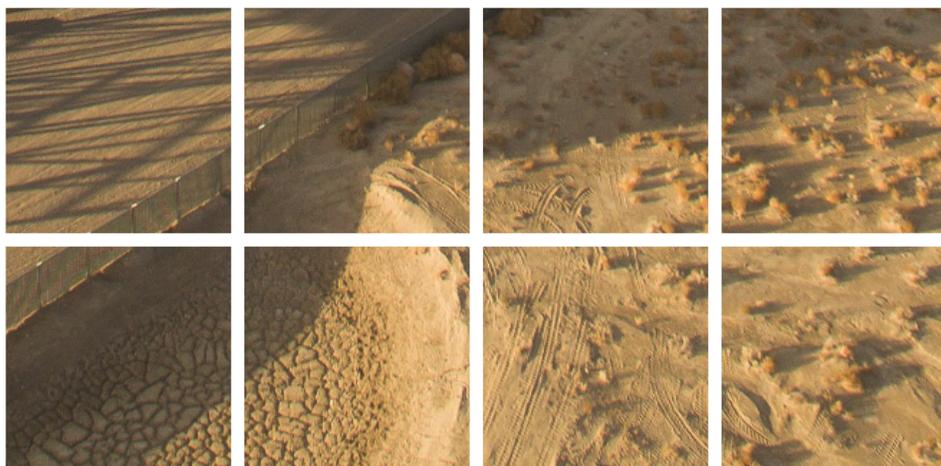




# State of Nevada Governor's Office of Energy



2017  
Status of  
Energy  
Report

# Governor’s Office of Energy

**Brian Sandoval, Governor**  
**Angela Dykema, Director**  
755 N. Roop Street, Suite 202  
Carson City, Nevada 89701  
Tel: (775) 687-1850

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## Mission

The mission of the Governor’s Office of Energy is to ensure the wise development of Nevada’s energy resources in harmony with local economic needs and to position Nevada to lead the nation in renewable energy production, energy conservation, and the exportation of energy. The Governor’s Office of Energy implements the laws of the State as defined in Nevada Revised Statute chapters 701 and 701A; manages energy-related programs; facilitates cooperation between key stakeholders; advises the Governor on energy policy; and collaborates with our local, regional, and federal partners to ensure a reliable and sustainable energy system.

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# 2016 Nevada Electric Energy Consumption



Electric energy consumption in Nevada consists of customers of the major providers listed below. NV Energy (Sierra Pacific Power Co. and Nevada Power Co.) provides 82.7 percent of the state’s electrical power; 7.6 percent is provided by retail power marketers; 5.4 percent by electric cooperatives; 1.9 percent by the Colorado River Commission of Nevada, and the remaining by businesses, general improvement districts, municipal utilities, and others. While some of the service areas of several service providers extend into neighboring states, the electric energy consumption estimates presented in the table below are for Nevada only.

**Investor Owned 29,920,031 MWh**

Nevada Power Co. <sup>[1]</sup>	21,581,533
Sierra Pacific Power Co. <sup>[1]</sup>	8,338,498

**Retail Power Marketer 2,729,156**

Exelon Generation Company <sup>[1]</sup>	43,016
Shell Energy North America <sup>[1]</sup>	1,428,623
Silver State Energy Association <sup>[1]</sup>	1,037,031
Tenaska Power Services <sup>[1]</sup>	220,486

**Cooperatives 1,957,823**

Harney Electric Coop, Inc. <sup>[1]</sup>	111,607
Mt Wheeler Power, Inc. <sup>[1]</sup>	521,016
Plumas-Sierra Rural Elec. Coop <sup>[1]</sup>	4,167
Raft Rural Elec Coop Inc. <sup>[1]</sup>	51,295
Surprise Valley Electrification <sup>[1]</sup>	141
Valley Electric Assn, Inc. <sup>[1]</sup>	519,614
Wells Rural Electric Co. <sup>[1]</sup>	749,983

**Political Subdivision 443,254**

Aha Macav Power Service <sup>[1]</sup>	22,851
Overton Power District No 5 <sup>[1]</sup>	362,966
Lincoln County Power District No. 1 <sup>[2]</sup>	43,700
Alamo Power District No 3 <sup>[2]</sup>	13,737

**Municipal 257,762**

Boulder City <sup>[1]</sup>	156,042
City of Fallon <sup>[2]</sup>	83,354
City of Caliente <sup>[2]</sup>	10,984
City of Pioche <sup>[2]</sup>	7,382

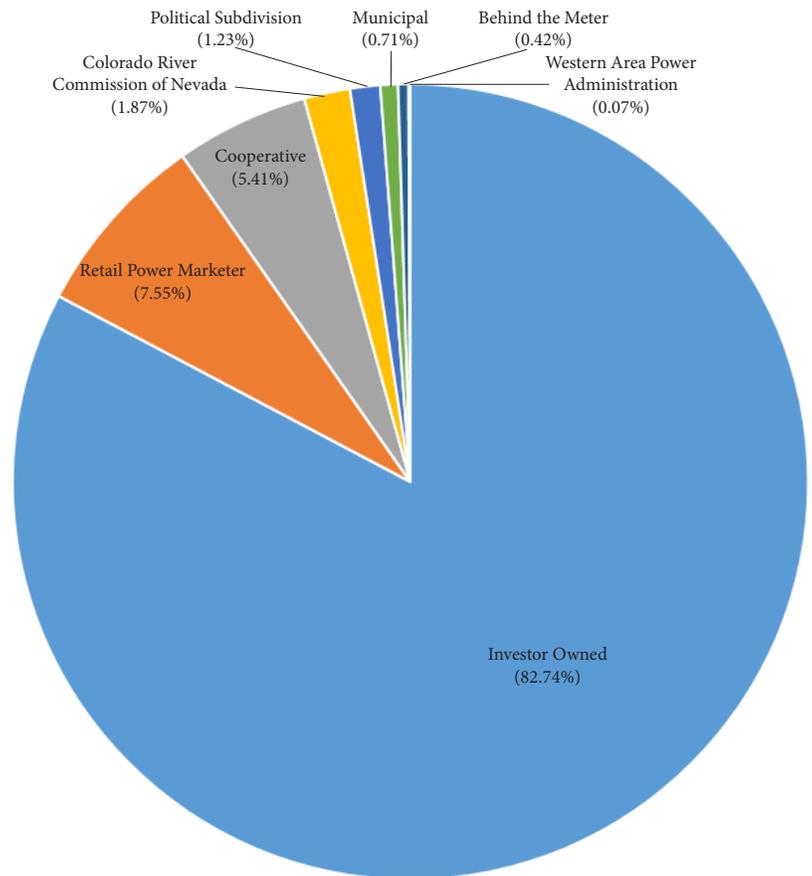
**Colorado River Comm. of Nevada<sup>[1]</sup> 675,530**

**Western Area Power Administration<sup>[1]</sup> 26,123**

**Behind the Meter 153,341**

SolarCity Corporation <sup>[1]</sup>	99,904
Spruce Finance <sup>[1]</sup>	1,059
SunEdison LLC <sup>[1]</sup>	2,336
Sunnova <sup>[1]</sup>	20,673
SunPower Capital, LLC <sup>[1]</sup>	1,555
Sunrun Inc. <sup>[1]</sup>	27,814

**Grand Total 36,163,020 MWh**



**Figure 1 - Electric Energy Consumption by Provider**

<sup>[1]</sup>Source: U.S. Energy Information Administration (EIA) 2016 Form 861 (Utility Sales)

<sup>[2]</sup>Source: EIA 2016 Form 861 (Short Form)

# Nevada's Electric Energy Generation Portfolio

As shown in Figure 2, Nevada uses several sources to generate electricity including natural gas, renewables, coal, and a small amount from fuel oil or other gas. The combination of energy resources a utility uses to create electricity is known as a resource mix, or portfolio. Currently, more than two-thirds of the State's electricity is produced by natural gas fired power plants; renewables comprise most of the remaining amount; coal still remains as Nevada phases out its coal power plants. Nevada has seen a significant increase in renewable energy production, and continues to develop its abundant renewable energy resources such as geothermal and solar for use both within the State and for exportation. Nevada has nearly doubled its renewable energy production during Governor Sandoval's administration beginning in 2011.

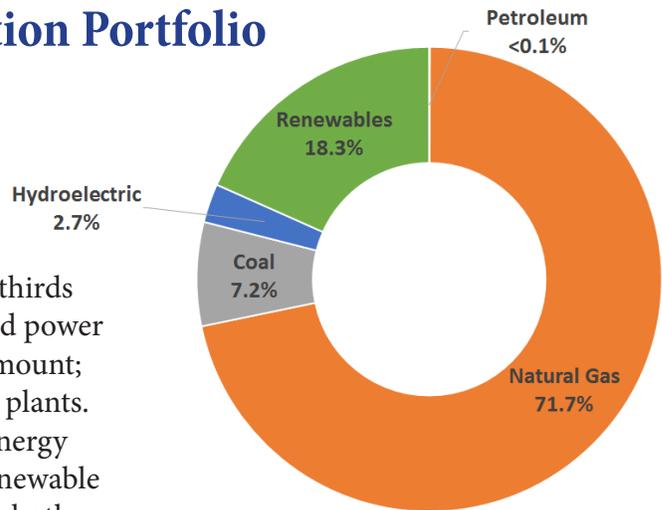


Figure 2 - Net Electricity Generation by Source  
Source: EIA; data through August 2017

## Nevada's Renewable Portfolio Generation

The Governor's Office of Energy closely tracks the renewable energy generated in Nevada, whether that energy is used in Nevada or exported to neighboring states. Renewable energy is defined in NRS 704.7811 as biomass, geothermal, solar, wind and waterpower. Waterpower is further defined as power derived from standing, running or falling water which is used for any plant, facility, equipment or system to generate electricity if the generating capacity is not more than 30 MWs.

