

Bulletin No. 11-06



Production and Use of Energy

Legislative Counsel Bureau



January 2011

PRODUCTION AND USE OF ENERGY

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JANUARY 2011

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SUMMARY OF RECOMMENDATIONS

LEGISLATIVE COMMISSION'S COMMITTEE TO CONDUCT AN INTERIM STUDY ON THE PRODUCTION AND USE OF ENERGY

Senate Concurrent Resolution No. 19
(File No. 99, *Statutes of Nevada 2009*)

The Legislative Commission's Committee was directed to conduct a study of the production and use of energy in the State. The Committee was created in 2009 under Senate Concurrent Resolution No. 19 (File No. 99, *Statutes of Nevada*). See the Appendix for the full text of the measure. The Legislative Commission must submit a report of the results of the study and any recommendations for legislation to the 76th Session of the Nevada Legislature.

The Committee was directed to: (1) review the statutes and regulations of this State relating to energy production, use and transmission, energy efficiency including energy efficiency in public buildings, the use and availability of transportation fuels and facilities including alternative fuels, and motor vehicle electrification; (2) review the extent of biofuel production in Nevada and prospects for increasing production at existing facilities and introducing new types of such fuels, including biodiesel, ethanol from nonfood sources, algae-based fuel, and other emerging fuel technologies; (3) review existing State energy and energy efficiency programs and their implementation and effectiveness; (4) review new energy and energy efficiency programs enacted during the 75th Session of the Nevada Legislature and their implementation and effectiveness; (5) receive input from interested parties and the public on ways existing and new programs can be further improved; (6) solicit recommendations for additional new programs for future legislative consideration and potential enactment; (7) review existing and emerging green technologies, including smart grid technology, and their suitability for deployment in Nevada, including consideration of obstacles to deployment and methods to eliminate or minimize those obstacles; and (8) review efforts to attract more green industries and jobs to Nevada and explore ways to expand existing green businesses and jobs in Nevada.

The Committee held a total of six meetings, including a work session, during the course of the study. All meetings were open to the public and conducted through simultaneous videoconferences between legislative meeting rooms at the Grant Sawyer State Office Building in Las Vegas, Nevada, and the Legislative Building in Carson City, Nevada.

During its final meeting, the Committee adopted four recommendations for bill draft requests for consideration by the 2011 Legislature. The recommendations support enhanced energy efficiency in buildings leased by the State, tire pressure checks of vehicles during certain maintenance operations, increased renewable energy and energy efficiency options in new residential construction, increased continuing education in energy issues for real estate licensees, appraisers and mortgage brokers, and a biofuel mandate.

**REPORT TO THE 76TH SESSION OF THE NEVADA LEGISLATURE BY
THE LEGISLATIVE COMMISSION'S COMMITTEE TO CONDUCT AN
INTERIM STUDY ON THE PRODUCTION AND USE OF ENERGY**

I. INTRODUCTION

The work of the Legislative Commission's Committee to Conduct an Interim Study on the Production and Use of Energy recognizes the crucial role energy plays in the economic and environmental health of Nevada. This is particularly true in a time when the nation and the world are seeking ways to avoid the impacts of global warming and the State is seeking to diversify its troubled economy by developing Nevada's rich endowment of renewable energy resources. The study also emphasizes the important linkage between energy production and both transportation and water issues. Nevada has not conducted a legislative study of energy issues since 1998; given the importance of energy to so many aspects of the State's well-being and in light of the many advances in energy technology and market structure since the last study, the Legislature determined to examine this industry again and reevaluate the State's energy policies in view of changed circumstances.

On August 24, 2009, Nevada's Legislative Commission established the Committee to Conduct an Interim Study on the Production and Use of Energy, under the authority of *Nevada Revised Statutes* (NRS) 218E.200. The Commission requested a review of existing statutes and regulations relating to energy usage and efficiency, the extent of biofuel production in Nevada and the prospects for increasing its use and production, a review of existing and new State energy and energy efficiency programs, as well as an examination of existing and emerging green technologies with an assessment of efforts to attract more green industries to the State.

Members of the Committee during the 2009-2010 Interim were:

Senator Michael A. Schneider, Chair
Assemblywoman Marilyn Kirkpatrick, Vice Chair
Senator Randolph Townsend
Senator John J. Lee
Assemblyman Marcus L. Conklin
Assemblywoman Heidi S. Gansert

The following Legislative Counsel Bureau (LCB) staff provided services for the Committee:

Scott Young, Principal Policy and Special Projects Analyst, Research Division
Dave Ziegler, Principal Research Analyst, Research Division
Wayne Thorley, Senior Research Analyst, Research Division
Matthew S. Nichols, Principal Deputy Legislative Counsel, Legal Division
Anne Vorderbruggen, Senior Research Secretary, Research Division

The Committee held six meetings at the Grant Sawyer State Office Building in Las Vegas, Nevada, and the Legislative Building in Carson City, Nevada, through simultaneous videoconferencing. During the course of the study, the Committee heard expert presentations and public testimony on the following subjects:

- Progress on the implementation of energy legislation from the 2009 Legislative Session;
- Biofuel production and electric vehicle technology;
- Energy efficiency in buildings;
- Transmission projects; and
- Feasibility of feed-in tariffs (FIT) for spurring renewable energy development.

Interested persons may view Committee agendas, minutes, and work session document on the Committee's Internet webpage at: <http://leg.state.nv.us/Interim/75th2009/Committee/Studies/Energy/?ID=56>.

At its June 29, 2010, work session, the Committee voted to request drafting of legislation for consideration by the 2011 Legislature. These recommendations include legislation:

- Promoting enhanced energy efficiency in buildings leased by the State (**BDR 27-221**);
- Requiring tire pressure checks of vehicles during certain maintenance operations (**BDR 43-220**);
- Addressing increased renewable energy and energy efficiency options in new residential construction and requiring increased continuing education in energy issues for real estate licensees, appraisers, and mortgage brokers (**BDR 54-219**); and
- Creating a biofuel mandate (**BDR 32-218**).

II. BACKGROUND

American business in general is operated by private enterprise. However, in some instances, a product or service is of such fundamental importance to the welfare of citizens that it is deemed to be "affected with a public interest" and therefore subjected to pervasive governmental regulation to ensure availability at reasonable prices. The hallmark of this type of regulation is generally the granting of an exclusive geographical franchise to a single provider, coupled with a duty to serve all customers within the assigned territory. In exchange, the provider, normally referred to as a "utility" in the energy arena, is allowed the opportunity to earn a reasonable rate of return on "prudent" operations, the return being set by the regulators after administrative hearings.

Energy utilities are one of the most important types of public utility. They have traditionally been highly regulated but, in recent decades, have experienced varying degrees of deregulation

in some jurisdictions. Generally, there is a certain amount of shared jurisdiction over public utilities by federal and state (and sometimes local) governmental bodies. The authority of these entities may overlap and lines of demarcation between them may become blurred. It is important to understand the scope of federal jurisdiction as a prelude to evaluating the appropriateness of state policies.

A. FEDERAL ENERGY POLICY

Federal Power Act of 1935

In the energy industry, regulation is largely divided along wholesale and retail lines. The federal government primarily regulates wholesale transactions while states generally oversee retail operations. Until 1927, state utility commissions regulated most aspects of electric utilities, including establishment of rates for interstate sales of electricity. In that year, the United States Supreme Court handed down a decision prohibiting state regulation of interstate electric rates on the ground that such regulation created a burden on interstate commerce. However, no federal authority over interstate electric sales existed and, therefore, the ruling resulted in a regulatory gap. The Federal Power Act (FPA) of 1935 was enacted to address this situation. The FPA gave the federal government jurisdiction over transmission of electric energy in interstate commerce and the sale of electric energy at wholesale in interstate commerce.

In the 1970s, recessionary and inflationary pressures reduced electricity demand, and the resultant excess capacity in existing generation plants contributed to price increases to cover fixed operating costs. Additionally, foreign oil embargoes drove up the price of oil, the principal fuel then used by many electrical utilities. Finally, environmental concerns, the prohibition of new natural gas usage for power generation, and nuclear power plant costs all led to increasing electricity prices for the first time in the industry's history.

Additionally, alternative sources such as geothermal, solar, and wind were encouraged. Some state commissions began mandating that specific percentages of new power come from these renewable sources, even though the cost per kilowatt hour was higher. States also began implementing integrated resource planning programs to coordinate demand-side management and supply-side management techniques with environmental projects and renewable energy initiatives.

Public Utility Regulatory Policies Act of 1978

In 1978, Congress passed the Public Utility Regulatory Policies Act (PURPA) of 1978 in response to an ongoing energy crisis. Its goal was to reduce dependence on expensive foreign oil and to avoid repetition of the 1977 natural gas shortage by encouraging utilities to conserve gas and oil. This enactment created a new category of electric business: independent, unregulated companies known as qualifying facilities (QFs). These entities are permitted to build cogeneration plants that produce electricity and use otherwise wasted heat to generate steam. Facilities may also qualify by meeting specific energy requirements such as using

prescribed types of renewable energy, e.g., biomass, geothermal, solar, or wind. These QFs were granted the legal right to sell electricity to utilities at avoided cost. Avoided cost is the cost for the utility to self-generate or purchase power elsewhere.

