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Testimony

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Hearing on the Role of State and Local Government, and the Private Sector in the Development  
of Renewable and Alternative Energy in America

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Chairman Gibbons, distinguished Members of the Subcommittee, my name is Don Soderberg, Chairman of the Public Utilities Commission of Nevada ("PUCN"). Thank you for giving me the opportunity to appear before you today to discuss the development of renewable and alternative energy in Nevada, and in particular Nevada's aggressive renewable portfolio standard. Nevada has two investor-owned electric utilities, Nevada Power Company and Sierra Pacific Power Company. Nevada's portfolio standard requires these utilities to derive a minimum percentage of the electricity they sell from renewable energy resources.

There are numerous projects currently being developed in Nevada that will provide renewable energy. For example, in February, I attended the groundbreaking of Nevada Solar One's new 64-megawatt, solar thermal plant in Boulder City, Nevada. This is the first large solar thermal plant that has been built in the United States in over 15 years. This plant is slated for commercial operation in March 2007.

Today, I will be discussing with you the history and current requirements of Nevada's Renewable Portfolio Standard, compliance of Nevada's utilities with the standard, roadblocks to compliance, ways to facilitate compliance, and Nevada's participation in the Frontier Line.

#### • NEVADA RENEWABLE PORTFOLIO STANDARD

##### ◦ History:

In 1997, Nevada passed a Renewable Portfolio Standard as part of Nevada Assembly Bill 366, its Electric Restructuring Legislation. This groundbreaking legislation required electric providers within the state to acquire 1 percent of total electric consumption from renewable electric generation or through purchasing renewable energy credits. This law was revised in 2001.

At the 2001 Session of the Nevada Legislature, the Legislature passed Senate Bill 372 ("SB 372"). Nevada Governor Kenny Guinn signed SB 372 into law on June 8, 2001. At the time, this was the most aggressive renewable portfolio standard in the country. The updated law required providers of electric service to generate or acquire a much larger percentage of electricity from renewable energy systems than the 1997 law. Initially, a utility was required to generate 5 percent of its energy resources from new renewable energy systems. This requirement was to rise by 2 percent every two years and culminate at 15 percent by the year 2013.

In 2005, the Nevada Legislature adopted Assembly Bill 3, which further expanded Nevada's Portfolio Standard. In addition to mandating a utility to meet its requirements by generating or acquiring a certain percentage of electricity from renewable energy systems, the new standard incorporated energy efficiency measures as another way for a utility to comply with the portfolio standard. Energy efficiency measures include any measure designed, intended or used to improve energy efficiency.

Implementation of the new standard began in 2005, and requires that 6 percent of a utility's energy resources must come from new renewable energy systems. The new standard will be implemented over time and will increase by 3 percent every 2 years until 2015, at which point the utility would be required to derive at least 20 percent of the total amount of electricity it sells to its retail customers from renewable energy or energy efficiency measures.

- o Current Requirements:

For 2006, the utilities must obtain 6 percent of its energy resources from renewable energy systems. Not less than 5% of the portfolio energy standard must be generated, acquired, or saved from solar energy systems. The utilities may also obtain up to 25 percent of the new renewable energy requirements from reduced energy consumption resulting from energy efficiency measures financed by the provider of electric service.

Nevada's Portfolio Standard is codified in Nevada Revised Statutes sections 704.7801 through 704.7828. The PUCN has adopted regulations relating to the standard in Nevada Administrative Code sections 704.8831 through 704.8899.

- RENEWABLE ENERGY RESOURCES IN NEVADA

- o Introduction

Nevada's supply of renewable resources is potentially one of the largest in the nation. The five main renewable energy resources in Nevada are geothermal, solar, wind, biomass and hydropower. Nevada also includes energy efficiency in its definition of alternative energy. Nevada is considered an ideal state for the development of solar and geothermal power.

- o Geothermal

There is an abundance of high-temperature geothermal sites in Nevada. Over 60 percent of the state has high enough temperatures for geothermal generation. I believe that geothermal power will soon become a fully competitive generation resource for the state. Geothermal is the most mature renewable energy industry in Nevada.

The Great Basin Center for Geothermal Energy, which is part of the University of Nevada Reno, is a world-class geothermal research institute. This institute conducts research to help establish geothermal energy as an economically viable energy source within the Great Basin. Also, Nevada will soon have the only college campus in the world completely powered by geothermal energy, the Redfield Campus in Reno.

Although the development of geothermal power is still in its infancy, it is interesting to note that 61 geothermal well drilling permits were issued last year by the Nevada Division of Minerals, and 33 of those wells were actually drilled. This is double the number of permits issued in each of the preceding two years.