## Capacity vs. Generation

In the charts below you will see Nevada's renewable nameplate capacity, expressed in megawatts (MW) and renewable electricity generation, expressed in megawatt-hours (MWh) numbers. Awareness of the difference between nameplate capacity and electricity generation is critical to improving reliability, lowering costs, and enhancing the integration of renewable resources. Nameplate capacity is the maximum rated electric output a generator can produce under specific conditions, and generation is the amount of electricity a generator produces over a specific period of time. The difference is due to the fact that many generators do not or cannot operate at their full nameplate capacity all the time.

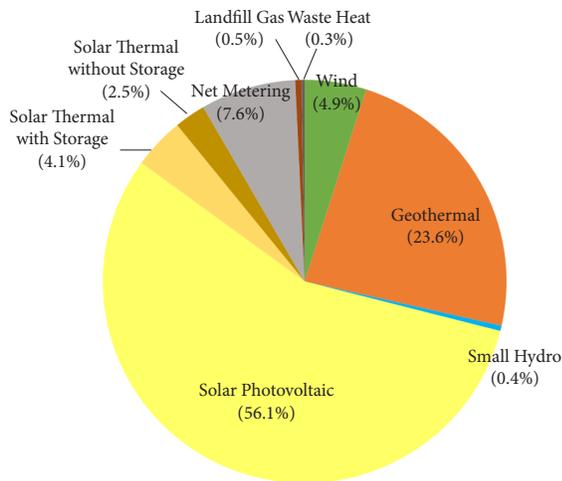


Figure 3 - 2016 Capacity (4,076.9 MW)  
Source: EIA 2016 From 860; Note: graph does not show Hoover Dam.

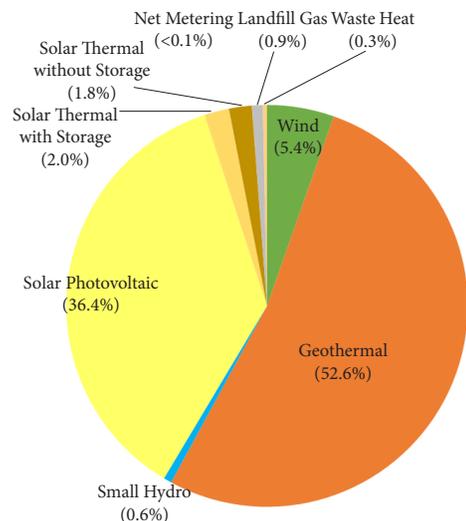


Figure 4 - 2016 Renewable Generation (8,130,000 MWh)  
Source: EIA 2016 From 923; Note: net metering value represents the amount of energy sold back to the grid; graph does not show Hoover Dam

# Renewable Portfolio Standard



Nevada’s Renewable Portfolio Standard (RPS), NRS 704.7801, was adopted by the Nevada Legislature in 1997. The RPS establishes the percentage of electricity sold by an electric utility to retail customers that must come from renewable sources. Specifically, electric utilities are required to generate, acquire, or save with portfolio energy systems or energy efficiency measures, a certain percentage of electricity annually. It should be noted that the renewable energy generated in the State outlined on page 4 does not directly translate to RPS compliance. This difference is due to the fact that RPS carry-forward credits and credits from energy efficiency and conservation are not accounted for in the generation data.



Photo (Above): Ormat's McGinness Hills geothermal plant (source: Ormat)

## 25% by 2025

The percentage of renewable energy required by the RPS will increase every two years until it reaches 25% in 2025. Included within the RPS is a requirement that at least 6% of the portfolio’s total renewable energy must be generated by solar facilities beginning in 2016.

While the RPS mandate in Nevada was 20% in 2017, NV Energy was on course to easily surpass that standard.

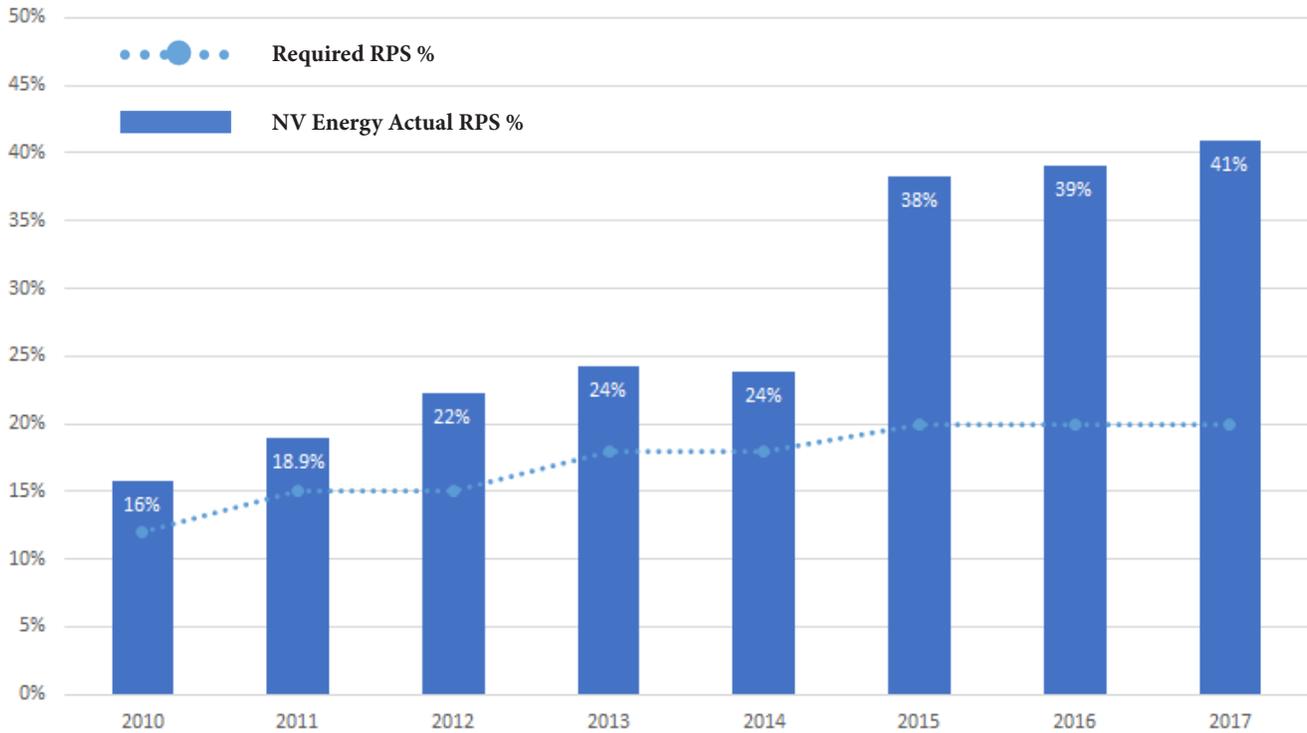


Figure 5 - NV Energy RPS Compliance

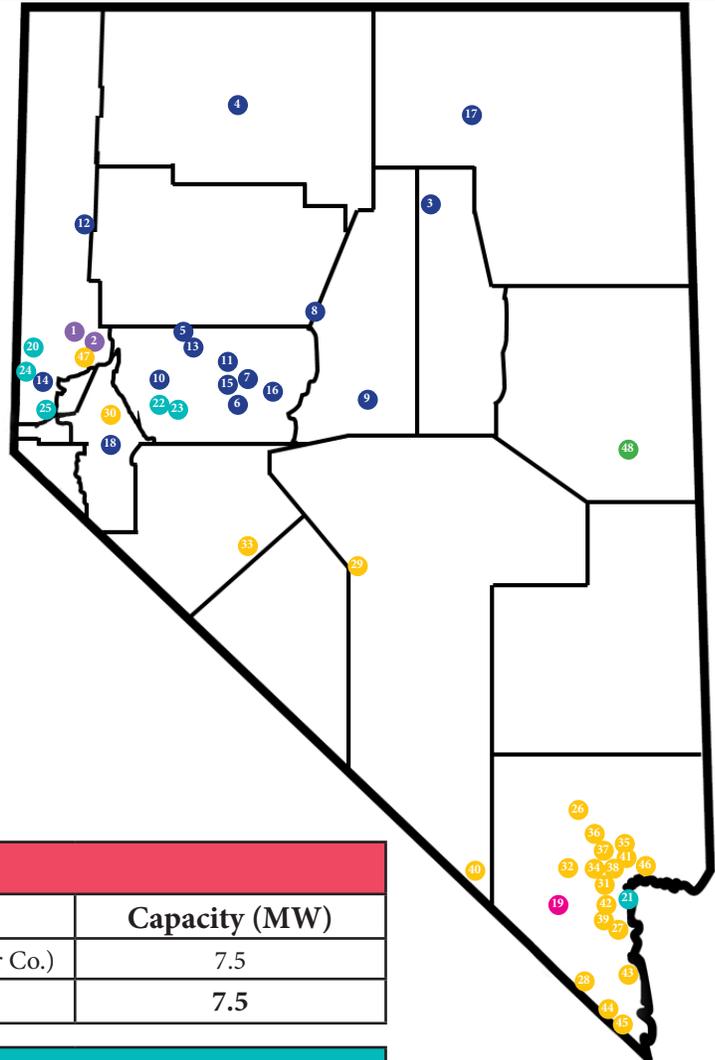
Source: NV Energy annual RPS compliance reports (2010-2016)

Notes: Includes carry-forward credits; 2017 is forecasted based on NV Energy’s 2016 RPS compliance report.