About the time PURPA was enacted, traditional utilities were becoming reluctant to build new power plants due to declining demand, environmental concerns, and nuclear power problems. Concurrently, technological advances that utilize combined cycle natural gas turbines and circulating fluidized bed boilers, allowed newer, smaller generating plants to be brought on-line more economically and with shorter lead times. Such conditions led to the rise of independent power producers. These entities, also referred to as merchant power companies, build power plants for a fee and then sell the electricity to utilities at wholesale.

Energy Policy Act of 1992

Early in the 1990s, proponents of the competitive market approach initiated steps to extend it to the electric industry. Congress responded by establishing a new national energy policy embodied in the Energy Policy Act (EPAct). The intent was for the electric industry to move toward a fully competitive market system, with the Federal Energy Regulatory Commission (FERC) being responsible for most of the implementation. The EPAct granted exemptions from certain federal requirements for a corporation whose exclusive business is ownership and operation of a generating plant that sells its power at wholesale. Such an entity is known as an exempt wholesale generator. Thus, EPAct created the potential for significant deviations from the traditional vertically integrated pattern that had characterized the electric utility industry for many decades. The evolution beyond the traditional, vertically integrated industry structure has also fostered the growth of wholesale power marketers and brokers. Marketers purchase electricity from generators and then resell it to a utility; brokers do not actually take title to power but instead match wholesale buyers and sellers for a fee.

However, all these new entities, generators, and intermediaries alike, to effectively compete in the wholesale market, need access to the nationwide transmission grid, which is generally owned by the vertically integrated utilities. Therefore, EPAct authorized FERC to order transmission-owning utilities to open their lines to parties who desire to buy or sell electricity at wholesale. Thus, EPAct greatly expands FERC's jurisdiction over wholesale transactions. At the same time, however, EPAct provides that, "Nothing in this subsection shall affect any authority of any State or local government under State law concerning the transmission of electric energy directly to an ultimate consumer."

This array of federal actions prompted debate at the state level on how to promote greater wholesale and retail competition among power producers and led to steps in many states to authorize retail electric competition. However, in the aftermath of the problems experienced in California in 1999 and 2000, a number of states, including Nevada, largely abandoned deregulation at the retail level.

Energy Policy Act of 2005

During the middle of the decade, facing renewed political instability in the Middle East that affected energy fuel supplies, Congress again began attempting to craft an updated national energy policy. Efforts to produce a comprehensive bill were hampered, in part due to competing regional demands and concerns that some segments of the energy sector were seeking subsidies that were too generous. During the 2005 term, Congress finally passed a measure which was signed by the President. Some critics maintained the legislation did little to decrease the demand for foreign fuels while supporters pointed to increased incentives for domestic energy production and tax credits to encourage development of renewable energy. Clearly, however, most parties felt more remained to be done if the United States was to have a modern, comprehensive energy policy.

Energy Independence and Security Act of 2007

With oil prices nearing \$100 per barrel and increasing concern about the impacts of global warming, Congress again devoted a great deal of attention to energy issues in 2007. The House and Senate passed energy bills with differing provisions. The final reconciled bill contains provisions increasing motor vehicle fuel efficiency standards and required use of biofuels such as corn ethanol and cellulosic ethanol. Increased appliance efficiency standards are also included. However, a key provision in the House bill to require 15 percent of all energy to come from renewable sources by 2020, along with an extension of tax credits for various renewables such as wind and solar, was deleted from the Senate bill in the face of a threatened presidential veto. Supporters of such provisions vowed to try again after the 2008 elections.

American Recovery and Reinvestment Act of 2009

A severe recession during 2008 and 2009 caused congressional attention to shift its focus from crafting a sustainable national energy policy towards seeing energy as an economic recovery tool. Massive federal stimulus packages were enacted which included large amounts for research, development, and deployment of a wide variety of renewable energy technologies and domestic transportation fuel resources. Many of the programs and projects funded by these stimulus measures are still in their incipient phases so their long-term impacts on the energy sector are difficult to evaluate currently. Continuing instability in foreign oil-producing regions and the accompanying volatility in commodity prices will likely maintain pressure on Congress to develop an updated comprehensive national energy policy.

B. STATE ENERGY POLICY AND ISSUES

State Regulation of Energy Companies

In Nevada, public utilities are under the jurisdiction of the Public Utilities Commission of Nevada (PUCN). The Commission consists of three commissioners appointed to four-year terms by the Governor. The commissioners are assisted by professional staff consisting of attorneys, engineers, analysts, and economists. The PUCN sets retail rates for natural gas and

electricity. Decisions of the PUCN are appealable to the courts. The Consumer's Advocate of the Bureau of Consumer Protection within the Office of the Attorney General represents consumer interests before the PUCN.

The PUCN is charged with regulating public utilities in order to:

- Provide for fair and impartial regulation of public utilities;
- Provide for the safe, economic, efficient, prudent, and reliable operation and service of public utilities; and
- Balance the interests of customers and shareholders of public utilities by providing public utilities with the opportunity to earn a fair return on their investments while providing customers with just and reasonable rates.

The Commission is funded by a charge called the "mill assessment" on the gross operating revenues derived from intrastate operations of each public utility. A mill is one-tenth of 1 cent. The maximum mill assessment for the Commission is 3.50 mills; an additional assessment of 0.75 mills for the Consumer's Advocate is also authorized.

Legislative Energy Policy Statement

Nevada has a statutorily enacted energy policy statement which is set forth in NRS 701.010:

NRS 701.010 Legislative findings; state policy.

1. The Legislature finds that:

(a) Energy is essential to the economy of the State and to the health, safety and welfare of the people of the State.

(b) The State has a responsibility to encourage the maintenance of a reliable and economical supply of energy at a level which is consistent with the protection of environmental quality.

(c) The State has a responsibility to encourage the utilization of a wide range of measures which reduce wasteful uses of energy resources.

(d) The State and the public have an interest in encouraging public utilities to promote and take actions toward energy conservation.

(e) Planning for energy conservation and future energy requirements should include consideration of state, regional and local plans for land use, urban expansion, transportation systems, environmental protection and economic development.

(f) Government and private enterprise need to accelerate research and development of sources of renewable energy and to improve technology related to the research and development of existing sources of energy.

(g) While government and private enterprise are seeking to accelerate research and development of sources of renewable energy, they must also prepare for and respond to the advent of competition within the electrical energy industry and are, therefore, encouraged to maximize the use of indigenous energy resources to the extent competitively and economically feasible.

(h) Prevention of delays and interruptions in providing energy, protecting environmental values and conserving energy require expanded authority and capability within State Government.

2. It is the policy of this State to encourage participation with all levels of government and private enterprise in cooperative state, regional and national programs to assure adequate supplies of energy resources and markets for such energy resources.

3. It is the policy of this State to assign the responsibility for managing and conserving energy and its sources to agencies whose other programs are similar, to avoid duplication of effort in developing policies and programs for energy.

To implement this policy, the Legislature has created a number of programs and entities, including:

- Requirement of a comprehensive State energy plan developed by the Director of the Office of Energy in the Office of the Governor that promotes energy projects to enhance economic development in the State, encourages use of renewable energy, and fosters conservation of energy;
- Triennial integrated resource planning requirements designed to increase supply and decrease demand based on forecasts of future power usage while providing for the best combination of sources to meet those projected needs;
- A renewable energy portfolio standard (RPS) that requires power suppliers to gradually increase the percentage of electricity derived from renewable sources and energy efficiency measures from 12 percent in 2010 (the current level) to 25 percent in 2025;
- Incentive programs for installation of solar, wind, and small-scale waterpower generation systems; and
- A net metering program that allows customers to use renewable energy systems to generate up to 1 megawatt (MW) of power for which the customer receives credit from the utility.

In 1997, the Legislature authorized a transition to a competitive retail environment, which was refined in 1999. In the aftermath of the western energy crisis in 1999 and 2000, that process was first delayed and then largely reversed in 2001. However, large customers who use more than 1 MW of power can secure their own power sources if they meet certain conditions. One MW is enough electricity to supply approximately 600 average homes.

Several mining companies in Nevada built their own power plants under these provisions. Newmont Mining Corporation built a 200-MW coal-fired facility near Battle Mountain while Barrick Gold Corporation constructed a 115-MW combined cycle natural gas plant ten miles east of Reno.

In the early years of the new century, the Legislature continued to refine policies fostering the growth of renewable energy and energy efficiency by enhancing existing programs and

incentives and adopting new ones designed to encourage more use of clean, domestic energy sources.

