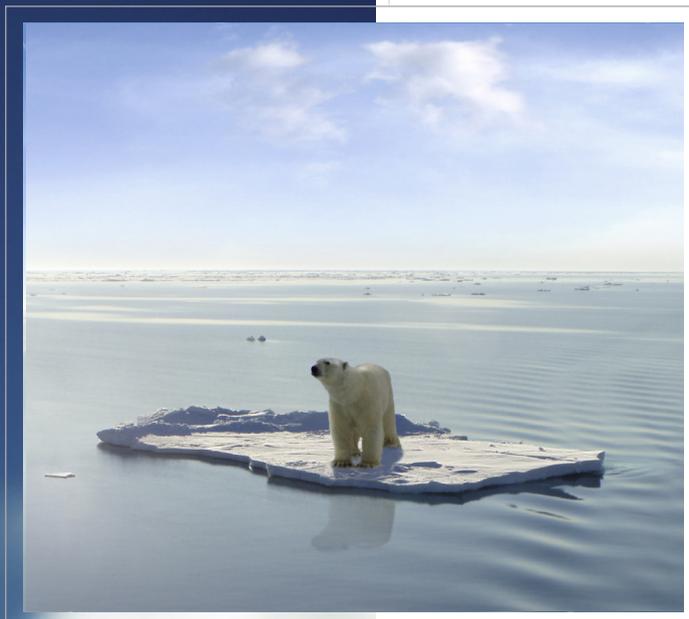


AN OVERVIEW OF NEVADA'S RENEWABLE ENERGY PORTFOLIO STANDARD

BY MICHAEL SAUNDERS, ESQ.



Talk of the nation's electricity providers relying more on renewable energy has never been greater. Across the country, many people are looking toward renewable energy to answer many of the country's current problems. Federal and state legislators see renewable energy development as holding the promise of creating jobs and spurring economic recovery – creating a so-called green economy.¹ Some proponents of renewable energy point to renewables as holding the promise of helping us fight the effects of global warming by reducing our country's reliance on environmentally deleterious fossil fuels such as coal. Others look to renewables as holding the promise of lessening our country's dependence on foreign oil and, in turn, protecting our national security interests.

All these promises beg the question: what is being done to promote renewable energy? Implementing a Renewable Portfolio Standard (RPS) is one essential way in which states have promoted renewable energy development.² Essentially, an RPS places an obligation upon an electricity provider, such as Nevada Power Company or Sierra Pacific Power Company³, to supply a minimum percentage of electricity from renewable energy sources. In 2008, three states (Ohio, South Dakota and Utah) adopted RPSs for the first

time and three others (Illinois, Michigan and Missouri) changed from voluntary to required standards.⁴ By the end of 2008, 35 states had RPSs or state mandates for new renewable energy capacity.⁵

Nevada's own RPS is found at NRS 704.7821. NRS 704.7821 (as amended by Senate Bill 358, which was signed into law on May 28, 2009) now provides, in part, that an electricity provider must generate, acquire or save electricity from renewable energy or energy efficiency measures in the following percentages: 9 percent in 2007-2008, 12 percent in 2009-2010, 15 percent in 2011-2012, 18 percent in 2013-2014, 20 percent in 2015-2019, 22 percent in 2020-2024, and 25 percent for 2025 and each calendar year thereafter. In setting a renewable energy goal of 25 percent by 2025, Nevada's RPS is among the most aggressive in the nation. Nevada law notably provides that a certain percentage of energy used to comply with the RPS must come from solar energy systems: At least 5 percent for each calendar year up to and including 2015, and 6 percent for 2016 and each calendar year thereafter.

Compliance with the RPS is measured in terms of Portfolio Energy Credits (PECs). Generally speaking, one PEC represents one kilowatt-hour of renewable energy generated or one kilowatt-hour of energy saved through an energy efficiency program.⁶ PEC multipliers apply under certain circumstances; for example, a 2.4 multiplier can be applied to each kilowatt-hour of energy generated by solar photovoltaic systems.⁷

CONTINUED ON PAGE 8 ►

AN OVERVIEW OF NEVADA'S RENEWABLE ENERGY PORTFOLIO STANDARD

CONTINUED FROM PAGE 7

In addition to complying with the RPS through generating or acquiring renewable energy, an electric provider may also comply with the RPS with energy savings achieved through energy efficiency measures, or what are known as Demand Side Management (DSM) measures. Of the total percentage amount that the electric provider is required to comply with under the RPS, not more than 25 percent of the amount may be based on energy efficiency measures, however.⁸ Additionally, at least 50 percent of that amount must be saved from energy efficiency measures installed at service locations of residential customers of the electric provider, unless a different percentage is approved by the Public Utilities Commission of Nevada ("commission").⁹