# Nevada's Renewable Energy Portfolio

Biomass / Biogas / Landfill		
	Power Plant Name	Capacity (MW)
1	Clark County Landfill Energy (DCO Energy LLC)	12.0
2	Waste Management Lockwood LFGTE (WM Renewable Energy LLC)	3.2
	<b>Subtotal (Biomass)</b>	<b>15.2</b>

Geothermal		
	Power Plant Name	Capacity (MW)
3	Beowawe Power (Terra-Gen)	20.6
4	Blue Mountain (NGP/AltaRock)	63.9
5	Brady Complex (Ormat)	58.9
6	Dixie Valley (Terra-Gen)	60.5
7	Don A. Campbell (I & II) (Ormat)	47.5
8	Jersey Valley (Ormat)	23.5
9	McGinness Hills (I & II) (Ormat)	100.0
10	Patua Phase 1A (Cyrq)	48.0
11	Salt Wells (Enel)	23.6
12	San Emidio (U.S. Geothermal)	11.8
13	Soda Lake No I II (Cyrq)	26.1
14	Steamboat Complex (Ormat)	131.7
15	Stillwater (Enel)	47.2
16	*Tungsten Mountain (Ormat)	24.0
17	Tusarora (Ormat)	24.0
18	Wabuska (Homestretch)	5.4
	<b>Subtotal (Geothermal)</b>	<b>716.7</b>



Waste Heat		
	Power Plant Name	Capacity (MW)
19	Goodsprings Waste Heat Recovery (Nevada Power Co.)	7.5
	<b>Subtotal (Waste Heat)</b>	<b>7.5</b>

Hydroelectric		
	Power Plant Name	Capacity (MW)
20	Fleish (Truckee Meadows Water Authority)	2.0
21	Hoover Dam (NV Allocation)	1,039.4
22	Lahontan (Truckee-Carson Irrigation District)	1.8
23	New Lahontan (Truckee-Carson Irrigation District)	4.0
24	Verdi (Truckee Meadows Water Authority)	2.4
25	Washoe (Truckee Meadows Water Authority)	2.6
	<b>Subtotal (Hydroelectric)</b>	<b>1,052.2</b>

Figure 6 - Renewable Project Map

Source: EIA 2016 Form 860. Schedule 3.

\* Indicates new generation online in 2017.

# Nevada's Renewable Energy Portfolio

Solar		
	Power Plant Name	Capacity (MW)
26	Apex Solar (Southern Power Co.)	20.0
27	Boulder Solar (Southern Power Co.)	100.0
27	*Boulder Solar II (AEP Renewables)	50.0
28	Copper Mountain 1-3 (Semptra)	467.0
28	*Copper Mountain 4 (Semptra) - 12/2016	94
29	Crescent Dunes (SolarReserve) <sup>(1)</sup>	125.0
30	Ft. Churchill (Apple)	19.9
31	*IKEA Las Vegas (IKEA)	1.0
32	Las Vegas WPCF (City of Las Vegas)	3.3
33	*Luning Energy (Algonquin Power Co.)	50.0
34	Mandalay Bay-1 (MGM)	5.0
34	Mandalay Bay-2 (MGM)	1.9
35	Moapa Southern Paiute (First Solar)	250.0
36	Mountain View (NextEra)	20.0
37	Nellis Air Force Base (Solar Star NAFB)	14.0
38	Nellis PV II (Nevada Power Co.)	15.0
39	Nevada Solar One (Acciona Solar Power) <sup>(1)</sup>	75.7
40	Nevada Valley Solar Solutions II (VEA)	15.0
10	*Patua Geothermal (Cyrq)	10.6
41	*Playa Solar 2 (EDF), (Switch 1)	100.0
41	*Playa Solar 1 (EDF), (Switch 2)	79.0
42	*River Mountains Solar (SNWA)	14.4
43	Searchlight Solar (Searchlight Solar)	17.5
44	Silver State Solar North (Enbridge)	52.0
45	Silver State Solar South (NextEra)	250.0
46	Spectrum Solar (Southern Power Co.)	30.0
15	Stillwater (Enel)	22.0
47	Western 102 (Barrick Goldstrike Mines)	1.0
	<b>Subtotal (Solar)</b>	<b>1,903.3</b>
Net Metered		
	<b>Subtotal (Net Metered, All Technologies, MW)</b>	<b>232</b>
Wind		
	Power Plant Name	Capacity (MW)
48	Spring Valley Wind Project (Pattern)	150.0
	<b>Subtotal (Wind)</b>	<b>150.0</b>
		<b>Total 4,076.9</b>

Source: EIA 2016 Form 860. Schedule 3.

Net Metered: EIA 2016 Form 826, data through 10/2017.

<sup>(1)</sup> Concentrated Solar Plant

\* Indicates new generation online in 2017.

## Energy in Nevada

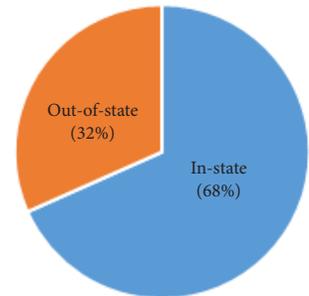


Figure 7 - Where the energy goes

Did you know, almost one-third of the nameplate capacity of Nevada's renewable projects have Power Purchase Agreements (PPAs) to deliver electricity out of the State?

1,291 MWs (nameplate) of 4,077 MWs of renewable projects have PPAs out of the state.

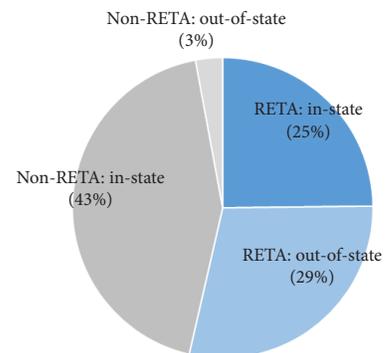


Figure 8 - Renewable projects and participation in the Renewable Energy Tax Abatement (RETA) Program relating to in/out of state PPAs

Note: refer to page 18 for more information on RETA.

# Energy in Nevada

## Energy Usage by Sector

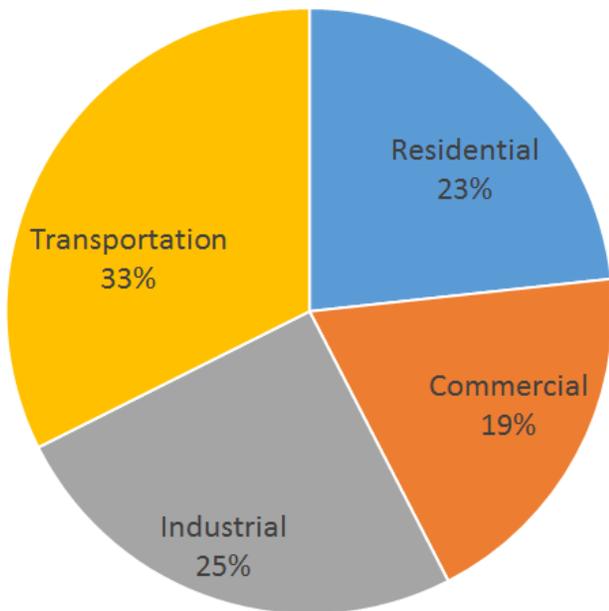
The figures below show the energy consumption and expenditures by sector in Nevada. With most fossil fuels imported to the State, transitioning to domestically produced sources like renewables can keep more of these dollars in Nevada. In particular, the transportation sector accounts for approximately one-third of energy consumption and one-half of energy expenditures. Transitioning Nevada’s transportation infrastructure to alternative fuel and electric vehicles will lessen the State’s dependency on out-of-state resources.