Currently, Nevada has 12 geothermal power plants with a total energy capacity of 244 megawatts. Geothermal companies see the benefit of creating renewable energy resources in Nevada as the costs of power produced by coal or gas-fired plants continue to rise and the demands of Nevada's Portfolio Standard increases.

- o Solar

Nevada has some of the best solar resources in the world. There are many ways to harness sunlight. One system used in Nevada is the photovoltaic (PV) system. PV cells, or solar cells as they are often referred to, are semiconductor devices that convert sunlight into direct current electricity. Nevada has a growing PV industry. Much of that growth is the result of the Solar Energy Systems Demonstration Program. This program is managed by the PUCN, the Nevada Renewable Energy and Energy Conservation Task Force and Nevada utilities. The Program has been highly successful and has received national recognition as a "best practice program." Many other states are using our program as a model to develop similar programs in their states.

In its first year, the Program paid almost \$1 million in rebates to Nevada residents, small businesses, public buildings and schools. The total available rebates for the program year beginning July 1, 2005, are estimated to be \$6,000,000. The estimated rebates for the program year beginning July 1, 2006, are \$7,980,000.

Many utility-scale solar plants are currently slated for construction in Nevada. The largest one is Nevada Solar One, a 64-megawatt plant outside of Boulder City. This will be the first large megawatt scale solar power project to be constructed for commercial operation in the world since 1991.

There is tremendous potential for solar resource growth in all parts of Nevada due to our numerous military facilities. Promoting solar energy sources on military facilities could help Nevada benefit.

- Wind

There are currently no utility-scale wind farms in Nevada. However, Nevada Power Company and Sierra Pacific Power Company have signed a contract to purchase wind power from a new 50 megawatt wind facility near Ely, Nevada. Although it has experienced delays, the facility is expected to come online in 2007.

The main problem with developing large scale wind farms in Nevada is that the majority of land in Nevada is owned by the federal government. The Bureau of Land Management land has wind energy potential, but development of wind farms has been hindered due to the amount of time energy companies must wait for a federal permit to begin building and operating wind farms, which ultimately increases development costs. Also, large wind turbines are often incompatible with military activities, which may further limit growth.

Rural, community and small-scale wind facilities may be an option for creating wind energy systems that will reduce peak power demands, increase in-state electricity generation, diversify the state's energy supply portfolio and support the tax base.

- Biomass

In Nevada, biomass is defined as any organic matter that is available on a renewable basis, including, without limitation: agricultural crops and agricultural wastes and residues, wood and wood wastes and residues, animal waste, municipal wastes and aquatic plants. Much of Nevada's biomass is on federal land so the [Bureau of Land Management](#), and the [USDA Forest Service](#), are involved in biomass development.

Although biomass has not gained widespread use in Nevada, there are some projects that utilize biomass as a renewable energy source. For example, the David E. Norman Elementary School in Ely, Nevada, has installed a three million BTU per hour steam heat plant. The plant provides heat for the original school building and two building additions. The plant uses approximately 150 tons of biomass per year. The Bureau of Land Management Field Office in Ely had previously conducted a hazardous fuels reduction project that produced 7,000 tons of wood chips. The BLM promised 1,000 tons of these chips to the school so long as the school provided transportation from the woods to the school. The 1,000 tons will feed the system for 6 years. Additionally, a percentage of the fuel will come from clean unprocessed woody debris from a county landfill.

Another project the PUCN recently approved is the development of a 1 megawatt biomass facility in Northern Nevada. The Nevada Department of Corrections is constructing a wood-fired biomass generation facility to be located at the Northern Nevada Correctional Center in Carson City. The facility will burn wood chips derived from forest clearing.

The geography of the Nevada does not lend itself as readily to the production of biomass compared to other renewable energy resources. The Department of Energy rates Nevada's stock of biomass resources as "fair." However, Nevada is still interested in educating itself on the viability of using biomass as a large-scale renewable energy resource. In 2005, the Nevada Renewable Energy and Energy Conservation Task Force helped secure a \$75,000 grant from the Western Governors' Association to develop a biomass public education and outreach program.

- Hydropower

Hydropower does not represent a large portion of electricity consumed in Nevada. The primary hydroelectric resource is shared power Nevada produced from the Colorado River at Hoover, Parker and Davis dams (about 417 megawatts). There are also six small hydropower units that run on seasonal Truckee River diversions west of Reno, near Lahontan Reservoir. The Colorado River Commission is the agency responsible for the acquisition, management and protection of all of Nevada's water and hydropower resources from the Colorado River. They are also responsible for meeting the electric power needs of its wholesale and retail customers.

Although hydropower is not a predominant source of renewable energy in Nevada, it is still used by some utilities. For example, Avista Energy Inc., a provider of electric service in Nevada to a single large customer, purchased hydropower renewable energy credits to meet the requirements of the portfolio standard for 2005.