Annual RPS Report Requirement

Each year, electric providers are required to file reports providing information relating to the actions taken to comply with the RPS. The reports are to be filed with the commission on or before April 1 of each year, pursuant to NAC 704.8879. On March 30, 2009, Nevada Power Company and Sierra Pacific Power Company filed reports pursuant to NAC 704.8879 detailing the renewable efforts of the companies for compliance year 2008.¹⁰ In the report, Nevada Power and Sierra Pacific state that the companies respectively met the 9-percent goal mandated in the RPS.¹¹ Of particular interest is the fact that prior to last year neither Nevada Power Company nor Sierra Pacific had been able to comply with the 5 percent solar requirement of the RPS. For compliance year 2008, however,

Nevada Power Company and Sierra Pacific Power indicate in the report that the companies exceeded the 5-percent solar requirement.¹² On April 29, 2009, the commission found the companies in compliance with the RPS for 2008 in accordance with a commission staff recommendation.

The Sources of Renewable Energy

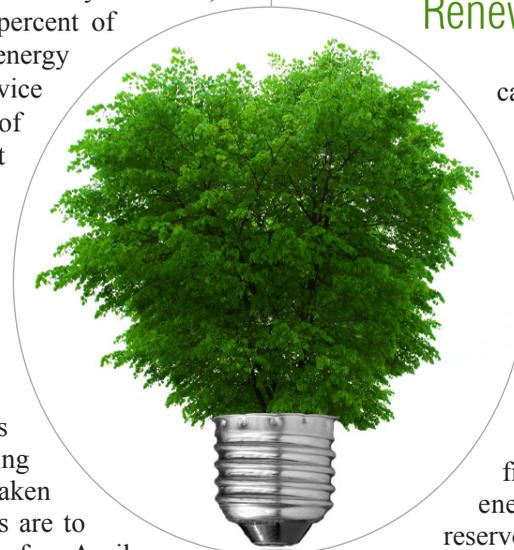
The sources of renewable energy that can be used to fulfill the RPS include: geothermal, solar, wind, waterpower and biomass.¹³ Nevada is fortunate in that it possesses abundant geothermal, solar and wind potential. The following is a brief review of each of these three renewable resources:

Geothermal

The most basic definition of geothermal energy is that it is heat energy from deep inside the earth. Geothermal energy is contained in underground reservoirs of steam and hot water; the hot water or steam is extracted from these geothermal reservoirs and is in turn used to drive turbines in order to produce electricity.¹⁴

Geothermal energy has the benefit of generally being the least expensive form of renewable energy.¹⁵ Another key benefit of geothermal energy, unlike solar or wind, is that it provides an electric utility with a base-load source of supply, meaning it is a continuous, always-on source of energy. Solar and wind resources are, by contrast, intermittent, meaning that the power is generally not available when the sun is not shining or the wind is not blowing.

In 2008, Nevada had 18 geothermal power plants, with a nameplate capacity of 333 MW; these plants combined in 2008 produced a gross output of 10,791 MWh.¹⁶ Additionally, Nevada has more developing geothermal projects than any other state.¹⁷ An example of this development can be seen with the opening on April 15, 2009 of a couple of innovative geothermal plants, named Stillwater and Saltwells, in Churchill County. According to Francesco Starace, president of Enel Green Power, the Stillwater and Salt Wells plants are currently the largest geothermal plants in the world and will generate 65 megawatts a year, which is enough to power 40,000 homes.¹⁸



Solar

Not only does Nevada have great geothermal potential, it also has great solar potential. Currently, two dominant solar technologies exist: solar photovoltaic (or PV) and concentrated solar power (CSP). Solar photovoltaic systems capture and convert sunlight into electricity, while concentrated solar systems produce electric power by using mirrors to convert the sun's energy into high-temperature steam which can then turn a turbine to generate electricity.¹⁹

Nevada is home to a couple of notable photovoltaic and concentrated solar plants. First, there is the 12-megawatt²⁰ Solar Star project at Nellis Air Force Base, which is the largest operating solar-photovoltaic project in the country. And, secondly, there is Nevada Solar One, which is a 64-megawatt, solar-thermal plant built by Acciona Solar Power, and operates in the Eldorado Valley near Boulder City. It is the third-largest concentrating solar power plant in the world and the first such plant built in 17 years.²¹

Wind

A wind-energy system converts the kinetic energy of the wind into electrical energy that can be put to practical use.²²

Development of wind generation in Nevada has lagged behind solar and geothermal, due in part to opposition from the military based on the notion that wind turbines interfere with radar.