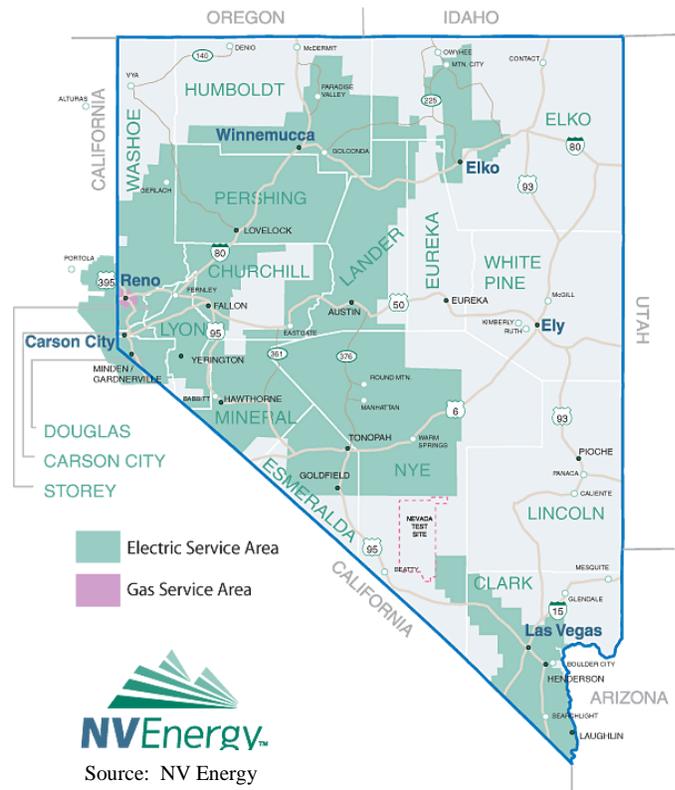
During the 2009 Session, the Legislature, like Congress, responding to the severe economic crisis, focused policy directives on stimulating “green energy” jobs and on increasing the amount of renewable energy generated in Nevada, both for domestic consumption and for export, as part of long-term efforts to diversify the State’s economy.

State Energy Utilities

Formerly there were two major electric utilities in the State: Nevada Power Company in the southern portion of the State and Sierra Pacific Power Company in the north. These companies merged in 1998 and now both operate under the name of NV Energy. Southwest Gas Corporation supplies natural gas in the south, as does NV Energy in the north. Additionally, there are 15 rural electrical cooperatives and power districts. Formation of cooperatives and power districts must be approved by the PUCN but thereafter the Commission has little authority over these entities; instead, they are answerable to their members through an election process.

NV Energy

In northern Nevada, NV Energy covers a service territory of approximately 50,000 square miles in western, central, and northeastern Nevada and the Lake Tahoe area of California. The company has about 360,000 electric customers and provides natural gas to some 147,000 consumers. The utility owns 47,314 miles of electric transmission and distribution lines, and 1,634 miles of gas pipelines. The all-time peak electric usage occurred on July 5, 2007, at 1,743 MWs. In southern Nevada, NV Energy provides electric service to over 807,000 customers in a 4,500-square-mile territory. The utility owns more than 36,000 miles of transmission and distribution lines. Peak usage of 5,866 MWs occurred on the afternoon of July 5, 2007.

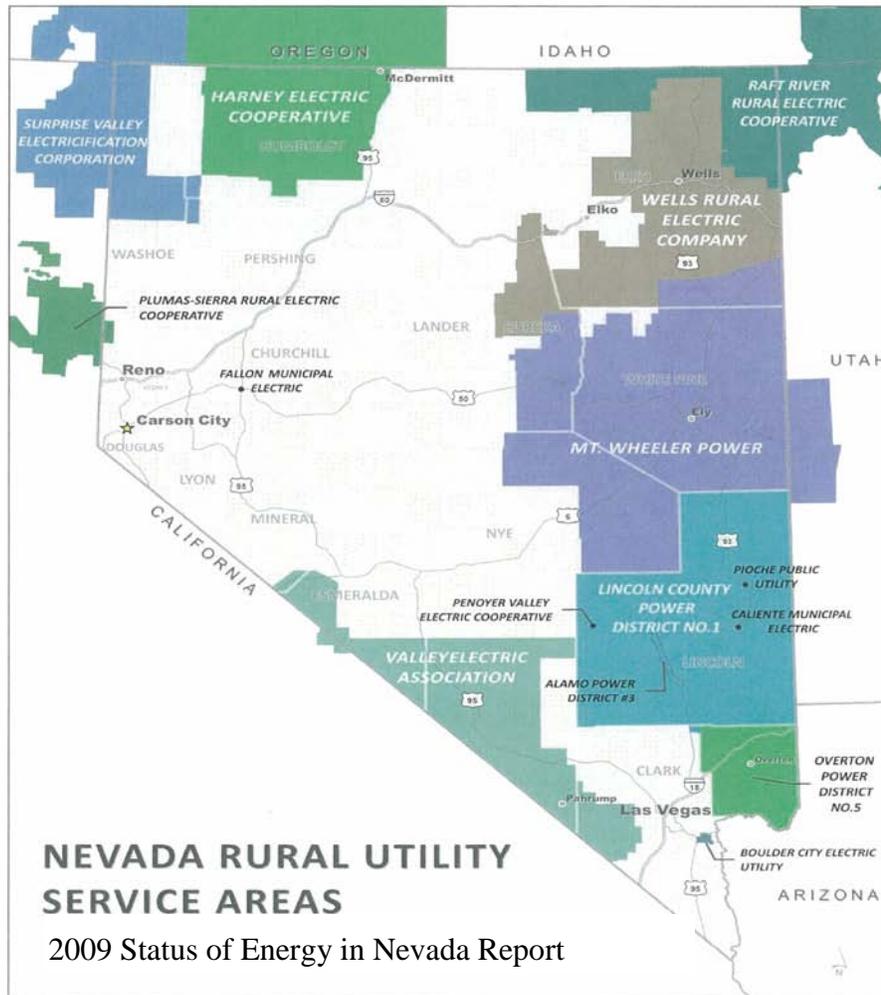


Southwest Gas Corporation

Southwest Gas Corporation is an investor-owned natural gas enterprise headquartered in Las Vegas serving over 1.8 million customers in Arizona, Nevada, and parts of northeastern and southeastern California. The company has been one of the fastest growing natural gas suppliers for more than ten consecutive years, adding as many as 71,000 new customers a year at times. About 40 percent of the customers are located in Nevada. As with the electric utilities, recent economic conditions have slowed the growth rate.

Other Service Providers

In addition to the large investor-owned utilities, Nevada has 15 rural cooperatives, municipal utilities, and power districts. Cumulatively, these entities serve somewhat more than 50 percent of the land area of Nevada. Each of them is governed by its owner-members and they are under the jurisdiction of the PUCN for only a few limited purposes.



Source: Nevada State Office of Energy

Transmission and Distribution Facilities

Adequate development of transmission capacity is an important issue for utilities. Since Nevada's investor-owned utilities do not generate all the electricity they use, power lines are needed to transport additional supplies into the State. Additionally, merchant generation plants need access to the interstate transmission system in order to sell their power in other states. Currently, northern and southern Nevada have no direct transmission interconnections. This situation makes it difficult to transfer power between the regions when there is excess capacity in one and greater demand in the other.

To address this issue, a 250-mile transmission interconnection between the two regions was proposed by NV Energy and also by LS Power, LLC of New Jersey. However, most observers agreed that two separate parallel transmission projects did not make economic sense. In January 2010, the two entities announced a plan to create a joint venture arrangement to construct a single system which they would share. A final agreement between the two parties was signed on August 20, 2010. Construction of the project, called the One Nevada Transmission Line (ON Line) is expected to commence by the end of 2010. It is expected to produce about 400 jobs and millions of dollars in sales, use, and property taxes. The agreement must still be approved by the PUCN and FERC.

Independently, LS Power plans to extend the line into southern Idaho where it will connect with existing transmission lines that will allow power from wind farms in Montana, Oregon, Washington, and Wyoming to be imported to Nevada and the southwest, greatly increasing the region's access to renewable energy.

The north-south transmission system will allow more development of northern Nevada's extensive geothermal resources. Presently, more than 300 MWs of capacity have been built, with another 300 MWs planned. Estimates of the total feasible geothermal capacity exceed 2,000 MWs. With a transmission line connecting northern and southern Nevada, this base-load electric potential can be made available to the southern portions of the State in the summer to help meet its enormous air conditioning load. In turn, the large southern solar resources can be shipped north in winter to offset the increased cold weather heating needs.

There has also been discussion of another possible transmission system along Nevada's western border with California. Some of the best solar sites are located in this area but development is hampered by lack of transmission capacity in the area. On August 19, 2010, Valley Electric Association, one of the electric cooperatives, signed an agreement with the Las Vegas Paiute Tribe allowing the cooperative to complete the final 6 miles across tribal lands of a 58-mile transmission project that will enable access to proposed solar projects in the Amargosa Valley along the western border of Nevada. Commencement of the project is expected within six weeks of the signing and is projected to result in some 80 jobs. The cost is approximately \$30 million.

Air Quality and Water Consumption

Electric generation plants have increasingly come under criticism for their role in air quality problems and related health issues. In April 2004, the U.S. Environmental Protection Agency (EPA) identified the Las Vegas Valley as exceeding federal standards for ground-level ozone, a component of smog. During the first week of January 2010, the EPA announced plans for even more stringent air quality standards which will be even more difficult for southern Nevada to meet. Ultimately, a region that violates air quality standards after a grace period for compliance faces federal sanctions. Although the newer power plants in the Las Vegas area are cleaner, more efficient natural gas-fired units, they still contribute to overall air quality issues. Continued residential and commercial growth increases the need for electricity, which puts further pressure on air quality. This situation requires planning to ensure future power demands can be met within acceptable environmental limits.

