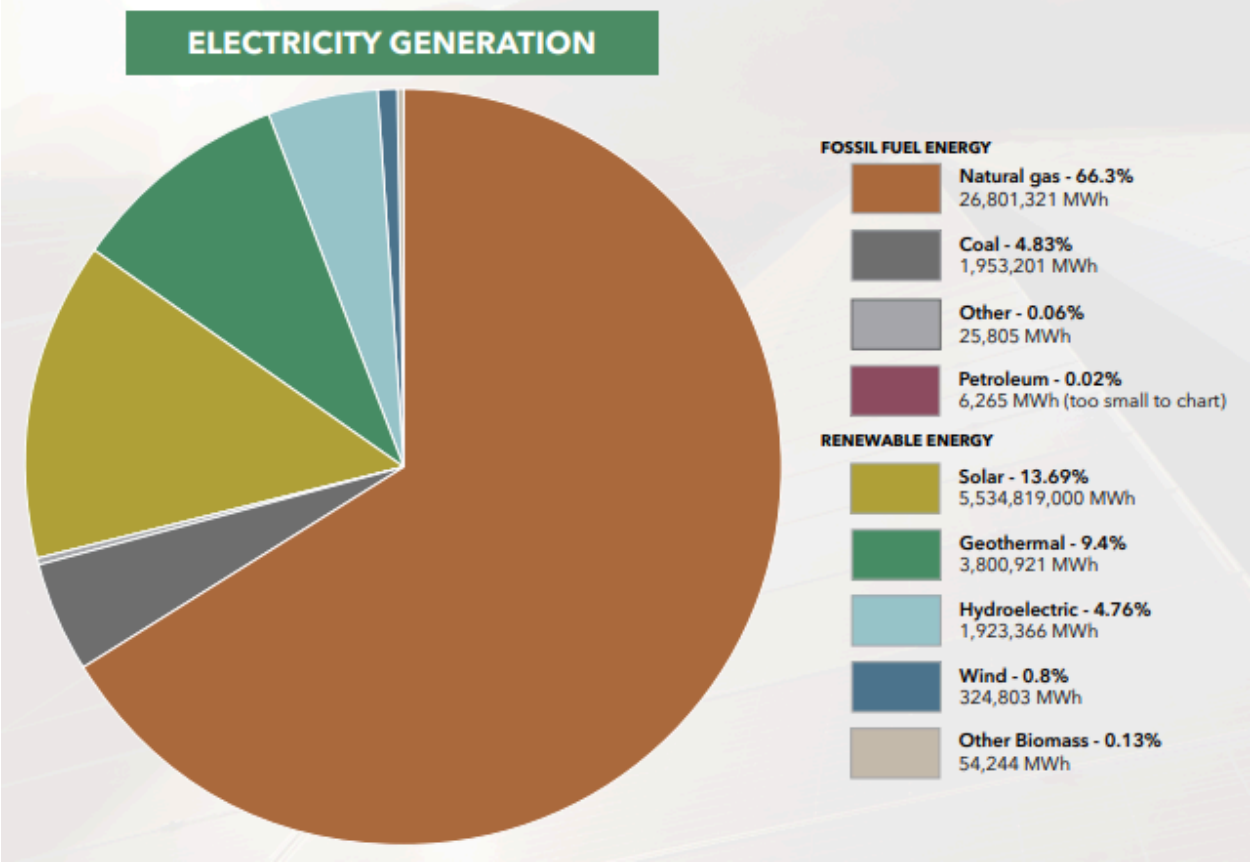
Energy

The Truckee Meadows is served by several electricity providers, including NV Energy, which generates electricity from natural gas, coal, and renewable sources like geothermal and solar power. In recent years, there has been a growing interest in renewable energy in the Truckee Meadows and as of 2021, the Truckee Meadows was getting about 22% of its energy from renewable sources including wind, solar, geothermal, and hydroelectric power. By diversifying our energy production and producing energy locally, the Truckee Meadows can become a more sustainable and resilient region.

Where does our electricity come from in Nevada?



2021 Status of Energy Report, January 2022

One of the most significant energy-related challenges facing Nevada is its heavy dependence on energy importation. The state does not produce a significant amount of fossil fuels nor does it have ample power generation facilities to satisfy demand. According to the Governor's Office of Energy's 2021 Status of Energy Report, approximately 86 percent of the fuel used to produce energy in Nevada is imported from outside the state. This heavy reliance on external sources not only makes Nevada vulnerable to supply disruptions but also contributes to overall greenhouse gas emissions associated with the extraction, transportation, and combustion of fossil fuels.