### Energy Consumption

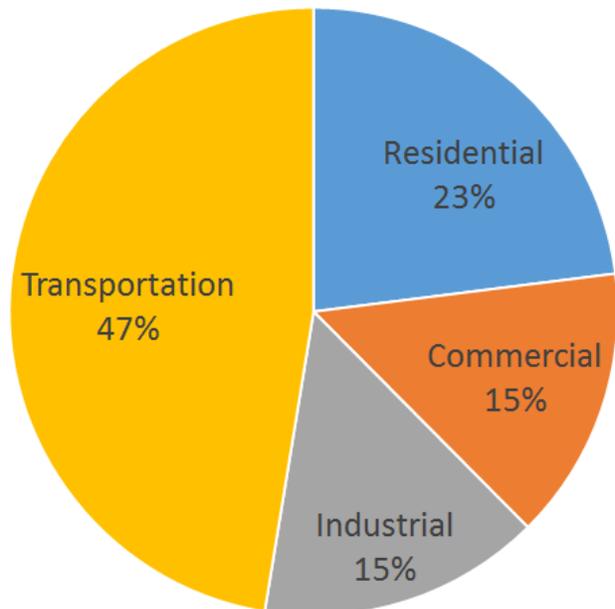
Energy consumption is the amount of energy used in a process, organization, or society. The chart below on the left shows the breakdown of energy consumption in Nevada by percentage. About 88% of the fuel for energy in Nevada consumes comes from outside the State (Source: EIA Quick Facts on Nevada).

### Energy Expenditures

Energy expenditure is the amount of money used to purchase energy in order to power a process, organization, or society. The chart below on the right shows the breakdown of energy expenditures in Nevada by percentage. Almost half of all energy expenditures in Nevada for transportation, which falls into the fossil fuel category (jet fuel, gasoline, diesel fuel, aviation gas) and alternative fuel category (natural gas, electricity, propane, methanol, ethanol, and certain blends).



**Figure 9 - Energy Consumption**  
Source: EIA Nevada Energy Consumption & Expenditures End-Use Sector 2015



**Figure 10 - Energy Expenditures**  
Source: EIA Nevada Energy Consumption & Expenditures End-Use Sector 2015

# Utilities & Energy Service Providers

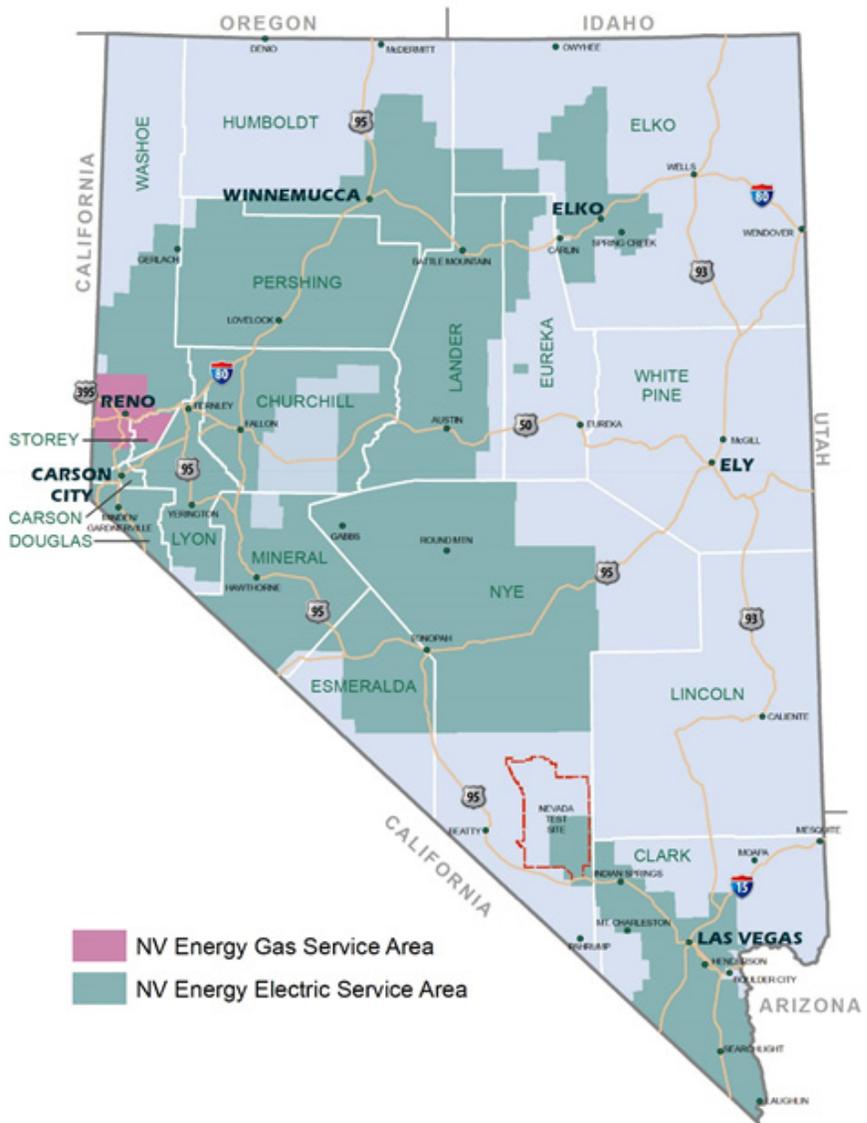
Electric energy consumption in Nevada consists of customers of the State's largest investor-owned utility (NV Energy), rural electric cooperatives, municipal utilities, and general improvement districts.



NV Energy has served citizens in northern Nevada for more than 150 years, and southern Nevada since 1906. Today, NV Energy has a service area that covers nearly 46,000 square miles of the fastest growing State in the U.S., including the communities of Las Vegas, Reno-Sparks, Henderson and Elko. NV Energy provides a wide range of energy services to 1.3 million customers throughout the State and more than 40 million tourists annually. NV Energy also provides natural gas to more than 160,000 citizens in the Reno-Sparks area.

Nevada Power, Sierra Pacific Power and Sierra Pacific Resources merged in July 1999. In 2008, the subsidiaries began doing business as NV Energy.

NV Energy, which is headquartered in Las Vegas, was acquired by Berkshire Hathaway Energy in 2013.



Source: NV Energy

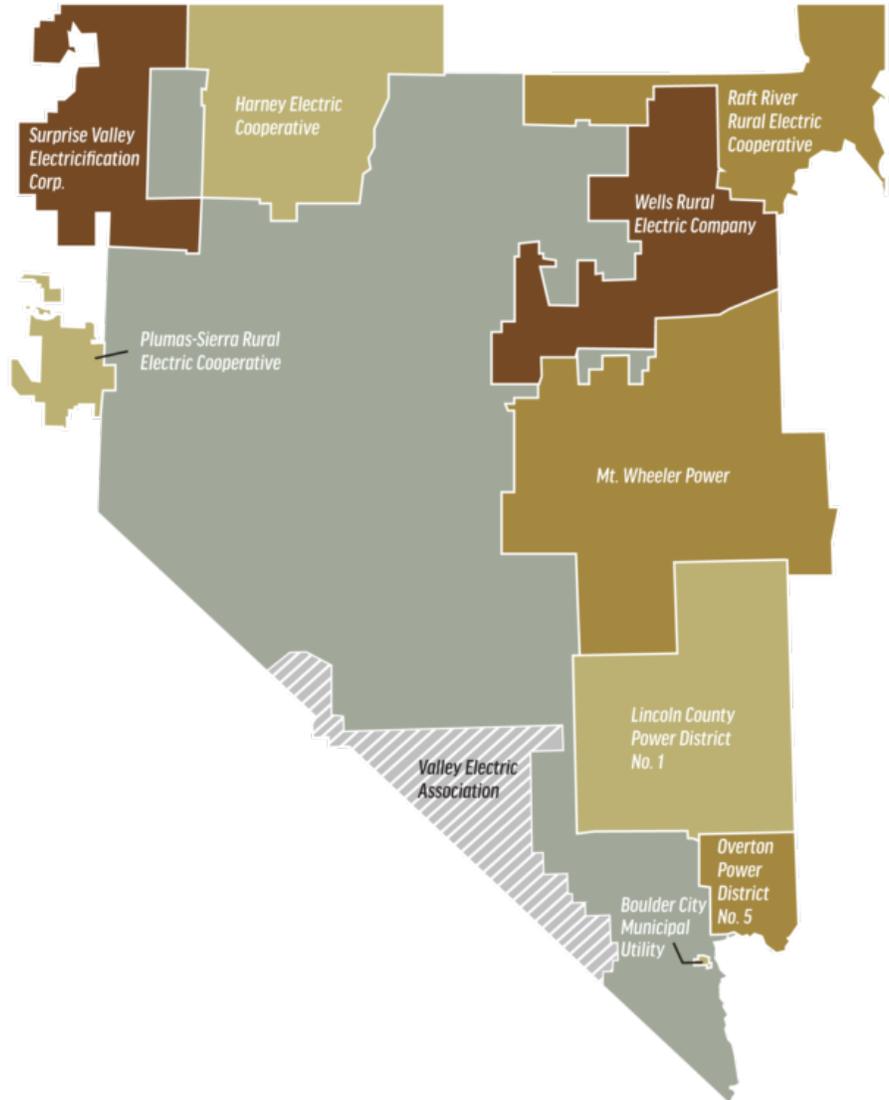
# Energy in Nevada

## Nevada Rural Utility Service Areas

Nevada Rural Electric Association (NREA) utilities are democratically organized and controlled by their members, who actively participate in setting policies and making decisions. Members of the Board of Directors are elected by and from local citizens who take service from the utility. Each member is cooperatively organized and owned by their members or a consumer-owned, not-for-profit utility.