Additionally, all electric power plants, even the solar ones, require water for cooling or cleaning purposes. Given the prolonged drought in the west, water consumption in connection with electric power production is an increasingly important consideration. A wet-cooled solar thermal power plant consumes about 2.61 million gallons of water per MW; while solar photovoltaic plants use much less water, it still takes nearly 17,000 gallons per MW to keep the panels clean. To put this in perspective, an acre-foot of water is 325,851 gallons, approximately enough to serve a family of five people for one year. While generation plants, including solar facilities, can be designed to use air cooling technology, this lowers their efficiency and hence increases the cost of operation in hot weather.

Concern over water consumption for solar plants has already arisen in the permitting process for several proposed projects. So have issues over habitat impacts. Several solar projects are in jeopardy because of potential interference with protected species such as the Desert Tortoise.

Low-Income Assistance Programs

In 2001, the Legislature established the Universal Energy Charge (UEC) to provide assistance with rising power bills to low-income consumers. The UEC is a charge of 3.30 mills on each therm of natural gas sold at retail for consumption within Nevada, and 0.39 mills on each kilowatt-hour of electricity that the retail customer purchases for consumption within Nevada. The UEC does not apply to natural gas sold as a source of energy to generate electricity, or to any kilowatt of electricity used in electrolytic-manufacturing processes. Furthermore, the charges do not apply to public and municipal utilities, rural cooperatives, or general improvement districts. A quarterly cap of \$25,000 is placed on the charges for each single retail customer or customers under common ownership and control. This cap affects commercial and industrial retail customers, not smaller residential customers.

The proceeds are remitted to the PUCN each quarter. The Commission is authorized to retain up to 3 percent of the amount collected as an administrative charge. Utilities may pass the

charge through to ratepayers, provided it is set forth as a separate item on the utility bill. The average monthly UEC incurred by a typical residential customer is approximately \$.60 to \$1.

Distribution of Universal Energy Charge Funds

Seventy-five percent of the amount collected from the UEC is distributed to the Division of Welfare and Supportive Services (DWSS), Department of Health and Human Services, to assist eligible households in paying for electricity and natural gas. The Division is authorized to use not more than 5 percent of the funds distributed to it for administrative expenses. The remaining 25 percent of the money is distributed to the Housing Division, Department of Business and Industry, for programs of energy conservation, weatherization, and energy efficiency. The Housing Division may use not more than 6 percent of the money distributed to it for administrative expenses. Additionally, 30 percent of any unspent and unencumbered DWSS UEC funds must be transferred to the Housing Division at the end of a fiscal year for further energy conservation and efficiency aid to qualifying residential customers. Both the DWSS and the Housing Division limit eligibility for assistance to households with incomes less than 150 percent of the federally designated poverty level. During Fiscal Year 2009, the Housing Division weatherized 1,107 units with \$3,327,728 in UEC funding and another 1,163 units with \$761,347 in federal funds. Using American Recovery and Reinvestment Act of 2009 funding, the Housing Division weatherized another 5,351 dwelling units through July 2010.

Related Energy Assistance Programs

The DWSS also administers the federally funded Low Income Home Energy Assistance (LIHEA) Program. This program is likewise available to households with incomes less than 150 percent of the federally designated poverty level. Due to the severe economic crisis during 2009, Congress substantially increased LIHEA funding and modified the 150 percent requirement to 200 percent to make assistance available to a greater spectrum of needy people. Assistance is available from July 1 through May 31 and a new application must be submitted each year. Additionally, the utilities have established funds composed of voluntary contributions from customers and matching company donations for the assistance of low-income consumers.

III. REVIEW OF MAJOR ISSUES AND COMMITTEE ACTIVITIES

A. ENERGY INDUSTRY IN NEVADA

One of Nevada's major legislative goals is to attract and expand so-called "green" companies. These are renewable energy, energy conservation, and energy efficiency operations that can provide capital investment and high paying jobs for the State. They are not only important for economic growth and diversification but help improve the environmental quality of life for Nevada residents.

At the beginning of each meeting except the final work session, the Committee heard testimony from owners of Nevada-based renewable energy businesses. By giving such companies visibility, Nevada can demonstrate to other similar businesses that Nevada is a hub for such activities and that the State is building a skilled green workforce. These presenters were invited to inform the Committee about the particulars of their companies so policy makers and the public could become more familiar with renewable enterprises currently operating in the State and hear recommendations for fostering a business climate that will attract similar operations.

ElectraTherm, Inc.

The Committee heard a presentation by ElectraTherm, Inc. of Carson City on November 3, 2009. The company manufactures a technology that turns relatively low temperature waste heat from industrial processes and geothermal sources into electricity. Steve Olson, President and Chief Financial Officer, recommended the following considerations for policy makers: (1) keeping in mind the distributed energy paradigm where smaller system sizes are encouraged; (2) recognizing systems that can take waste heat and turn it into emissions-free electricity; and (3) removing the requirement for a utility subsidy for the system to be recognized as an energy efficiency measure.

Bently Biofuels

Two presentations were made at the December 15, 2009, meeting. The first was by Carlo Luri, General Manager of Bently Biofuels located in Minden, Nevada. The company collects used cooking oil feedstock and converts it into biodiesel to replace the one-quarter million gallons of diesel being used in the business each year. He noted the company has evolved into a regional producer of biodiesel, and it retails biodiesel and ethanol blends.

Mr. Luri testified that there is a small cost premium of about 2 to 3 cents per gallon associated with a low blend of biodiesel. He noted that 100 percent biodiesel is currently priced about 10 percent higher than petroleum diesel, with the benefit of a dollar per gallon federal tax credit which is set to expire at the end of the year. Mr. Luri concluded that if the federal tax credit is added in, 100 percent biodiesel is about 30 to 40 percent higher in cost than petroleum diesel.

In response to a question about which states have renewable fuel standards and if renewable fuel standards would help in Nevada, Mr. Luri replied that the first state to have renewable fuel standards was Minnesota, which mandated that all diesel fuel contain 2 percent biofuels; that standard has now moved to 5 percent. Mr. Luri reported that Oregon has recently implemented a statewide mandate. He noted this is a small step but it does create the demand that is necessary to support these infant industries.

Fulcrum BioEnergy, Inc.

The second presentation was made by Jeanne Benedetti, Senior Director of Project Development, Fulcrum BioEnergy, Inc., Pleasanton, California, a new company that focuses on transforming presorted municipal solid waste to ethanol. Ms. Benedetti discussed the strategy of Fulcrum BioEnergy, Inc., its technologies and process, the proposed Sierra Biofuels Plant in the Tahoe-Reno Industrial Center in Storey County, Nevada, and the benefits the project will bring to Nevada and the environment. Ms. Benedetti stated that oil companies are voluntarily blending year-round, especially when oil prices are up. She noted that ethanol is cheaper to blend and the oil companies can blend up to 10 percent year-round, to offset the cost of oil.

Ms. Benedetti noted that the facility is sized to convert 90 tons of feedstock a year into ethanol and 40 tons a year into renewable power; there may be 10 percent of other metal and aluminum waste that would go to a recycler. Ms. Benedetti said the company plans to start construction on the project in the summer of 2010 and be operating in 2012. Regarding pollution and water usage, Ms. Benedetti said that if the proposed gas turbine is not considered, the facility would produce less than 25 tons of pollution a year and the project would be considered a minor source of pollution. However, if the gas turbine is included, the facility would still be a minor source of pollution at under 100 tons a year. With regard to water usage, Ms. Benedetti said that nonpotable water can be used and noted the company would not use more than 100 gallons a minute.

Advanced Refining Concepts, LLC

At the third meeting on January 19, 2010, Peter Gunnerman, Partner and Director, Advanced Refining Concepts, LLC (ARC), testified that he has been involved with the alternative energy business for 23 years and his family has been in the business for more than 50 years. He reported that ARC's technology, ClearRefining, and its product, GDiesel, were developed, financed, and researched in Nevada. Additionally, the company's equipment is manufactured in this State. Mr. Gunnerman further reported that ARC is based in Reno, Nevada, and has a development facility and an equipment assembly plant in Sparks, Nevada. The company's first commercial fuel production facility is currently being constructed in the Tahoe-Reno Industrial Center in Storey County.

Mr. Gunnerman outlined information on the company's mission to convert natural gas and other biogases into the world's cleanest liquid hydrocarbon fuel, reduce dependency on foreign oil imports, and provide clean fuels that do not need government incentives or subsidies. The technology of ClearRefining, a pollution-free, closed-loop refining system, produces no effluents or air emissions. GDiesel, which surpasses United States standards for high-quality No. 1 diesel, does not require modifications to vehicles or power-generating equipment, and can be sold at a price that is competitive to No. 2 diesel fuel.

The Peru Heights facility in Storey County will have a production capacity of 100,000 gallons of GDiesel fuel per day. The Tuscarora Pipeline is ARC's source for natural gas and enough natural gas is available on the site to produce up to 200,000 gallons of GDiesel a day in a second phase. Future plans include expanding the benefits of Clear Refining to the crude oil market, and work on GJet for military applications and bio oils such as canola oil that can be upgraded with a mixture of natural gas to make future fuels or fuel additives.

K2 Energy Solutions, Inc.