- STATUS

- 2005 compliance/non-compliance

For Compliance Year 2005, both Sierra Pacific Power Company and Nevada Power Company ("collectively referred to as the Companies") have complied with the non-solar requirements of Nevada law. As I indicated earlier, at least 5 percent of a utility's renewable portfolio standard must come from solar renewable energy systems. Both Companies found it challenging to meet the solar requirement due to a variety of reasons.

New to this year's compliance report is the inclusion of portfolio energy credits, which includes energy saved from the Companies' Demand Side Management ("DSM") programs. Essentially, DSM programs are efforts to modify the energy use habits of customers by either saving energy or shifting energy from one period of time to another. For 2005, the Companies, upon PUCN approval, intend to sell and purchase credits from Sierra Pacific to Nevada Power to help them meet the non-solar Renewable Portfolio Standard requirement.

- 2006 & beyond projections

For 2006, Sierra Pacific project that it will meet its non-solar Renewable Portfolio Standard requirement. Sierra currently has a surplus of renewable energy credits which should carry them until 2013 given existing facilities and facilities currently under construction. Nevada Power will rely on transfers of credits for 2006 from Sierra Pacific to meet the standard, and it is projected that Nevada Power will experience challenges in meeting the required standard through 2015 due to more demanding requirements of the Portfolio Standard and the expected increase in load growth.

In 2007, both Nevada Power and Sierra Pacific project that they will meet the solar requirements. It is projected that Sierra Pacific will experience a short fall in 2013, and Nevada Power will be short of meeting the requirements from 2009 through 2015. This is due to a variety of reasons, including the increase in the percentage of renewable energy required by the Portfolio Standard, expected increase in load growth, and insufficient solar energy generators.

- Enhanced Efforts to Achieve Compliance

In April 2006, the Companies jointly filed a "Revised Portfolio Compliance Plan" describing their strategy for complying with the Portfolio Standard. The Plan outlines a three-pronged strategy. Foremost, they will improve the Request for Proposal ("RPF") process by developing a new Request for Qualifications ("RFQ") and broader marketing strategies to produce reliable projects with high rates of success. Second, they intend to commit new financial and organizational resources to invest in reliable, cost-effective renewable energy projects, either independently or through partnerships, as a means of facilitating market development. Lastly, they plan on aggressively pursuing new DSM initiatives towards obtaining the 25 percent energy efficiency allowance as long as such initiatives are price-competitive with renewable energy investments.

The DSM's role as a resource for meeting the Portfolio Standard continues to grow in Nevada. There are several DSM initiatives outlined in the Companies' April 2006 filing. For example, they plan on expanding the high efficiency A/C rebate program and restoring their refrigeration collection and recycling program. These initiatives are being used to generate additional portfolio credits.

Nevada Law requires renewable energy to be generated in, or delivered to, Nevada via a power line dedicated to the transmission or distribution of electricity generated from renewable energy or energy from a qualified energy recovery process. This has caused a problem for Nevada's utilities because Sierra Pacific and Nevada Power are two separate control areas with limited transfer capability. Transfers between the two companies involve the transfers of renewable energy credits, not actual electricity. However, this problem will soon be reduced since the Companies have announced that they are planning to construct a new 500kV transmission line between Sierra Pacific and Nevada Power. This new line will help alleviate the need to transfer renewable energy credits between the utilities.

Nevada Power and Sierra Pacific have reacted to Nevada's aggressive Portfolio Standard by contracting with renewable energy providers to construct and operate 11 new renewable energy systems. Five of these new facilities, which have either been completed or currently under construction, will generate about 111 megawatts. An additional 228 megawatts is currently under active negotiation as a result of RFPs from 2005 and earlier. Although not all of these negotiations will produce viable contracts, Nevada Power and Sierra Pacific intend to expand negotiations to additional respondents from the 2005 RFP.

## • WAYS TO FACILITATE COMPLIANCE

- Renewable Energy Credits as a Way to Meet the Portfolio Standard:

The PUCN has helped Nevada utilities meet the Portfolio Standard compliance requirements by implementing a Renewable Energy Credit ("REC") trading program. Beginning January 1, 2003, in order to help the utilities meet Nevada's portfolio standard, Nevada's renewable energy producers have been able to earn RECs, which can then be sold to utilities to meet the standard. In order to participate in this trading program, owners of renewable energy systems must register their system with the PUCN. Our office maintains a 2-page application form on our website. Once the PUCN issues RECs to a renewable energy system owner, the RECs are valid for five years as the value of a REC is market driven. For RECs, renewable energy is defined as biomass, geothermal energy, solar energy, wind, and waterpower.