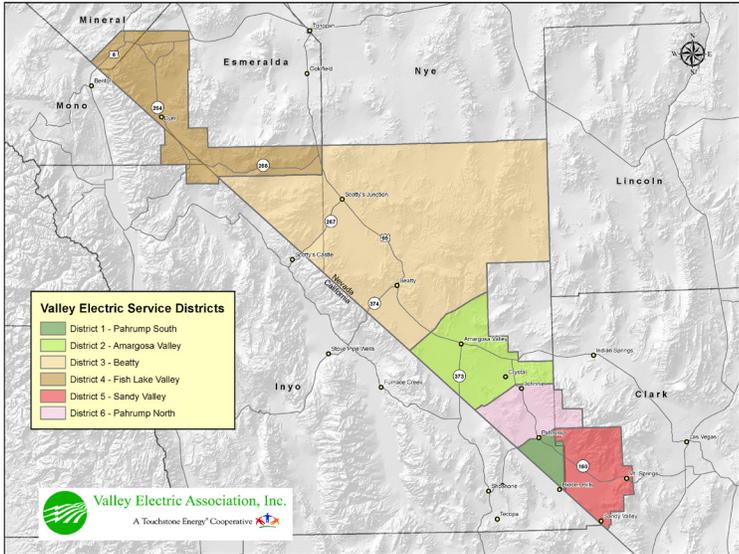
### NREA Members

- Boulder City Electric, Boulder City, NV
- Desert Power, South Jordan, UT (affiliate member)
- Harney Electric Cooperative, Hines, OR
- Lincoln County Power District No. 1, Pioche, NV
- Mount Wheeler Power, Ely, NV
- Overton Power District #5, Overton, NV
- Plumas-Sierra Rural Electric Co-op, Portola, CA
- Raft River Rural Electric, Malta, ID
- Surprise Valley Electrification Corporation, Alturas, CA (associate member)
- Wells Rural Electric Company, Wells, NV



# Valley Electric Association

Valley Electric Association, Inc. (VEA) is a member-owned electric cooperative headquartered in Pahrump, which provides service to more than 45,000 people within a 6,800-square-mile service area along the California-Nevada border. VEA's residential members are the co-op's largest single consumer group.



VEA was the first non-California utility to join the California Independent System Operator (CAISO) in 2013.



# Southwest Gas

Southwest Gas Corporation is an investor-owned utility based in Las Vegas that provides natural gas service to parts of Arizona, Nevada, and California. The company is the largest distributor of natural gas in Nevada.



# Energy in Nevada

## Energy in Nevada: 2017 Year in Review

### 2017 Legislative Session

As a result of the 79<sup>th</sup> Session of the Nevada Legislature, Governor Brian Sandoval signed numerous bills into law addressing energy matters including energy storage, green financing mechanisms, revisions to the integrated resource planning process at the Public Utilities Commission of Nevada (PUCN), rooftop solar, and electric vehicle infrastructure deployment.



“I remain committed to pursue policies that will allow Nevada to continue to lead the nation in renewable energy production, energy conservation, and the exportation of energy. Nevada has many energy accomplishments and will continue to seek opportunities that build upon our existing programs and create new pathways to ensure that our energy sector remains one of the cleanest in the country.”

-Brian Sandoval,  
Nevada Governor



Photo (Above): Governor Sandoval signs key energy legislation (AB 405, SB 146 & 150) at the Tesla Energy Warehouse in Las Vegas, NV (source: GOE).

A highlight of energy bills passed into law is included below:

**AB 5\***: A recommendation from the New Energy Industry Task Force of 2016 to enable local governments to implement Property Assessed Clean Energy (PACE) programs. PACE is a financing mechanism to enable more renewable energy and energy efficiency improvements through an assessment on the property's tax bill which runs with the property. AB 5 enabled PACE for commercial property only.

**AB 160**: Requires the State Public Works Division to evaluate alternatives to window replacement to promote energy efficiency and extends the maximum term of performance contracts entered into by state agencies from 15 years to 20 years, thus increasing the financing options for operating cost-savings measures including modifications to windows to reduce costs related to energy, water and the disposal of waste.

**AB 223**: A recommendation from the New Energy Industry Task Force of 2016 which requires NV Energy to submit an energy efficiency plan to the PUCN as part of its Integrated Resource Plan which provides for no less than 5% of spending on energy efficiency programs to go toward helping low-income Nevadans become more energy efficient; authorizes the PUCN to accept an energy efficiency plan that consists of energy efficiency programs that are not cost effective if the energy efficiency plan as a whole is cost effective.

\* Indicates legislation was sponsored by the Governor's Office Energy

# Energy in Nevada: 2017 Year in Review

## 2017 Legislative Session

## Energy in Nevada

**AB 405:** Reinstates (nearly) retail rate net metering, in 80 MW tranches. The bill requires net metering on a monthly basis where the customer receives a tiered reduction in the value of the exported energy, dependent on the solar penetration level in the State. It specifically calls for customers to receive a credit equivalent to 95% of the retail value immediately after passage which decreases for every 80 MWs accumulated to an ultimate 75% after the final tranche. The bill establishes consumer protections, worker safety and additional transparency, accessibility and accountability in the rooftop solar leasing and purchasing process.

**SB 65\*:** A recommendation from the New Energy Industry Task Force of 2016 which enables greater public participation in the Integrated Resource Plan pre-filing meetings between the PUCN and the utility; Ensures that during the IRP process, preference will be given by the PUCN to resources which provide the greatest economic and environmental benefits, the greatest opportunity for the creation of new jobs in the state, diversify energy portfolios, reduce fuel and carbon-price risk, and help to position Nevada to lead the nation as a producer and consumer of clean and renewable energy consistent with established State policy.



Photo (Above): Solar installation on the Henderson DMV building (source: GOE).

**SB 145:** A recommendation from the New Energy Industry Task Force of 2016 which creates the Solar Energy Incentives Program to provide incentives for both commercial and residential installation of solar and energy storage systems, a low-income solar program, and an Electric Vehicle Infrastructure Demonstration Program.

**SB 146:** Requires the utility to include a distributed resources plan within its Integrated Resource Plan which evaluates the costs and benefits of distributed resources including distributed generation systems, energy efficiency, energy storage, electric vehicles and demand-response technologies.

**SB 150:** Requires the PUCN to establish annual goals for energy efficiency savings and implementation of cost-effective energy efficiency programs offered by the utility; requires the utility to file an energy efficiency plan which provides for no less than 5% of the total expenditures to be directed to programs for low-income customers; provides authority to the PUCN to implement decoupling by including a rate adjustment mechanism which would remove financial disincentives that discourage the utility from implementing or promoting energy efficiency programs.

**SB 204:** A recommendation from the New Energy Industry Task Force of 2016 which requires the PUCN to investigate and consider establishing storage procurement targets for NV Energy if found to be cost-effective.

**SB 314:** Removes ability of a governing city or county to impose unreasonable restrictions on wind energy related to the height of the system unless it endangers public health, safety or welfare.

\* Indicates legislation was sponsored by the Governor's Office Energy

## Energy in Nevada

# Energy in Nevada: 2017 Year in Review

## 2017 Legislative Session

**SB 407:** Creates the Nevada Clean Energy Fund (aka “Green Bank”), which authorizes formation of a new dedicated clean energy finance non-profit entity which will provide financing options for deployment of a range of clean energy technologies in partnership with the public and private sector.

## Energy Choice Initiative

On November 8, 2016, the voters of the State of Nevada approved Ballot Question 3, The Energy Choice Initiative, which would amend the Nevada Constitution if voters approve the initiative again in the 2018 general election.

Ballot Question 3 would amend State policy so that “electricity markets be open and competitive so that all electricity customers are afforded meaningful choice among different providers, and that economic and regulatory burdens be minimized in order to promote competition and choices in the electric energy market.”

On February 9, 2017, Governor Brian Sandoval signed Executive Order 2017-03 establishing the membership, chairmanship, mission, timeline, and issues to address on the Governor’s Committee on Energy Choice. The Committee’s mission is to identify the legal, policy, and procedural issues that need to be resolved, and to offer suggestions and proposals for legislative, regulatory, and executive actions that need to be taken for the effective and efficient implementation of The Energy Choice Initiative.

The Governor’s Office of Energy provides administrative support to the committee and hosts all meeting materials; more information can be found on our website: (<http://energy.nv.gov/Programs/TaskForces/2017/EnergyChoice/>).



Photo (Above): Lieutenant Governor Mark Hutchison opening the Energy Choice Initiative (Source: Nevada Legislature).