The fourth meeting, on April 20, 2010, featured a presentation by Johnnie Stoker, Ph.D., Chief Executive Officer, K2 Energy Solutions, Inc. Dr. Stoker stated that K2 Energy Solutions was founded in 2006 in Henderson, Nevada, with 4 employees and currently has over 30 employees. He noted that their technical team was the first to commercialize a lithium ion phosphate battery in 2001 at Valence Technology before they moved on and started K2 Energy Solutions. The company was started in southern Nevada because of the availability of technical resources, the business climate, and the right conditions for producing and using batteries. Dr. Stoker stated that the battery industry is huge, and K2 Energy Solutions' next expansion would produce only enough batteries for 3,000 electric cars annually. Dr. Stoker discussed K2 Energy Solutions' current projects, including the development of a one megawatt-hour grid storage battery, a research and development cell development laboratory, and the development of a large format cell.

Dr. Stoker stated that to attract businesses, Nevada should demonstrate the availability of technical people, create a cluster of technology, and show support for high-tech. He noted that the company is paying for the research and development and that is where government funding helps so it can afford to do the research and development and build a demonstration unit. Dr. Stoker noted that K2 Energy Solutions is looking for start-up help and the recognition that it has real technology. He further stated that the tax base in Nevada is a great incentive but Nevada has to find a better way to sell it.

Biodiesel of Las Vegas

At the final informational meeting on June 1, 2010, Josh Griffin of GCG made a presentation on behalf of Biodiesel of Las Vegas. Mr. Griffin provided an overview of biodiesel and discussed the issue of warranties and how biodiesel fuel affects warranties. Mr. Griffin indicated that Biodiesel of Las Vegas is proposing that the Committee consider a biodiesel mandate for Nevada; and amend the statutory definition of biodiesel to differentiate between biodiesel and petroleum diesel. He also recommended a statutory amendment to create a distinct taxation definition of biodiesel.

B. REVIEW OF LEGISLATIVE EFFICIENCY AND CONSERVATION PROGRAMS

During the 2009 legislative hearings on energy efficiency and conservation measures, it became apparent that some energy policy initiatives from prior sessions had been only partially

implemented or allowed to lapse. To rectify this development and also to solicit ongoing input from agencies charged with administering programs, the Committee was charged with reviewing existing legislative mandates and overseeing implementation of the 2009 enactments. To this end, various governmental entities were requested to provide progress reports. Investor-owned utilities also provided updates on their implementation of various legislatively established energy programs. A total of 16 reports were received, occurring at every Committee meeting except for the final work session.

The following legislative measures were the subject of progress reports. More detail on these reports is available in the Committee minutes which can be accessed on the Internet at: <http://leg.state.nv.us/Interim/75th2009/Committee/Scheduler/committeeIndex.cfm?ID=56>.

Senate Bill 152

Referred to throughout the 2009 Session as the “Green Jobs” bill, Senate Bill 152 (Chapter 490, *Statutes of Nevada 2009*) requires the Department of Employment, Training and Rehabilitation and the Housing Division of the Department of Business and Industry to establish contractual relationships with one or more nonprofit collaboratives. The purpose of the contracts is to create new energy efficiency jobs and provide job training for residential weatherization, energy retrofit applications, or renewable energy plants. The bill specifies the requirements for a collaborative, which include entering into written agreements with such entities as a labor management agency or other affiliated agency that has established an apprenticeship program approved by the State Apprenticeship Council, and a community college or other institution of higher education.

To the extent money is available, funding for job training must include the cost of tuition and supplies and may include a cost-of-living stipend. Each contractor awarded a contract to perform residential weatherization using federal funds must pay prevailing wages and offer employees and their dependents health care coverage as specified in the bill.

Within 90 days after the effective date of the bill, the State Public Works Board, the board of trustees of each school district, and the Board of Regents of the University of Nevada shall identify and prioritize projects in accordance with the provisions of the bill and provide a report to the Interim Finance Committee (IFC) regarding these projects.

At the Committee’s first meeting on November 3, 2009, representatives of the Board of Regents of the University of Nevada, the State Department of Conservation and Natural Resources, the Housing Division of the Department of Business and Industry, the Department of Employment, Training and Rehabilitation, and the State Public Works Board updated the Committee on their respective duties under S.B. 152 and their progress in meeting those assignments.

Senate Bill 188

Senate Bill 188 (Chapter 414, *Statutes of Nevada 2009*) expresses the intent of the Legislature to build a market for solar thermal systems to reduce the demand for natural gas in homes, businesses, and other buildings through the installation of at least 3,000 solar hot water systems in Nevada by 2019. The bill requires the Public Utilities Commission of Nevada to establish the Solar Thermal Systems Demonstration Program for private residential, public, school, small businesses, and other property.

Senate Bill 188 directs the PUCN to adopt regulations establishing requirements for participation; specifications for design, energy output, and installation; program milestones; and a rebate program.

The PUCN reported its progress during the course of the S.C.R 19 study on November 3, 2009, and again on April 20, 2010. After addressing a number of technical issues surrounding solar thermal units, the PUCN adopted the regulations effective April 20, 2010 (LCB File No. R210-09), though the utilities will probably actually have the program underway in late 2010.

On a related matter, Susan Fisher, Fisher Consulting, and Thomas Husted, Chief Executive Officer, Valley Electric Association, made a presentation on April 20, 2010, outlining Valley Electric Association's program to install up to 5,000 solar hot water heating systems for the cooperative's nearly 17,000 members. The business plan is to sell the systems at cost with 0 percent financing for up to 14 years, saving member-owner ratepayers an estimated \$34 million over 20 years.

Senate Bill 332

Senate Bill 332 (Chapter 464, *Statutes of Nevada 2009*) adopts a legislative finding that the State's environment, particularly the quality of its air, may be improved, especially in metropolitan areas, through the use of alternative fuels and clean vehicles. The legislative finding also notes that fleets operated by State agencies and local governments can reduce air contaminants through the use of cleaner burning alternative fuels and the acquisition of clean vehicles.

The bill revises provisions governing the use of alternative fuels by certain fleet vehicles. A fleet is defined as 50 or more motor vehicles that are registered in the same county and are under the common ownership and control of a State agency or local government.

Senate Bill 332 requires the State Environmental Commission to adopt regulations concerning standards and requirements for clean vehicles and motor vehicles that use alternative fuels, and the acquisition of such vehicles that are operated in certain counties, including recordkeeping and reporting requirements concerning those vehicles.

The bill revises the program that provides incentives to encourage certain persons to use clean burning fuels in motor vehicles to include, instead, incentives to acquire clean vehicles and motor vehicles that use alternative fuels.

Senate Bill 332 includes ethanol and methanol within the definition of motor vehicle fuel, which requires ethanol to be taxed in the same manner and at the same rate as gasoline. Dealers, suppliers, exporters, and transporters of ethanol and methanol are subject to the same requirements and penalties applicable to dealers, suppliers, exporters, and transporters of gasoline, including the requirement concerning licensing, bonding, recordkeeping, and the collection of taxes. The bill also provides for the taxation of biodiesel, biodiesel blends, and a petroleum-based product as special fuels.

Representatives of the Division of Environmental Protection, State Department of Conservation and Natural Resources, provided an update on their implementation of S.B. 332 at the December 15, 2009, Committee meeting. Hearings on the proposed regulations were underway and ultimately regulations were adopted, effective July 22, 2010 (LCB File No. R022-10).

The witnesses also provided valuable information regarding the scope of the December 7, 2009, decision of United States Environmental Protection Agency (EPA) Administrator Lisa Jackson, in which the EPA concluded that elevated concentrations of greenhouse gas (GHG) in the atmosphere threatens both the public health and the environment for current and future generations. The agency also found that the combined emissions of GHGs from new motor vehicles and new motor vehicle engines are contributing to the buildup of GHGs in the atmosphere, and thus to the climate change problem.

This endangerment finding is the result of years of litigation, dating from October 1999, and a determination by the United States Supreme Court in April of 2007 that GHGs are air pollutants covered by the federal Clean Air Act and that EPA must determine whether or not emissions of GHGs from new motor vehicles cause or contribute to air pollution, which may reasonably be anticipated to endanger public health or the environment.

Senate Bill 339

Senate Bill 339 (Chapter 225, *Statutes of Nevada 2009*) requires the Colorado River Commission of Nevada (CRC) to review and analyze available information, studies, and reports to assess the feasibility of constructing a hydrokinetic generation project below Hoover Dam.

If such a project is determined to be feasible, the CRC will present its findings to the relevant federal agencies and request those agencies to determine whether to develop a hydrokinetic facility. The CRC is required to submit a report to the Director of the LCB for transmittal to the Legislative Committee on Public Lands concerning the feasibility of the project.

Representatives of the CRC updated the Committee at its November 3, 2009, meeting. The report was duly filed June 25, 2010, and concluded that such a project is not feasible with current technology. The report is available at: <http://leg.state.nv.us/Interim/75th2009/Committee/Studies/Energy/Other/100625CRCReporttoLCBPublicLandsSB3392009.pdf>.

Senate Bill 358

Senate Bill 358 (Chapter 321, *Statutes of Nevada 2009*) creates the Renewable Energy and Energy Efficiency Authority to foster the State's policy of increasing energy efficiency and renewable energy development, and transfers some responsibilities from the Office of Energy and the Task Force for Renewable Energy and Energy Conservation to the Authority. The bill creates the State and Local Government Panel on Renewable and Efficient Energy and the New Energy Industry Task Force to advise the Authority. The bill also eliminates the Task Force for Renewable Energy and Energy Conservation.