- o TRED:

To address the problem of some renewable energy developers being unable to finance their projects in Nevada, our office engaged in a collaborative effort with the Governor's Office, renewable energy developers, the Companies and the state consumer advocate to create a program where project financiers are guaranteed payments regardless of the financial situation of the utility. The program, called the Temporary Renewable Energy Development Trust ("TRED"), assists with the completion of new renewable energy projects constructed under PUCN-approved renewable energy or renewable energy credit contracts. As the name indicates, this program is a temporary solution to back utility contracts until the Companies obtain a credit rating status of investor grade. In 2004, the PUCN adopted regulations regarding the TRED Program. Nevada's investor-owned utilities jointly filed an application with the PUCN to establish a TRED program and a TRED trust for each utility.

TRED receives renewable energy payments from the utilities' ratepayers and makes scheduled payments to renewable developers for energy delivered to utilities. A renewable energy developer who has a contract with one of the electric utilities can then apply to the PUCN for eligibility under TRED. TRED pays renewable energy producers for the power they generate, rather than having Nevada Power and Sierra Power pay them. This Program makes it easier for the renewable energy developers to secure necessary construction capital. This program will help the Companies meet Nevada's Renewable Portfolio Standard.

- o Adding Conservation

The 2005 Renewable Portfolio Standard includes the use of energy saving and energy efficiency measures to meet the requirements of the portfolio standard for renewable energy and the system of renewable energy credits. Providers of electric service can now meet up to 25 percent of the renewable energy requirements from reduced energy consumption as a result of energy efficiency measures that have been financed by the provider of electric service. The DSM initiatives I discussed earlier fall within this category. Energy efficiency measures are technology-based and are sustained over time. Examples include compact fluorescent light bulbs, high energy efficiency air conditioners, refrigerators, boilers and chillers.

- o Bill Draft Request Exempting Renewable Energy Producers from UEPA

As an incentive for renewable energy producers to continue to build renewable generating plants, the PUCN is urging the 2007 Nevada Legislature to amend its statute to exclude renewables from having to meet the requirements of the Utility Environmental Protection Act. In Nevada, we currently have a statute that exempts generating plants of 150 kilowatts or less that use renewable energy as their primary sources of energy from the requirements of the Utility Environmental Protection Act. The PUCN has recently voted to submit a Bill Draft Request ("BDR") to the 2007 Nevada Legislature. The BDR will amend the definition of "utility facility" to exclude all renewable energy electric generating plants, so that these plants will not need to obtain a UEPA permit from the PUCN. Environmental considerations are not jeopardized by elimination of the permit requirement. This is one example of the way the PUCN is encouraging the use of renewable energy-based generation.

The Companies have taken an active role in developing renewable energy systems of their own. If this BDR is adopted by the Nevada Legislature, this will benefit the Companies since it will encourage timely development of company-owned renewable sources. In the Companies' compliance report, they state that they have committed new financial and organizational resources to invest in company-owned facility, and to establish partnerships and equity arrangements with renewable energy developers. Over the next three years, the Companies plan on investing \$3.5 million in on-site renewable power systems.

- FRONTIER LINE

- o Introduction

The next area I wanted to discuss with you is the Frontier Line. As I am sure you are aware, the Frontier Line is a proposed high-voltage electric transmission line that will interconnect Nevada, Wyoming, Utah, California and other Western States. About a year ago, the Governor's of Nevada, California, Utah and Wyoming entered into a Memorandum of Understanding in order to pursue this proposal. In the past year the energy advisors (functioning as a board of directors) in each state have met with the "footprint" utilities as well as independent transmission developers. The plan is for the Frontier Line Project to be constructed through each state over the next five years and deliver up to 12,000 megawatts of renewable and conventional energy. Half of the power transmitted over the new line is to come from renewable energy sources. According to the Rocky Mountain Area Transmission Study, the line's estimated annual benefit to mountain states in the West is \$926 million to \$1.7 billion.

- o Status

The utility leaders of these states have recently formed the Western Regional Transmission Expansion Partnership to create a detailed feasibility analysis and conceptual plan for the Frontier Line. The participating utilities in the Partnership are Pacific Gas & Electric Company, San Diego Gas & Electric, Southern California Edison Company, Sierra Pacific Power Company, Nevada Power Company and Rocky Mountain Power and Utah Power, both divisions of PacifiCorp. As of this month, the leaders of the partnership announced that they intend to have the feasibility report and conceptual plan completed within a year. The results of the feasibility study will determine the proper course of action for the Partnership.

- o Why this is a good thing

The Frontier Line will bring new transmission that will help facilitate the next generation of renewable and advanced coal technologies across the Western States. Consumers and ratepayers will be protected from energy price hikes due to more transmission of energy that will diversify our energy supplies and decrease our reliance on energy supplies from overseas.

- CONCLUSION

That is all I have for you today. I would be happy to answer any questions you may have.