## National Governor’s Association - Energy Innovation Summit

As the 2017-2018 Chair of the National Governor’s Association, Governor Sandoval selected technology innovation as his theme, focusing on the areas of energy and transportation. The Energy Innovation Summit was held in Denver, Colorado as part of the Chair’s Initiative, Ahead of the Curve: Innovation Governors, with the purpose of highlighting how governors can stay one step ahead of rapidly advancing technologies that impact residents and businesses and present potential benefits and risks. The Summit included teams of governors’ advisors from participating states as well as experts from the utility and technology fields and explored topics such as energy infrastructure transformations in battery storage, renewable energy, microgrids, efficiency, automated energy management and included discussion topics such as workforce development, cybersecurity and grid modernization. Governor’s Office of Energy Director Dykema spoke on a panel “How States Stay Ahead of the Energy Innovation Curve” and highlighted Nevada’s efforts around storage, electric vehicles and distributed resource planning.\*

\* Information can be found on NGA’s website: <https://www.nga.org/cms/center/meetings/eet/energy-innovation-summit>

# Energy in Nevada: 2017 Year in Review



Photo (Above): Governor Sandoval opening the National Clean Energy Summit in Las Vegas, NV (Source: Gov. Sandoval twitter).

## Clean Energy Summit

The National Clean Energy Summit was the national stage for clean energy development discussions and serves as the country's most visible and influential gathering of clean energy leaders and top policymakers. The day-long clean energy summit was hosted by former U.S. Senator Harry Reid and Nevada Governor Brian Sandoval, and sponsored by the Clean Energy Project and MGM Resorts International.

National Clean Energy Summit 9.0: Integrating Innovation focused on the economic, environmental, and national security benefits of innovative technologies and explore how policy, regulatory change, and new business models are shaping the clean energy economy.

Governor Sandoval provided opening remarks at this year's event and also moderated a panel of governors to explore how state investments in innovation and support for clean energy initiatives are increasing deployment of renewable energy, reducing energy consumption, improving the environment and driving economic growth.

## Frontier Observatory for Research in Geothermal Energy

The Governor's Office of Energy announced \$1,000,000 of funding in support of the Frontier Observatory for Research in Geothermal Energy (FORGE) project located in Fallon, Nevada in 2017. FORGE is a Department of Energy program to develop technologies, techniques, and knowledge needed to make Enhanced Geothermal Systems (EGS) a commercially viable electricity generation option for the nation. EGS involves techniques that mine heat from rocks to make energy in contrast to conventional geothermal systems that require both heat and relatively high rates of fluid (high permeability), and has the potential to provide access to hundreds of megawatts of geothermal. The main objective of the FORGE project is to establish and maintain a dedicated field site, where the scientific and engineering communities can develop, test and improve EGS technology.



DOE awarded funding for the Fallon site in April 2015 as one of five locations chosen after a competitive research phase evaluated underground research sites for EGS throughout the United States. Fallon was one of two finalists selected by DOE again in September 2016 to advance to FORGE Phase 2, which involves the acquisition of new data to better characterize the site and allow for selection of a final location for FORGE. If selected as the finalist, the Fallon site would become the headquarters for an underground field laboratory to conduct cutting-edge research and development of an enhanced geothermal system (EGS).

“Nevada is an international leader in geothermal production and technology but in order to remain the best in the world, we must continue to innovate and invest in research and development. These funds demonstrate the state's commitment to renewable energy and our dedication to remaining the top research destination and producer of geothermal technology and techniques.” – Governor Brian Sandoval

## Governor's Office of Energy Programs

# Nevada Electric Highway

Nevada's Strategic Planning Framework established the goal to complete an "electric highway" system serving the entire State by 2020, building on initial agency plans to install publicly available Electric Vehicle (EV) fast-charging infrastructure along U.S. Highway 95 between Reno and Las Vegas. The Nevada Electric Highway (NEH) initiative, led by the Governor's Office of Energy, aims to achieve this goal through partnership with the Nevada Department of Transportation (NDOT), Nevada's electric utilities, and private commercial host sites. Each charging station incentivized by the Governor's Office of Energy includes two Level 2 chargers and one Direct Current (DC) Fast Charger in order to accommodate different types of EVs currently on the road.

Phase I of the NEH, along U.S. 95, nears completion with three charging stations operational in Beatty, Fallon and Hawthorne and two final stations in Tonopah and Indian Springs slated to come on-line in 2018. Phase II of the NEH began with planning for EV charging infrastructure deployment on the State's remaining major interstate and highway corridors, including I-15, I-80, U.S. 93, and U.S. 50. Phase II development officially began in 2017 with the completion of the EV charging station in Panaca along U.S. Highway 93.

Nevada's efforts to create the NEH were strengthened with the U.S. Federal Highway Administration's designation of I-15, I-80, U.S. 95, and U.S. 50 as EV "Signage-Pending" corridors, a significant step for corridors to meet newly designated federal standards. After infrastructure is completed, the corridors will be redesignated as "Signage-Ready", and designating Nevada as a key connector for EVs traveling across the West.

In order to encourage the increased adoption of EVs in Nevada, SB145 was passed during the 2017 Legislative Session and signed by Governor Sandoval, requiring the creation of the Electric Vehicle Infrastructure Demonstration Program.



Photo (Left): Construction nearly complete at the Hawthorn EV charging station, which is part of the Nevada Electric Highway along U.S. 95 corridor (source: NDOT).

# Regional Electric Vehicle West Plan

In 2017, the Governor’s Office of Energy led a multi-state effort to coordinate and encourage EV infrastructure development along major interstates throughout the western region. Nevada is a critical hub for the adoption of EV infrastructure

**Governor’s  
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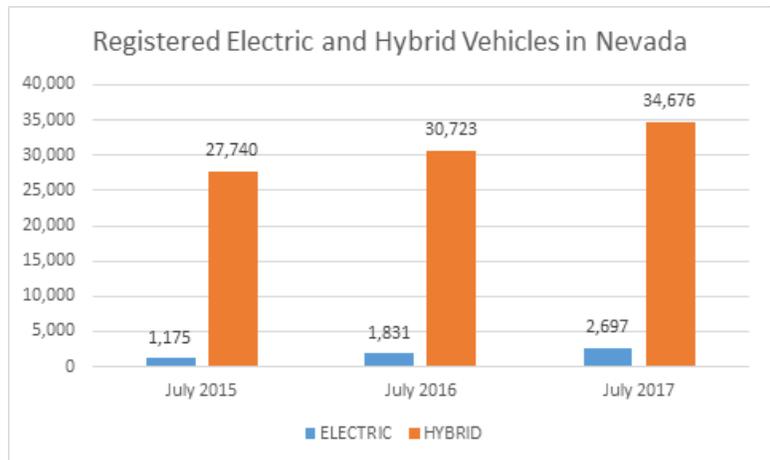


and is working directly with neighboring states to coordinate priority corridors, siting considerations and technical standards. After an initial partnership was announced between Nevada, Colorado, and Utah, a Memorandum of Understanding was signed in October 2017 announcing the Regional Electric Vehicle “REV” West Plan that was expanded to also include Idaho, Wyoming, New Mexico, and Arizona.

“The State of Nevada has electrified many of its interstates and highways which has increased access to our open roads and promoted tourism and recreation in our rural communities. This collaboration will allow more families, tourists, and travelers the ability to experience the freedom and beauty of the great American West,”

-Governor Brian Sandoval.

Photo (Above): Gov. Sandoval talking about Nevada Electric Highway in Carson City (Source: GOE).



Source (Above): Nevada Department of Motor Vehicles.

Source (Left): GOE. Note (\*) designates projects estimated to come online in 2018.

## Governor's Office of Energy Programs

# Renewable Energy Tax Abatement Program

{See NRS 701A.300-390 & NAC 701A.500-660}

The Renewable Energy Tax Abatement (RETA) Program awards partial sales and use tax and partial property tax abatements to renewable energy producers. To be eligible, projects must employ at least 50% Nevada workers, pay 175% of Nevada's average wage during construction, and offer health care benefits to workers and their dependents. The Governor's Office of Energy reviews the applications, conducts public hearings to determine eligibility, and reviews annual compliance reports after abatements are granted.

The Renewable Energy Tax Abatement Program is a crucial tool in attracting developers to Nevada because it provides an incentive for the construction of commercial power plants. These projects increase Nevada's tax revenue and lead to job creation in a growing industry.

Since the Program's inception, Nevada's investment of \$749 million in tax abatements has attracted nearly \$7 billion in capital investments, payroll, and taxes paid, representing a 10-to-1 return on Nevada's investment. The projects that have received an abatement from the Governor's Office of Energy created over 4,600 jobs that paid an average wage of over \$37 an hour. This represents a total of 30 renewable power plants and one transmission project in Nevada.

## Projects granted a tax abatement in 2017:

### Brady Power Partners

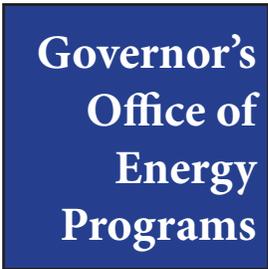
Company:	Ormat Nevada
County:	Churchill
Type:	Geothermal
Nameplate Capacity:	15 MW
Power Purchaser:	Southern California Public Power Authority (SCPPA)
Tax Abatement:	~\$3.2M
Total Project Investment:	~\$36M



Photo: Ormat's Brady Geothermal Complex (Source: Ormat).