NV Energy does have a significant wind generation project in the works. In May 2008, NV Energy signed a joint development agreement to invest in a 200-megawatt wind project titled China Mountain.²³ This project would encompass 30,000 acres of private, federal and state land on the Nevada-Idaho border, nine miles west of Jackpot, Nevada.²⁴ NV Energy states that 67 to 100 wind turbines will be located over a 14-mile site length and that the project could be in service as soon as 2011, although 2012 is more likely.²⁵

The Benefits of Renewable Energy

Many people are aware of the benefit to the environment of renewable energy relative to global climate change. There are, however, other benefits that are less well-known. For instance, renewable energy electrical generation has no fuel price volatility, such as exists with natural-gas-based electrical generation. To observe that natural gas suffers from fuel price volatility, one need only examine futures prices. Around July of 2008, natural gas

CONTINUED ON PAGE 10 ►

AN OVERVIEW OF NEVADA'S RENEWABLE ENERGY PORTFOLIO STANDARD

CONTINUED FROM PAGE 9

futures traded around \$13.694 per MMBtu.²⁶ Less than a year later, natural gas futures now trade around \$3.684 per MMBtu, a price which touches a six-and-a-half year low.²⁷

Another benefit of renewable resources relates to the issue of future carbon dioxide regulation and the price uncertainty caused by such regulation. It is currently expected that carbon dioxide regulation will take the form of a cap-and-trade program. Under a cap-and-trade program, the government would set an overall cap on emissions and would create permits authorizing industries to emit, up to the level of the cap, a set amount of greenhouse gases every year. Industries would then in turn be able to buy and sell those permits.

The problem with a cap-and-trade program is that at this point, it is uncertain how much such a program would add to electricity rates.²⁸ Congress is currently debating the price issues surrounding a possible cap-and-trade program. Widely divergent numbers ranging from zero to \$324 to \$3,100 have been bandied about regarding the annual household electric rate impact of such a program.²⁹ This regulatory price uncertainty has plagued plans for fossil-fuel based electricity projects, and in particular coal plants.³⁰ Some electric utilities have scrapped plans for coal plants or have at least indefinitely postponed plans for such plants based on this regulatory uncertainty.³¹ Of course, since renewable resources generally do not emit carbon dioxide, these resources have the benefit of not suffering from this same price uncertainty.

Another less well-known benefit of renewable sources of energy, such as wind and solar, is that the water needs for such resources are minimal when compared to coal and natural gas plants.³² Considering that the electric power industry accounts for nearly half of all water withdrawals in the U.S., this is a particularly key benefit, especially given the serious water issues facing Nevada.³³ Greater reliance by electric utilities on renewable energy will equate to more water that can be appropriated for other uses.

Impediments to Renewable Development

With so many benefits associated with renewable energy, Nevada policy-makers are eager to overcome several challenges that are impeding greater development of Nevada's abundant solar, geothermal and wind potential. One such challenge is that the load (or customer demand) to be served is often not ideally situated in close proximity to the resources. For example, much of the state's geothermal

resources are in the northern part of the state, while much of NV Energy's load is located in southern Nevada. Thus, one central impediment to renewable energy development in Nevada has been the lack of transmission capacity to carry renewable resources from northern Nevada to southern Nevada, and vice-versa.

NV Energy has proposed to construct a 235-mile 500 kV transmission line that will connect the northern Nevada and southern Nevada service territories of NV Energy. NV Energy has stated that the transmission line will enable it to add new renewable resources and diversify its natural-gas-heavy power portfolio³⁴ and thereby reduce fuel price volatility. It is expected that NV Energy will file for approval to construct the transmission line in what is known as an Integrated Resource Plan Application on or before July 1, 2009.³⁵ A rival transmission line to connect the northern and southern Nevada service territories is also being proposed by LS Power. Their line is referred to as "The Southwest Intertie Project," or SWIP. LS Power expects it to be completed in 2011. See www.swipos.com for more information.