Senate Bill 358 revises provisions concerning the Solar Energy Systems Incentive Program, the Wind Energy Systems Demonstration Program, and the Waterpower Energy Systems Demonstration Program. The bill requires local governmental entities to develop plans to retrofit public buildings and facilities to make them more energy efficient and to employ renewable energy systems. It also authorizes them to utilize bonding programs to help fund installation of renewable energy and energy efficiency systems and public safety projects.

The bill increases the RPS to 25 percent by 2025 and increases the minimum amount of solar energy required to meet the RPS from 5 percent to 6 percent by 2016. It also provides incentives for increased deployment of distributed solar generation facilities.

The Division of Welfare and Supportive Services, Department of Health and Human Services, must transfer certain unspent funds generated by the Universal Energy Charge to the Housing Division, Department of Business and Industry, if directed to do so by the Legislature. The IFC may determine an amount of money received pursuant to the American Recovery and Reinvestment Act of 2009 to be used by the Chief of the Buildings and Grounds Division of the Department of Administration to track the use of energy in buildings owned by the State.

The bill authorizes the PUCN to implement a reduced rate for low-income residential customers under certain conditions and increases the role of the Nevada System of Higher Education in educating students to serve the renewable energy industry in this State.

Senate Bill 358 requires the PUCN to adopt regulations requiring an electric utility to disclose information to customers regarding safe disposal and recycling of certain electronic waste. The PUCN must also adopt regulations authorizing an electric utility to recover an amount based on the measurable and verifiable effects of energy efficiency and conservation programs approved by the PUCN.

At the Committee's first meeting on November 3, 2009, representatives of the Board of Regents of the University of Nevada; the Division of Welfare and Supportive Services, Department of Health and Human Services; the Buildings and Grounds Division of the Department of Administration; the Office of Energy, Office of the Governor; the Renewable Energy and Energy Efficiency Authority; and the PUCN updated the Committee on their respective duties under S.B. 358 and their progress in meeting those assignments.

Additional reports were made on December 15, 2009, by representatives of the City of Henderson, Nevada, and on January 19, 2010, by the Nevada Energy Commissioner.

Senate Bill 395

Senate Bill 395 (Chapter 480, *Statutes of Nevada 2009*) exempts electric generating plants with a nameplate capacity of 70 megawatts or less from the permitting requirements of the Utility Environmental Protection Act (UEPA). The bill also expands the permitting requirements of the UEPA to electric generating plants located within a county with a population of 100,000 or more (Clark and Washoe Counties) and to gas transmission lines, storage plants, and compressor stations outside an incorporated city, in a county with a population of 100,000 or more.

The measure also requires the Chief of the Purchasing Division of the Department of Administration to adopt energy efficiency standards for State agencies to follow when purchasing new appliances, equipment, and lighting. As of August 2010, these regulations have not been adopted. In addition, S.B. 395 requires the State Public Works Board to adopt energy and water efficiency standards for use in the design and construction of State buildings and projects.

Finally, beginning with the 2012 model year, S.B. 395 requires licensed vehicle dealers in Nevada to ensure that each new vehicle they offer for sale is accompanied by a prominent disclosure of the estimated amount of carbon dioxide it emits, unless that information is not available.

Assembly Bill 387

As noted in the "Background" portion of this Bulletin, the transmission system is a vital part of the State's energy infrastructure. The best locations for renewable energy sources such as geothermal, wind, and solar are often located at a distance from electric customers. Transmission lines are needed to bring the power produced at these sites to customers. These transmission systems can be expensive and also raise environmental, aesthetic, and right-of-way issues. The vast majority of Nevada is owned by the federal government and this poses special issues for erection of transmission lines which must often traverse these federal areas. Nevada lacks a north-south interconnection of its grid system, which limits the efficient transfer of electricity from one region to another and impedes the development of renewable resources that cannot reach customers in distant markets. The new transmission project

agreement signed on August 20, 2010, mentioned in the “Background” section will begin the resolution of this longstanding problem.

Assembly Bill 387 (Chapter 246, *Statutes of Nevada 2009*) addresses some of these issues by revising provisions relating to the triennial resource plans of electric utilities. It directs the PUCN to designate renewable energy zones where resources are sufficient to develop generating capacity and where transmission constrains the delivery of electricity to customers. The bill also directs the PUCN to require an electric utility to include a plan for construction of transmission facilities to serve the zones in its resource plan.

In its review of an electric utility’s resource plan, A.B. 387 requires the PUCN to consider the level of financial commitment from developers of renewable energy projects in each zone. The PUCN may accept a transmission plan for a given zone if the construction of transmission facilities would assist the utility in meeting the renewable portfolio standard. The Committee received a status report on the implementation of A.B. 387 from the PUCN at its first meeting on November 3, 2009.

The Committee also heard presentations on the importance of transmission, obstacles to siting and permitting, and the status of several major proposed projects at its meetings on January 19, April 20, and June 1, 2010.

Assembly Bill 522

As the nation attempts to wean itself from the use of fossil fuels for economic and environmental reasons, states with rich endowments of renewable resources have begun competing for energy projects and energy companies. The current economic recession has given additional impetus to this drive since green industry and green jobs are seen as a major pathway out of the financial and budgetary crisis. One of the key tools states employ to attract industry development is preferential tax treatment for new or expanding companies. The competition between states in offering incentives has been vigorous but there is growing concern that states may not always realize sufficient value in return for favorable tax treatment. Assembly Bill 522 (Chapter 377, *Statutes of Nevada 2009*) is Nevada’s effort to restore balance to the incentive program.

The bill authorizes a person who wishes to locate a renewable energy facility in Nevada to apply for a partial abatement of local sales and use taxes, property taxes, or both. The Nevada Energy Commissioner must approve the application if the facility will continue in operation and meet eligibility requirements for at least ten years, receives no funding for construction or land from a government entity in Nevada, generates financial benefits that exceed the loss of tax revenue, and meets specific employment and wage standards. However, the Commissioner must not approve an application for abatement of property taxes for a geothermal facility unless the affected county approves the application.

Assembly Bill 522 authorizes a facility to receive an abatement of 55 percent of property taxes for 20 years. The bill provides for a three-year abatement of local sales and use taxes, during which the facility is required to pay sales and use taxes at the rate of 2.6 percent. After July 1, 2011, the rate changes to 2.25 percent. An abatement terminates if the facility ceases to meet eligibility requirements, and no person may receive an abatement after June 30, 2049.

The bill includes provisions for the allocation and distribution of taxes collected from a facility receiving an abatement to State and local units of government. After July 1, 2011, A.B. 522 directs a portion of the property taxes from a facility into a fund to offset the electric bills of customers of utilities that are subject to the Renewable Portfolio Standard.

This measure also creates the Fund for Renewable Energy, Energy Efficiency and Energy Conservation Loans and the Account for Set-Aside Programs, which the Director of Nevada's Office of Energy may use only for purposes set forth in the federal American Recovery and Reinvestment Act of 2009. The Director may make loans from the Fund for the construction of renewable energy projects at an interest rate not to exceed 3 percent. The Legislature or, if the Legislature is not in session, the IFC must approve the commitment of any money from the Fund.

Beginning at its first meeting on November 3, 2009, and continuing with presentations during the December 15, 2009, and January 19, 2010, meetings, the Committee paid particular attention to how A.B. 522 was being implemented. Reports were made by the Office of Energy, Office of the Governor, and the Nevada Energy Commissioner.

Nevada Revised Statutes Chapter 701B Programs

The Legislature has created a number of renewable energy incentive programs to foster development and deployment of various kinds of renewable energy resources and technologies. These programs include the Solar Energy Systems Incentive Program (see NRS 701B.010 through 701B.290), the Solar Thermal Systems Demonstration Program (discussed above under S.B. 188 and codified at NRS 701B.300 through 701B.345), the Renewable Energy School Pilot Program (see NRS 701B.350), the Wind Energy Systems Demonstration Program (see NRS 701B.400 through 701B.650) and the Waterpower Energy Systems Demonstration Program (see NRS 701B.700 through 701B.880). NV Energy plays a key role in the administration of these programs so the company was asked to provide an update on the progress of these initiatives and to make recommendations for improvements in the future. The Committee heard this presentation at the first meeting on November 3, 2009.

C. FEED-IN TARIFFS

While the NRS 701B programs are proving successful, they have remained at a relatively small scale up to the present. According to testimony, other countries have had spectacular success with incentivizing larger deployment of renewable energy by using so-called feed-in tariffs (FITs). For example, according to a National Renewable Energy Laboratory study, Germany

began implementing FIT legislation in 1991. By the end of 2007, Germany had installed more than 22,000 MW of wind power and over 3,800 MW of solar, resulting in 250,000 renewable energy jobs, all at an average cost of about \$3.82 per household per month, accounting for about 5 percent of the total average electricity cost. There have been some problems with FITs though; Spain also had an extremely successful FIT program but poor design resulted in too rapid expansion of the solar market, followed by retrenchment and stagnation.

