficiency Programs and their Benefits for the Southwest," October 2012, available at http://www.swenergy.org/Data/Sites/1/media/documents/publications/20BBonanza/SWEEP-NevadaFactSheet.pdf.
- Based on a total of \$96 billion from U.S. taxpayers spent on climate-related disasters in 2012 and the population of Nevada compared to the total U.S. population. Daniel Lashof and Andy Stevenson, NRDC, "Who Pays for Climate Change? U.S. Taxpayers Outspend Private Insurers Three-to-One to Cover Climate Disruption Costs," May 2013, http://www.nrdc.org/globalwarming/files/taxpayer-climate-costs-IP.pdf.
- The National Drought Mitigation Center, "U.S. Drought Monitor: Nevada," Week of July 21, 2015, http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?NV.
- ⁵ Based on analysis from the MJ Bradley Clean Power Plan Compliance Tool Version 2.0, August 2015.
- ⁶ Lazard, "Lazard's Levelized Cost of Energy Analysis Version 8.0," September 2014, http://www.lazard.com/media/1777/levelized_cost_of_energy_-_version_80.pdf.
- NV Energy's energy efficiency savings from 2007 through 2013 totaled 2,040 GWh. NV Energy's electricity sales in 2013 were 29,336 GWh. Therefore, from 2007 through 2013, NV Energy cumulatively saved 6.95% of 2013 electricity sales. Source for efficiency savings: SWEEP, "A Brief History of Utility Energy Efficiency Programs in Nevada: Producing Benefits for Consumers and the Environment," January 2015, http://www.swenergy.org/Data/Sites/1/media/documents/programs/utilities/nv_dsm_factsheet_jan2015.pdf. Source for annual electric sales: EIA, Form 861, http://www.eia.gov/electricity/data/eia861/.
- Average electricity consumption for a Nevada home is 11,088 kWh per year: EIA, "2013 Average Monthly Bill Residential," Average monthly consumption for Nevada multiplied by 12 months per year, http://www.eia.gov/electricity/sales_revenue_price/pdf/table5_a.pdf. 2,040 GWh / 11,088 kWh/home/year = 183,983 homes.
- ⁹ EPA, "Greenhouse Gas Equivalencies Calculator," http://www.epa.gov/cleanenergy/energy-resources/calculator.html.
- ¹⁰ Scoring for utility and public benefits programs and policies. American Council for an Energy-Efficient Economy, "The 2014 State Energy Efficiency Scorecard," Table 8, p. 23, October 2014, http://aceee.org/state-policy/scorecard.
- 11 State of Nevada, Public Utilities Commission, "Electric: Regulatory Duties," http://puc.nv.gov/Utilities/Electric/
- ¹² SWEEP, "A Brief History of Utility Energy Efficiency Programs in Nevada: Producing Benefits for Consumers and the Environment," January 2015, http://www.swenergy.org/Data/Sites/1/media/documents/programs/utilities/nv_dsm_factsheet_jan2015.pdf.
- ¹³ Divided annual electricity savings (SWEEP) by annual electric sales (EIA, Form 861).
- ¹⁴ U.S. Department of Energy, "Building Energy Codes Program: Nevada," https://www.energycodes.gov/adoption/states/nevada
- ¹⁵ SWEEP, "Nevada Utility Energy Efficiency Programs," http://www.swenergy.org/programs/utilities/state/nevada.
- 16 Meg Waltner, "Efficiency Wins Big in Atlantic City, Homeowners Will Benefit," October 10, 2013, http://switchboard.nrdc.org/blogs/mwaltner/efficiency_wins_big_in_atlantic_city_homeowners_will_benefit.html
- ¹⁷ SWEEP analysis on building codes. Analysis showed estimated savings of 67 GWh by 2025 for upgrading from the 2012 IECC to 2015 IECC statewide. Savings would be even larger for jurisdictions that do not meet the 2012 IECC already. Avoided carbon emissions calculated in EPA's "Greenhouse Gas Equivalences Calculator."
- ¹⁸ Lisa Xue and Dylan Sullivan, "Southern California municipal utilities innovate with decoupling," April 11, 2014, http://switchboard.nrdc.org/blogs/dsullivan/southern_california_municipal.html.

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