To accelerate transmission construction, on March 5, 2009, Senator Harry Reid introduced the Clean Renewable Energy and Economic Development Act. The purpose of the legislation is to promote investment in new transmission and to streamline the process for constructing and permitting new transmission lines.³⁶

Lack of transmission capacity is not the only impediment to renewable energy development. The tightening of credit markets due to the global economic collapse, coupled with current low fossil fuel prices, has also made renewable energy development difficult.³⁷ The lack of credit to finance renewable energy projects is particularly problematic because of the high up-front capital cost required to construct or install such generation. For this reason, renewable sources of energy have traditionally been more expensive per megawatt compared to traditional electrical generation sources such as coal and natural gas. With the prospect of a cap-and-trade program or a tax on carbon dioxide emissions or future carbon capture and sequestration³⁸ technology adding onto electricity cost, the economics surrounding renewable energy may, however, become more enticing.

Ways to Support Renewable Energy in Nevada

There are ways that individual Nevadans can support renewable energy development. One such way is through a program offered by NV Energy called "RenewableGenerations." Essentially, this program created

pursuant to NRS Chapter 701B enables customers to offset the installation costs of renewable energy systems. The RenewableGenerations program consists of three separate sub-offerings: 1) SolarGenerations offers rebates to customers for installing photovoltaic systems on their homes, small businesses, public buildings or schools; 2) WindGenerations offers rebates to customers for installing wind-generating systems on their homes, small businesses, agricultural properties, public buildings or schools; and 3) HydroGenerations offers rebates to customers for installing hydro-generating systems on their agricultural property. For more information on these programs, visit: www.nvenergy.com/renewableenvironment/renewablegenerations.

Another way Nevadans can support renewable energy development is through NV Energy's GreenPower program. Under this program, customers are able to specify amounts to be added to their electric bills to support the construction of solar electric generation facilities and solar education in Nevada. NV Energy submits 100 percent of the money donated by customers to the Desert Research Institute, which manages the GreenPower program. NV Energy states that all money donated is tax-deductible as allowed under law and one's individual tax situation. For more information on the GreenPower program, visit: www.nvenergy.com/renewableenvironment/renewables/greenpower.

Conclusion

Without a doubt, this decade has been a tumultuous one in the area of energy. In the early part of the decade, Nevada faced the challenge of the Western Energy Crisis. Now in the latter part of the decade, Nevada faces the great challenge of becoming a leader in renewable energy development in order to fulfill the promises of renewable energy.

In the face of a struggling economy and an aging electrical grid, one wonders whether the promises of renewable energy will become a reality in Nevada. Certainly, Nevada has never been in a better leadership position to realize the promises of renewable energy. Nevada stands to greatly benefit from visionary energy policy leadership from not only President Obama, but also Senator Harry Reid, who is majority leader in the U.S. Senate, and Jon Wellingshoff, Nevada's first Consumer Advocate and current chairman

CONTINUED ON PAGE 12 ►

AN OVERVIEW OF NEVADA'S RENEWABLE ENERGY PORTFOLIO STANDARD

CONTINUED FROM PAGE 11

of the Federal Energy Regulatory Commission. Reid and Wellinghoff have expressed a strong interest in developing renewable energy in Nevada.³⁹ With such leadership, the promises of renewable energy may yet become a reality.

Disclaimer: The views presented in this article are the author's and not those of any particular entity. NL