There are complex issues surrounding the adoption of FITs in the United States, including some potential obstacles under existing FERC rules. However, because of the potential for success with a properly designed program, an increasing number of United States jurisdictions have either implemented FITs, adopted enabling legislation, or are studying FITs.

The Committee spent a considerable amount of time listening to presentations regarding the pros and cons of FITs, commencing with the first meeting on November 3, 2009, and continuing at the June 1, 2010, hearing. Among the contributors were Bob Tregilus, Co-Chair, Electric Auto Association of Northern Nevada; Sara Birmingham and Andrew Johnson, The Solar Alliance; Rebecca Wagner, Commissioner, PUCN; and Annie Carmichael, Vote Solar.

D. FINANCING OPTIONS FOR RENEWABLE ENERGY SYSTEMS

The cost of renewable energy systems has been declining due to volume increases and technological improvements. However, renewables in general remain more expensive than conventional fossil fuel systems, especially solar. Various financial incentives have been used to encourage the deployment of renewables. New financing models such as third-party ownership have emerged but, as with most innovative programs, issues arise as these fresh approaches are integrated into the existing regime. While Assembly Bill 186 (Chapter 284, *Statutes of Nevada 2009*) clarified that third-party arrangements do not constitute creation of a public utility and therefore do not require approval of the PUCN, many of the projects where third-party transactions could most effectively be utilized in Nevada do not currently qualify for State incentive programs, causing potential projects to migrate to jurisdictions where state as well as federal incentives are available. The Committee was asked to consider expanding incentive programs to larger projects where third-party arrangements might then be feasible.

The Committee also heard testimony regarding the Property Assessed Clean Energy (PACE) programs being adopted by some local governments; these programs use bonds to generate funds for renewable energy and energy efficiency improvements. Sections 18.1 through 18.9 of S.B. 358 were designed to allow use of local improvement districts for renewable energy and energy efficiency projects but apparently do not clearly establish the ability of local governments to issue bonds for such projects. The Committee discussed whether to expand these provisions to permit local governments to create a true PACE-type program.

E. ENERGY EFFICIENCY AND CONSERVATION IN BUILDINGS

The Legislature has long considered energy efficiency and conservation to be the initial step in a successful energy policy. As often noted in legislative discussions, the cheapest and cleanest watt is the one never produced.

Buildings in the United States account for 40 percent of the primary energy used in the country. According to the United States Energy Information Administration, homes and commercial buildings use 71 percent of the electricity in the country and that percentage is expected to increase to 75 percent by 2025. Nevada has one of the highest per-capita energy consumption rates in the West.

Most carbon emissions come from electricity production, a particular concern because of global warming. Electric generation also produces byproducts such as NO_x, SO_x, and mercury that pollute the environment, in addition to consuming large amounts of water, a particularly scarce and important resource in Nevada.

The Committee heard numerous presentations on energy efficiency and conservation in buildings from experts such Dr. Robert Tretiak, Business Development and Government Relations Officer, International Energy Conservation, and Dr. Stephen Wiel and Monica Brett of the Southwest Energy Efficiency Program (SWEEP) on January 19, 2010, as well as Annette Bubak, Director of Marketing and Business Development for Distinct ENERGY Performance, and Dr. Herve Mazzocco, President, RA Energie, Inc., on April 20, 2010. Lorne J. Malkiewich, Director, LCB, also provided an update on energy conservation measures in Nevada legislative facilities on the latter date.

At the April 20, 2010, meeting, the Chair asked the Committee to support a series of proposals to offer consumers more choices and to provide information to facilitate more informed choices. He noted one survey showed that 86 percent of Americans would choose one home over another based on energy efficiency; however, the survey revealed that 78 percent of Americans who just bought property said that nobody talked to them about energy efficiency. He recommended requiring residential builders who have projects of 25 or more homes to offer renewable energy and energy efficiency upgrades. He also recommended requiring the Real Estate Commission, the Commissioner of Mortgage Lending, and the Commission of Appraisers of Real Estate to adopt regulations for continuing education covering their respective licensees. These regulations would require completion of a course in energy efficiency and conservation or green mortgages and financing, as appropriate to each profession.

F. ELECTRIC VEHICLES AND TRUCK STOP ELECTRIFICATION

Nevada imports virtually all of its transportation fuels and they are almost exclusively fossil fuels. This situation poses both economic and environmental problems. During the 2009 Session, the Legislature began to emphasize the linkage between transportation and

energy issues. Discussions of mass transit systems, alternative fuel vehicle fleets, and the potential for domestic production of some forms of biofuels led to proposals to spur support for cleaner vehicles, especially hybrid and all-electric cars, truck stop electrification, increased biofuel use, and light rail systems.

According to testimony, truck idling results in air pollution and Nevada has a large amount of truck traffic. Equipping truck stops with electric systems that can be connected to diesel rigs reduces emissions and diesel fuel consumption, helping advance our national effort at avoiding foreign oil dependence. So can wider use of hybrid electric and all-electric vehicles. Additionally, it is important to encourage electric utilities to see vehicles as a new customer base and advance their technical ability to serve them so that Nevada has adequate recharging infrastructure to service the new vehicles as they become more ubiquitous. The Committee heard testimony about the effects of truck idling and also about the potential for deployment of electric vehicles on December 15, 2009, from Bob Tregilus, Co-Chair, Electric Auto Association of Northern Nevada.

G. EMISSION AND FUEL USE IMPROVEMENTS THROUGH TIRE CHECKS

As an outgrowth of the discussions on air quality improvements under S.B. 332, the witnesses from the Division of Environmental Protection, State Department of Conservation and Natural Resources, were asked to comment on California's program requiring businesses that provide engine repair, oil change, or brake services to check tire pressure as part of the service. Additionally, they were asked about the possibility of implementing a similar program in Nevada. They discussed the California program and also summarized some discussions they have had about such a program with representatives of the Nevada smog check industry. Some of these representatives expressed concerns about mandatory tire inflation checks because of the time required to perform the checks, the associated loss of profit which may result, and the potential liability posed by adjusting inflation pressures.

Data for California from other sources indicate about 38 percent of vehicles driven there have severely underinflated tires, which causes greater gas consumption (and hence, more emissions) as well as safety issues. Statistics from California indicate that its tire checking program will eliminate 700,000 metric tons of greenhouse gases, save 75 million gallons of gasoline, and extend tire life by 4,200 miles.

H. UTILIZING PUBLIC ELECTRICAL LOAD FOR ECONOMIC DEVELOPMENT

The Committee considered an innovative proposal from one of its members designed to provide an alternative form of incentive for economic development. Electricity is an integral part of nearly every business endeavor; the cost of power is often a determining factor in business planning. At the same time, particularly during difficult economic conditions such as those currently affecting Nevada and the nation, state and local governments find it necessary to reduce financial incentives for business expansion.

Senator Randolph Townsend outlined a proposal authorizing State or local governments to enter into purchase power agreements or other suitable arrangements pursuant to which the governmental entities, separately or jointly, could contract with electric power producers for a portion of the governmental entities' electric load to be supplied from renewable energy sources constructed within Nevada. Though the cost of some (but not all) forms of renewable energy is initially higher than power produced with fossil fuel, the future price of renewable power may actually be lower because there is no fuel cost. This characteristic of renewable energy may allow it to supply customers with long-term power at fixed prices since fuel price volatility is avoided.

Under the proposal, governmental entities in turn would be authorized to allow qualifying businesses to access portions of the power produced under such arrangements at a fixed rate for a specified number of years as an economic development tool to attract new enterprises to locate in Nevada or to incentivize existing businesses in Nevada to expand their operations.

IV. FINDINGS AND RECOMMENDATIONS

After considerable information from many presentations and discussions during the course of the study, the Committee met in work session on June 29, 2010. The Committee considered a total of 14 recommendations; from those proposals, the Committee adopted 6, combining them into 4 bill draft requests as follows:

A. EFFICIENCY CHARACTERISTICS OF PUBLICLY LEASED OFFICE SPACE

Energy efficiency characteristics of a building significantly affect the cost of operating the facility. Nevada desires to use its tax-generated revenue in the most efficient manner and to demonstrate by example the benefits of conserving precious natural resources as well as preserving environmental quality. The purpose of NRS 331.095, originally enacted in 1993, is to track the use of energy in buildings owned and leased by the State. The first step in controlling energy usage is to know how much the State is using and where. The next step is to ensure buildings used by the State are as energy efficient as possible, including buildings leased by the State. The State should also carefully consider whether it is more economical in the long term to build and operate its own facilities rather than to lease private buildings. Discussion centered around the necessity of considering all factors affecting the cost of leasing or building State facilities and that while energy costs are an important component of overall cost, they are not the sole determinant. Discussion also included concerns about the costs associated with the recommendations, the availability of funds to accomplish the recommendations, and the possibility of renegotiating existing leases at a lower price.