# Revolving Loans for Renewable Energy, Energy Efficiency, and Energy Conservation

{See NRS 701.545-595 & NAC 701.600-700}



The Governor's Office of Energy administers the Revolving Loan Fund for projects that develop or expand renewable energy systems, energy efficiency projects, energy conservation, and manufacturing of components of renewable energy systems in Nevada. Applicants may apply for a minimum of \$100,000 and a maximum of \$1,000,000. Loan terms will be less than 15 years with an interest rate of three percent.

Nearly \$13 million has been funded, since inception, under the federal American Recovery and Reinvestment Act of 2009.

PROJECT	SIZE	TYPE	COUNTY	YEAR
Ro/Truckee River Ranch	225 kW	Hydro	Nye	2010
Residence Washoe Valley (3)	21 kW	Wind	Washoe	2010
Young Brothers Ranch	175 kW	Hydro	Lander	2010
Van Norman Ranches (2)	52 kW	Hydro	Elko	2011
Andreola Wind Farm	800 kW	Wind	Lander	2012
Andreola Wind Farm	1.2 kW	Wind	Elko	2012
Board of Regents	437 kW	PV	Washoe	2013
City of Las Vegas - East Yard	100 kW	PV	Clark	2014
City of Las Vegas - West Yard	200 kW	PV	Clark	2014
City of Las Vegas - Durango Hills	200 kW	PV	Clark	2014
Truckee Carson Irrigation District	375 kW	Hydro	Churchill	2014
Railroad Valley Farms	305 kW	PV	Nye	2017



Photo (Left): Aerial view of PV installation at Railroad Valley Farms (Source: Railroad Valley Farms).

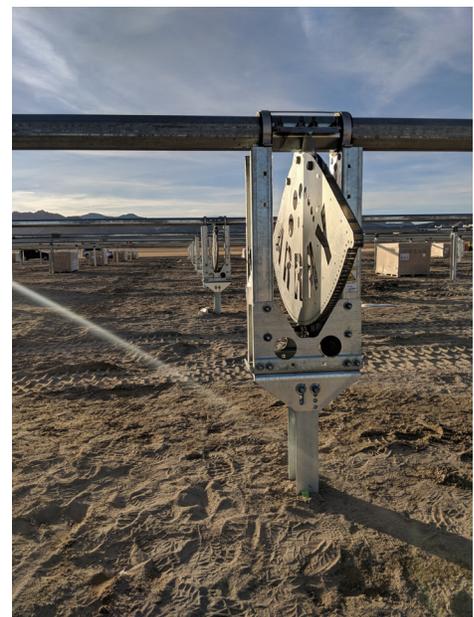


Photo (Right): Single-axis solar tracking at Railroad Valley Farms (Source: Railroad Valley Farms).

## Direct Energy Assistance Loan Program

The Direct Energy Assistance Loan (DEAL) Program provides State of Nevada employees an interest-free loan for energy efficiency upgrades at their home. The loan is paid off via a monthly payroll deduction. The Governor's Office of Energy funds the program and the Nevada Housing Division administers the program through its established delivery system of contractors.

To be eligible for a loan, State of Nevada employees must meet the following criteria:

- Be an active full-time employee, employed at least 12 months by the State of Nevada
- Must be part of the Nevada Employee Action and Timekeeping System (NEATS)
- Must not owe debt to the State of Nevada
- Must own the home
- Must be an electric customer of NV Energy

Once an employee's application is accepted, a State-approved energy auditor conducts an assessment of the home and recommends energy savings measures. After the employee selects from the recommended measures, the contractor performs the upgrades and receives payment from the Nevada Housing Division. The maximum payback length is 60 months. A loan of \$1 – \$3,000 has a monthly payment of \$50; a loan of \$3,001 – \$6,000 has a monthly payment of \$100. Employees who are U.S. military veterans are eligible for loans of up to \$8,000, with a longer term.

Contractor recommended measures include:

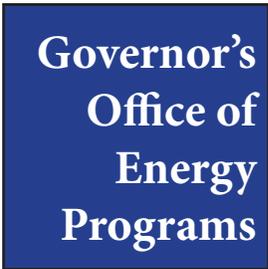
- Duct and shell sealing
- Air conditioner replacement
- Heat pump replacement
- Water heater replacement
- Heat pump water heater
- Programmable thermostat installation

Since its inception, 106 State of Nevada employees have received weatherization improvements at their home through the DEAL program. The counties that saw the most State of Nevada employees apply for DEAL were Carson City, Washoe, Clark, and Lyon. The resulting savings of these energy efficiency measure will reduce energy consumption an estimated 300,970 kilowatt hours and 39,226 therms annually. The average savings per home are 2,839 kWh and 370 therms annually.

Photo: GOE staff and a Nevada Housing Division contractor use a thermal spectrometer to test heat loss at a State employee's home in Washoe County (Source: GOE).



# Home Energy Retrofit Opportunities for Seniors (HEROS) Program



Funded by the Governor's Office of Energy and administered by the Nevada Housing Division, the HEROS Program provides energy assessments of a qualifying seniors' homes and installation of recommended weatherization measures.

The Program reduces energy cost for savings by improving the energy efficiency of their homes. HEROS funding of up to \$8,000 is offered at no cost to qualifying seniors who own their home. Since the Program's inception, 539 homeowners have received weatherization benefits. Each senior participant annually saved an average of 5,416 kilowatt hours (kWh) of electricity and 258 therms of natural gas in their home. This represents an annual savings of \$952 on their utility bills which equates to a 49% savings.

## Program Requirements

- Be age 60 years or greater
- Be an NV Energy customer
- Own and reside in the home
- Have an income at or below 200% of federal poverty guidelines

## Benefits

- Helps seniors live in healthier, safer homes
- Weatherization diagnostic tests help identify dangerous carbon monoxide levels
- Makes home more comfortable thanks to better temperature distribution
- Makes home more efficient, resulting in lower monthly energy costs for each household

## Contract Recommended Measures Include:

- Air and duct sealing
- Low flow shower head install
- Broken window repair
- Water heater replacement
- HVAC repair or replacement
- Solar screens (Southern Nevada only)
- Attic insulation
- CFL or LED retrofits
- Floor insulation

## Service Providers:



Photo: GOE Robin Isaacs talking to seniors about HEROS in Reno at Senior Fest (Source: GOE).

## Governor's Office of Energy Programs

### Performance Contract Audit Assistance Program

Performance contracting is an alternative financing mechanism to accelerate investment in cost effective energy conservation measures and accomplish energy savings projects without up-front capital. It is a partnership between a building owner and an Energy Service Company (ESCO) that conducts an energy audit identifying improvements that will save energy. The ESCO guarantees that the improvements will generate cost savings sufficient to pay for the project over the term of the contract.

The Performance Contract Audit Assistance Program (PCAAP) funds a financial grade audit, which is the first step to determine if a project is worth pursuing. Since PCAAP's inception in 2014, the Governor's Office of Energy has awarded \$1.1 million to accelerate performance contracting, resulting in project investments totaling \$66 million, while creating an estimated 479 jobs.

In 2017, Carson City School District (CCSD) received \$105,000 from the Governor's Office of Energy to cover the cost of a financial grade audit for a project that included lighting retrofits, HVAC and heat-pump improvements, water conservation measures, and an education program for 16 schools and administration buildings. The resulting \$6.1 million project created an estimated 24 jobs and saves the city \$357,000 annually in energy costs.



Photo: Solar Installation at Carson Middle School (Source: Carson City School District).



Photo: Carson City School District receives NV Energy funds for EE upgrades to their schools (Source: Carson City School District).

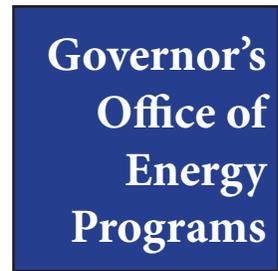
Washoe County School District (WCSD) is scheduled to receive \$240,000 in early 2018 to cover the cost of a financial grade audit for a project that will include lighting retrofits, programmable thermostats, and education programs in 31 schools and two administration buildings in the district. The resulting \$11.3 million in projects will create 130 jobs, save the district \$1.1 million in costs annually, and reduce consumption by 5.2 million kilowatt hours and 80,000 therms annually.



# International Energy Conservation Code

{See NRS 701.220 & NAC 701.010-245}

The International Energy Conservation Code (IECC) is a model for the establishment of minimum design and construction requirements for energy efficiency. The Governor’s Office of Energy adopted the 2012 IECC in 2015. In June 2017, the Governor’s Office of Energy began the adoption process for the most recent version of the IECC.



Internationally, code officials recognize the need for a modern, up-to-date energy conservation code addressing the design of energy-efficient building envelopes and installation of energy-efficient mechanical, lighting and power systems through requirements emphasizing performance. The IECC is designed to meet these needs through model code regulations that will result in the optimal utilization of fossil fuel and nondepletable resources in all communities, large and small.

This code contains separate provisions for commercial buildings and for low-rise residential buildings (three stories or less in height above grade). Each set of provisions, IECC—Commercial Provisions and IECC—Residential Provisions, is separately applied to buildings within their respective scopes. Each set of provisions is to be treated separately. Each contains a Scope and Administration chapter, a Definitions chapter, a General Requirements chapter, a chapter containing energy efficiency requirements and existing building provisions applicable to buildings within its scope.