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- 1 For example, the federal stimulus bill H.R. 1, the American Recovery and Reinvestment Act, which was signed into law on February 17, 2009, includes billions of dollars related to supporting renewable energy and energy efficiency. On the state level, Senate Bill 152, "The Green Jobs Initiative" (which was signed into law on June 9, 2009) aims to tap the stimulus money in order to train workers for green-collar jobs and to weatherize homes.
- 2 On March 31, 2009, U.S. Rep. Henry Waxman and Rep. Edward Markey introduced "The American Clean Energy and Security Act," (H.R.2454) which features a national RPS as well as a cap-and-trade program for carbon dioxide emissions. energycommerce.house.gov/index.php?option=com_content&task=view&id=1560&Itemid=1.
- 3 Nevada Power and Sierra Pacific are subsidiaries of the holding company NV Energy, and each subsidiary is doing business as NV Energy. The subsidiaries provide electrical service to over 80 percent of Nevada's citizens.
- 4 www.eia.doe.gov/cneaf/solar.renewables/page/trends/rentrends.html.
- 5 Id.
- 6 NRS 704.7803.
- 7 NAC 704.8927 provides for various PEC multipliers: One PEC represents a kilowatt-hour of electricity with the exception of solar photovoltaics, in which case a 2.4 multiplier can be added. An additional .05 can be added to the 2.4 if the system is a customer-maintained distributed generation system. The number of kilowatt hours saved by energy efficiency measures is subject to a multiplier of 1.05; the multiplier is 2.0 for electricity saved during peak periods.
- 8 NRS 704.7821(2)(b).
- 9 Id.
- 10 Commission Docket No. 09-03034.
- 11 However, Nevada Power and Sierra Pacific state that a loan of PECs from Sierra Pacific to Nevada Power will be necessary for the 2008 compliance year to meet the RPS.
- 12 Commission Docket No. 09-03034, Vol. I of IV, pg. 7.
- 13 NRS 704.7811.
- 14 www.eia.doe.gov/cneaf/solar.renewables/page/geothermal/geothermal.html.
- 15 Wind is less expensive than geothermal on a per kilowatt hour (kwh) basis, but firming wind adds "system integration and firming" costs. Geothermal in Nevada is less expensive than wind when these integration and firming costs are added. So, geothermal is the least expensive firm renewable resource, but not the least expensive on a per kwh basis.

- 16 www.eia.doe.gov/cneaf/solar.renewables/page/geothermal/geothermal.html.
- 17 Id.
- 18 www.enel.it/northAmerica/boxhp.asp?IdDoc=1607952.
- 19 www1.eere.energy.gov/solar/photovoltaics.html; www1.eere.energy.gov/solar/csp.html.
- 20 A megawatt is 1,000 kilowatts, or 1 million watts.
- 21 www.accion-na.com/About-Us/Our-Projects/U-S-/Nevada-Solar-One.aspx.
- 22 www.awea.org/faq/wwt_basics.html.
- 23 Commission Docket No. 09-09034, Vol. I of IV, pg. 25.
- 24 Id.
- 25 Id.
- 26 MMBtu means one million British thermal units.
- 27 Natural-Gas Price Touches 6 ½-Year Low, Jason Womack, Wall Street Journal, April 14, 2009, pg. C10.
- 28 Congress is currently debating the price issues surrounding a possible cap-and-trade program. markey.house.gov/index.php?option=com_content&task=view&id=3589; www.nytimes.com/cwire/2009/04/20/20climatewire-a-brawl-over-numbers-breaks-out-in-capandtra-10593.html.
- 29 Id.
- 30 President Obama has made passage of a cap-and-trade program a priority, and that Congress will pass some form of cap-and-trade program is especially likely given that on April 17, 2009, the U.S. Environmental Protection Agency (EPA) ruled that carbon dioxide is a dangerous pollutant that threatens the public and thus must be regulated under the 1970 Clean Air Act. The EPA is basically telling Congress that if "you don't regulate carbon dioxide emissions, we will."
- 31 For example, on February 9, 2009, NV Energy "postponed its plans to construct a coal-fired power plant in eastern Nevada due to increasing environmental and economic uncertainties surrounding its development." investors.nvenergy.com/phoenix.zhtml?c=117698&p=irol-newsArticle&id=1254617. On March 5, 2009, LS Power affiliate White Pine Energy Associates, LLC also postponed plans for a coal plant near Ely, Nevada due to current economic conditions and increasing regulatory uncertainties. www.lspower.com/News/newsArticle030509.htm.
- 32 With respect to solar and water usage, it should be noted that CSP can use wet or dry cooling. Water usage may be high in wet cooled CSP. PV, however, uses no water.
- 33 Water Worries Shape Local Energy Decisions, Rebecca Smith, Wall Street Journal, March 26, 2009, pg. A3.
- 34 About 70 percent of NV Energy's owned generation is natural gas-fired.
- 35 Integrated Resource Plans are required to be filed with the commission pursuant to NRS 704.741.
- 36 reid.senate.gov/newsroom/pr_030509_transmissionbill.cfm.
- 37 blogs.wsj.com/environmentalcapital/2009/04/24/finding-financing-renewable-energy-struggles-banks-embrace-fossil-fuels/.
- 38 Carbon Capture and Sequestration (CSS) is a developing technology to capture, purify, and store carbon dioxide. www.netl.doe.gov/technologies/carbon_seq/index.html.
- 39 www.nytimes.com/gwire/2009/04/22/22greenwire-no-need-to-build-new-us-coal-or-nuclear-plants-10630.html.