Therefore, the Committee recommended that the Legislature:

RECOMMENDATION NO. 1—Draft a bill amending Chapter 331 of Nevada Revised Statutes (NRS) to provide that the Chief of the Buildings and Grounds Division of the Department of Administration shall consider

the energy efficiency characteristics and energy costs of prospective leased office rooms outside of State buildings for the use of State officers and employees before entering into or renewing a lease. To the extent practicable, the Chief shall only enter into leases for space that meet or exceed the minimum standards for the conservation of energy and energy efficiency in buildings established by the Nevada Energy Commissioner as provided in NRS 701.220. The Chief, in consultation with the State Public Works Board, shall consider the feasibility, practicability, and fiscal impact of constructing office space for State officers and employees instead of leasing such space, prior to entering into or renewing a lease. (BDR 27-221)

B. EMISSION AND FUEL USE IMPROVEMENTS THROUGH TIRE CHECKS

Estimates for Nevada are not available, but estimates for California indicate that, with proper tire inflation, California would eliminate 700,000 metric tons of greenhouse gases, save 75 million gallons of gas, extend tire life by 4,700 miles, and save each driver \$12 a year. About 38 percent of California's vehicles have severely underinflated tires, which use more gas and cause handling and safety issues.

A simple procedure such as checking tire pressure can save significant fuel, avoid harmful emissions, extend tire life, and prevent accidents. Evidence indicates many drivers either are not aware of the benefits of performing such checks or fail to perform them. Professionals at vehicle service companies are in a unique position to perform these checks as part of their routine procedures, thus achieving significant energy efficiency and environmental goals, and helping safeguard their customers.

There was discussion regarding the benefits of properly inflated tires, but concern about the role of the government in regulating and mandating that tire pressure be checked. Ultimately, it was decided that, as a matter of general public safety, it would be beneficial to have a full hearing on the issue and understand what the impacts would be. Requiring the adoption of regulations regarding tire checks would give industry representatives an opportunity to provide input about whether mandatory tire pressure checks would be a burden on their business and what the cost would be to them. These concerns could then be weighed against safety and environmental factors and an appropriate balance struck.

Therefore, the Committee recommended that the Legislature:

RECOMMENDATION NO. 2—Draft a bill amending Chapter 445B of NRS requiring the Division of Environmental Protection, State Department of Conservation and Natural Resources, to adopt regulations implementing a program to require engine repair, oil change, and brake service companies to perform tire pressure checks as part of any service they perform. (BDR 43-220)

C. ENERGY EFFICIENCY IN RESIDENTIAL BUILDINGS

Testimony indicated homes and commercial buildings use 71 percent of the electricity in the United States and this figure is expected to increase to 75 percent by 2025; yet a recent survey showed that 78 percent of the people who bought homes said that nobody had spoken to them about energy efficiency when they purchased their homes. Given the large percentage of energy consumed by buildings and the importance of educating homebuyers and homeowners to the benefits of energy efficiency and conservation, the Committee believes it is imperative to provide information and choices that will allow them to maximize their energy options.

Therefore, the Committee recommended that the Legislature:

RECOMMENDATION NO. 3—Draft a bill amending Chapter 624 of NRS requiring certain contractors to offer upgrades for renewable energy and energy efficiency; requiring certain contractors assisting buyers in obtaining financing to offer, or work with lenders that offer, energy efficient mortgages; requiring licensees of the Real Estate Division of the Department of Business and Industry to make certain information about energy efficiency in residential property available to each party to a real estate transaction; revising continuing education requirements relating to energy efficiency for real estate brokers, real estate broker-salespersons, real estate salespersons, mortgage brokers, and certified or licensed real estate appraisers; and providing other matters properly relating thereto. (BDR 54-219)

D. USE OF BIOFUELS

During the course of the study, the Committee heard from several Nevada-based biofuel manufacturers, whose comments are contained in the Committee's minutes and summarized earlier in this document. Their testimony highlighted biofuels' many environmental advantages. The manufacturers also stressed that the use of biofuels helps reduce dependence on foreign sources of energy while promoting local job creation and capital investment, a major focus of legislative policy initiatives.

Therefore, the Committee recommended that the Legislature:

RECOMMENDATION NO. 4—Draft a bill amending Chapter 366 of NRS requiring that all diesel fuel sold or offered in the State of Nevada must contain at least 5 percent biodiesel by volume, one year after in-state production volume of 30 million gallons of biodiesel has been reached and sustained for three months on an annualized basis. All diesel fuel sold or offered in the State of Nevada must contain at least 10 percent biodiesel by volume, one year after in-state production volume of 60 million gallons of biodiesel has been reached and sustained for three months on an annualized basis, provided vehicle manufacturers recognize engine warranties

associated with the use of biodiesel blends of 10 percent or more; amending NRS 366.022 to more accurately comply with national standards by specifying that biodiesel is defined as mono-alkyl esters of long-chain fatty acids derived from vegetable oils or animal fats which conform to American Society for Testing and Materials D6751 specifications for use in diesel engines. Additionally, amending NRS 366.190 to include a distinct taxation definition for biodiesel. (BDR 32-218)

V. APPENDICES

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APPENDIX A

Senate Concurrent Resolution No. 19 (File No. 99, *Statutes of Nevada 2009*)

Senate Concurrent Resolution No. 19
(File No. 99, *Statutes of Nevada 2009*)

Senate Concurrent Resolution No. 19—Committee on Energy,
Infrastructure and Transportation

FILE NUMBER.....

SENATE CONCURRENT RESOLUTION—Directing the
Legislative Commission to appoint a committee to conduct
an interim study relating to the production and use of energy
in the State.

WHEREAS, Energy, in terms of electric power production,
heating and transportation, is fundamental to every aspect of
Nevada's economy and competitiveness; and

WHEREAS, Power demands continue to grow as Nevada's
population and business infrastructure grow, and although growth in
the State, along with the nation, has temporarily slowed, historically,
national and local economies rebound robustly from such periods;
and

WHEREAS, Energy projects can stimulate Nevada's economic
growth and have particular application in rural areas; and

WHEREAS, While an estimated \$11 billion per year is spent on
energy and transportation fuel, a great deal of this is spent outside of
this State, and studies estimate that for every such dollar retained
within the State, there is a six-fold multiplier effect in the State's
economy; and

WHEREAS, More efficient utilization of energy frees public and
private funds for use in other areas such as education, infrastructure,
public health and public safety; and

WHEREAS, Energy production and consumption profoundly
affect the environment, including air quality and water supplies, as
well as public health; and

WHEREAS, Nevada Legislators who have extensive energy
experience will begin to term-limit after this Session, so there is a
need to educate additional Legislators before those with the most
expertise are gone; and

WHEREAS, There has not been a legislative energy study since
1997-1998, yet energy technologies, needs and issues have changed
significantly in the last decade; and

WHEREAS, Nevada is poised to build thousands of megawatts of
electrical generation plants which will serve as the backbone of the
State's power sector for decades, and the useful life of such plants is
approximately 40 years, so decisions made now will determine the
course of energy policy for nearly the next half-century; now,
therefore, be it



RESOLVED BY THE SENATE OF THE STATE OF NEVADA, THE ASSEMBLY CONCURRING, That the Legislative Commission is hereby directed to appoint a committee, composed of three members of the Senate and three members of the Assembly, to conduct an interim study concerning energy production and use in the State; and be it further

RESOLVED, That the study must include, without limitation:

1. A review of the statutes and regulations of this State relating to energy production, use and transmission, energy efficiency, including energy efficiency in public buildings, the use and availability of transportation fuels and facilities, including alternative fuels, and motor vehicle electrification;

2. A review of the extent of biofuel production in Nevada and prospects for increasing production at existing facilities and introducing new types of such fuels, including biodiesel, ethanol from nonfood sources, algae-based fuel and other emerging fuel technologies;

3. A review of existing state energy and energy efficiency programs and their implementation and effectiveness, with periodic progress reports from the agencies and entities charged with implementation of these programs;

4. A review of new energy and energy efficiency programs enacted during the 75th Session of the Nevada Legislature and their implementation and effectiveness, with periodic progress reports from the agencies and entities charged with implementation of these new programs;

5. Receipt of continued input from interested parties and the public on ways existing and new programs can be further improved;

6. Solicitation of recommendations for additional new programs for future legislative consideration and potential enactment;

7. A review of existing and emerging green technologies, including smart grid technology, and their suitability for deployment in Nevada, including consideration of obstacles to deployment and methods to eliminate or minimize those obstacles; and

8. A review of efforts to attract more green industries and jobs to Nevada and exploration of ways to expand existing green businesses and jobs in Nevada; and be it further

RESOLVED, That any recommended legislation proposed by the committee must be approved by a majority of the members of the Senate and a majority of the members of the Assembly appointed to the committee; and be it further



- 3 -

RESOLVED, That the Legislative Commission shall submit a report of the results of the study and any recommendations for legislation to the 76th Session of the Nevada Legislature.

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APPENDIX B

Suggested Legislation

The following Bill Draft Requests will be available during the 2011 Legislative Session, or can be accessed after “Introduction” at the following website: <http://leg.state.nv.us/Session/76th2011/BDRList>.

- | | |
|------------|--|
| BDR 32-218 | Makes various changes concerning the use and taxation of biodiesel. |
| BDR 54-219 | Enacts provisions relating to energy efficiency, renewable energy and building construction. |
| BDR 43-220 | Requires the Division of Environmental Protection of the State Department of Conservation and Natural Resources to adopt certain regulations relating to tire pressure for motor vehicles. |
| BDR 27-221 | Requires the Chief of the Buildings and Grounds Division of the Department of Administration to consider certain factors when entering into and renewing leases of real property. |