This comprehensive energy conservation code establishes minimum regulations for energy-efficient buildings using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new energy-efficient designs. This IECC is fully compatible with the Family of International Codes.

## Stakeholder Outreach

The Governor’s Office of Energy, in collaboration with SWEEP, NV Energy and SW Gas, presented the 2015 IECC trainings in Las Vegas, Reno and Elko that attracted residential builders and contractors.



Photo: Eric Makela (Cadmus) talks in Reno about 2015 IECC Commercial changes to the code (source: GOE).

**Governor's  
Office of  
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Programs**

## Green Building Tax Abatement Program

{See NRS 701A.100-110 & NAC 701A.010-370}

The Governor's Office of Energy administers the Green Building Tax Abatement Program based on criteria set forth in the Leadership in Energy and Environmental Design (LEED) or Green Globes rating system and certification from the U.S. Green Building Council (USGBC) or the Green Building Initiative (GBI). LEED and Green Globes rating systems provide a complete framework for assessing building performance and meeting sustainability goals. These rating systems are used in industry and are recognized standards for designing, operating, and certifying green building projects. The program was instituted in 2007 as an incentive for business owners to improve the energy efficiency of new and existing buildings.

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### Projects Receiving Tax Abatements

In 2017, 40 buildings in Nevada received a Green Globes or LEED certification or equivalency, representing more than 155 million square feet of space.

There are currently 128 buildings participating in the tax abatement program.

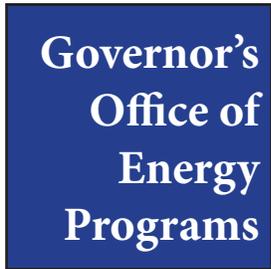


Photo (Left): T Mobile Building in Las Vegas, NV. Green Globes certified (Source: Wikipedia).



Photo (Left): Renaissance Las Vegas, Las Vegas, NV. Green Globes certified. (Source: [www.renaissancelasvegas.com](http://www.renaissancelasvegas.com)).

# State Energy Program Formula Grant



The U.S. Department of Energy State Energy Program (SEP) Formula Grant provides funding and technical assistance to states, territories, and the District of Columbia to enhance energy security, advance state-led energy initiatives, and promote energy efficiency and renewable energy programs and projects throughout Nevada.

Funding for the Program is allocated to states according to a formula written into the federal formula grant regulations. In addition, SEP Formula grant regulations require that states provide a 20% match in funds for each year of the project period. For the most recent project period, the Governor's Office of Energy was awarded the following: PY15 = \$345,320; PY16 = \$345,430; and PY17 = \$345,200; totaling \$1,035,950. The Governor's Office of Energy has focused on four market title areas for the formula grant during this project period: administration, energy efficiency, renewable energy, and alternative fuel vehicles.

## Promoting Energy Conservation and Renewable Energy Development, 2017 Projects

Governor's Office of Energy used SEP funds to sponsor International Energy Conservation Code (IECC) trainings in Las Vegas, Reno, and Elko.



Photo (Right): Erik Makela (Cadmus) lectures on changes in the IECC (Source: GOE).



Governor's Office of Energy awarded a sub-grant to the City of Reno for \$20,000 to advance energy efficiency and green building in the commercial and industrial sectors in conjunction with the City Energy Project.

Photo (Left): Lynne Barker (City of Reno) launches the ReEnergize Reno challenge as part of the City Energy Project (Source: GOE).

Governor's Office of Energy awarded a sub-grant to Lincoln County Power District No. 1 for \$41,500 to install one DC Fast Charger and two Level 2 EV charging stations at McCrosky's Y-Service in Panaca.

Photo (Right): Panaca EV charging station under construction (Source: Lincoln County Power District No. 1).



## Governor's Office of Energy Programs

# State Energy Program Formula Grant

## Program year projects

In PY15, Nevada State Parks received \$9,200 to install a solar power system to power the well at Berlin-Ichthyosaur State Park.

In PY15, Valley Electric Association received \$15,000 to install one DC Fast Charger and two Level II EV charging stations at Eddie World in Beatty.

In PY15, State of Nevada Fleet Services received \$2,500 to install two Level II Electric Vehicle (EV) charging stations, one in Carson City (Richard Bryan building) and the other in Las Vegas (Grant Sawyer building). The stations are available for use by state employees or the public.

In PY15, NV Energy received \$30,000 to install one DC Fast Charger and two Level II EV charging stations at Fox Peak Station in Fallon.



Photo (Above): GOE Director Angela Dykema giving remarks at the EV charging station opening in Beatty, NV (source: GOE)



Photo (Above): Governor Sandoval gives remarks at the opening of the EV charging station in Fallon, NV (source: GOE)

In PY17, Viridity Energy received \$52,589 in funding for a battery storage pilot project for state-owned buildings and facilities.

In PY17, Coral Academy of Science received \$3,600 to retrofit both outdoor and indoor lighting.

In PY17, NV Energy received \$49,887 in funding for a commercial strategic window film pilot project.



SEP funds are made possible through the partnership that local state energy offices have with the U.S. Department of Energy.

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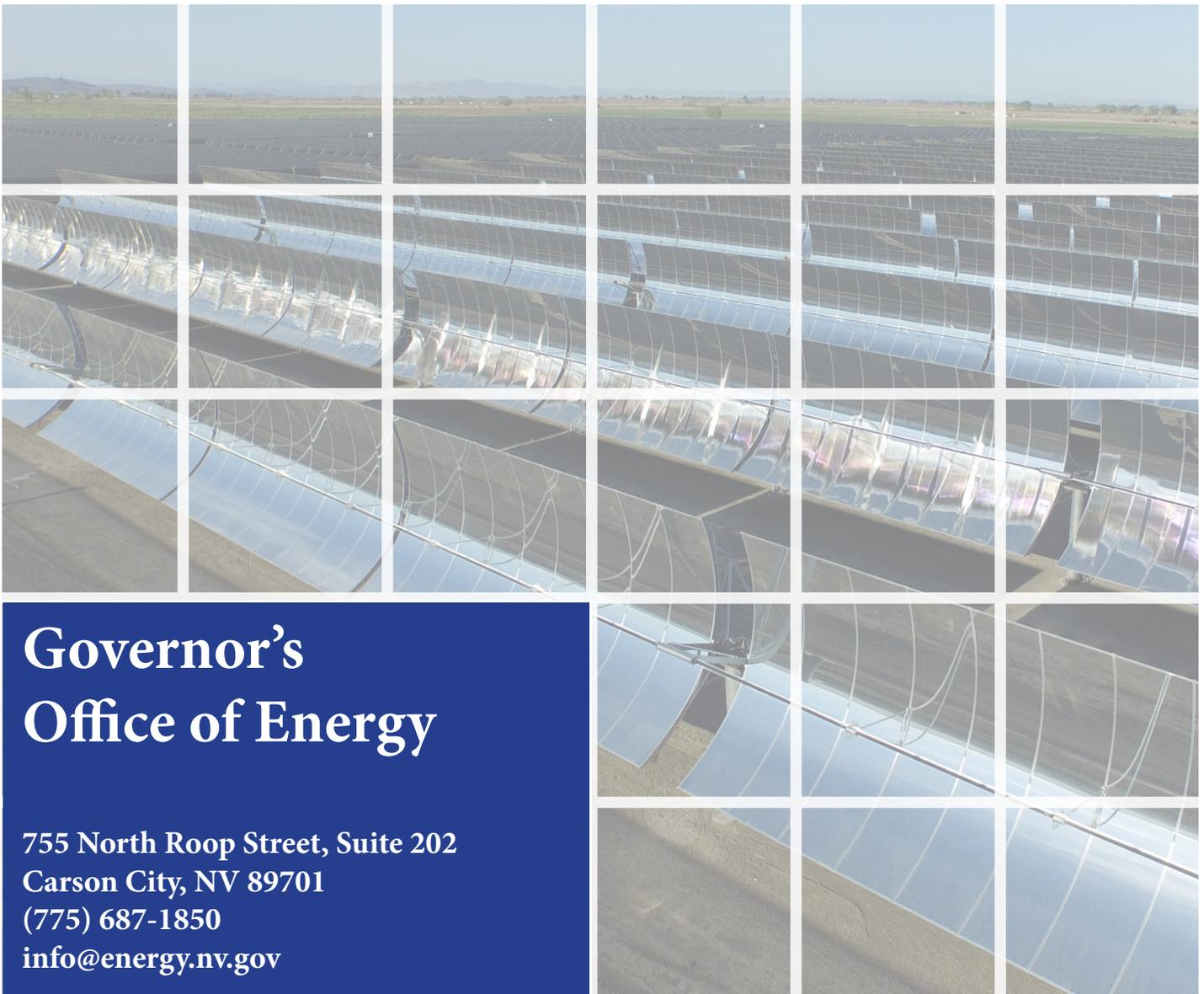
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## Governor's Office of Energy

755 North Roop Street, Suite 202  
Carson City, NV 89701  
(775) 687-1850  
[info@energy.nv.gov](mailto:info@energy.nv.gov)