In recent years this story has been changing as Nevada has taken significant steps towards transitioning to domestically produced renewable resources. Currently, more than two-thirds of the state's electricity is generated by natural gas-fired power plants, with renewables such as biomass, geothermal, solar, wind, and waterpower making up the remainder. The state has also been actively phasing out its coal power plants, which now contribute less than 10 percent of the electricity produced.

(Formatting - center of page look): Nevada's commitment to renewable energy is evident in its efforts to harness its abundant solar and geothermal resources as well as the adoption of the State of Nevada Climate Initiative which sets the goal of have net-zero greenhouse gas emissions by 2050. This mandate was adopted as Senate Bill (SB) 254 of the 2019 Nevada Legislative session along with SB 358 which requires 100% Renewable Portfolio standard (RPS) for electric power generation by 2050. The RPS sets the percentage of electricity sold each year by providers of electric service to Nevada customers that must come from renewable energy. Additionally, the Governor's Office of Energy reported that Nevada has more than tripled its renewable energy production since 2011. Finally, Washoe County's Sustainability Manager, Brian Beffort, stated that the County is committed to achieving net-zero greenhouse gas emissions by 2050, both in county operations and community wide. All of these measures signal substantial shift towards a cleaner and more sustainable energy future.

> **(Callout box – Ormat, include some photos):** Ormat Technologies is a leading global provider of renewable energy solutions, specializing in the development, manufacture, and deployment of geothermal power plants and recovered energy generation systems. Ormat was established in 1965 by the Bronicki family, who shared a vision to export breakthrough technology in the renewable energy sector. At that time, Ormat was known as a pioneer of proprietary turbine designs and focused exclusively on manufacturing power generation equipment. Since then, Ormat has continued to make major strides forward in the geothermal energy and recovered energy industries. Ormat is now a global leader in renewable energy – producing 1.2GW of clean energy.
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> In Nevada, Ormat operates 433 MW from 15 facilities employing more than 400 employees. This provides enough power for 325,000 homes, contributes more than $30 million in operations, taxes, and royalties in Nevada, and avoids 59 million metric tons of CO2 annually. Ormat produces 235 MW for Nevada, and 65 MW for Washoe County. 65 MW can power 52,000 Washoe County homes.
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> There are two Ormat geothermal power plant complexes in Washoe County, Steamboat Hills and San Emidio. They are on both private and publicly leased land. The Steamboat Hills complex is in southern Washoe County and is comprised of five power plants utilizing binary systems and both air and water cooling. The generating capacity of the complex is 84 MW, with the first plant reaching commercial operation in 1992, and the most recent plant reaching commercial operation in 2020. The San Emidio complex has two plants and is located to the north, just outside of Gerlach, Nevada. This plant utilizes a binary, water-cooled system. The generating capacity of the plant is 11 MW and reached commercial operation in 2012.

Nevada's energy consumption is heavily influenced by its tourism sector, which accounts for more than one-third of the state's total end-use sector energy consumption. The industrial and residential sectors

each contribute more than one-fifth of the total energy used, while the commercial sector consumes one-fifth as well. Notably, Nevada's per capita energy consumption ranks lower than that of almost three-fourths of the states, and the state uses almost seven times as much energy as it produces. This disparity highlights the state's significant dependence on external energy sources and the need for increased domestic energy production.

> **(Callout Box):** Truckee Meadows Water Authority (TMWA) has three hydroelectric power plants: Fleish, Verdi and Washoe. All three plants are located on the Truckee River, which runs along Interstate 80 west of Reno. These hydroelectric power plants were constructed in the early 1900s to supply electricity to Virginia City and its mines. Now, more than 100 years old, these run-of-the-river plants still play an important part in TMWA's operations by offsetting power costs.

Despite the challenges, Nevada has made considerable progress in integrating renewable energy into its energy mix. In 2021, renewable energy resources, including solar, geothermal, and hydroelectric power, accounted for 33 percent of the state's total in-state electricity net generation. Solar energy, in particular, played a significant role, supplying about 16 percent of the state's total electricity needs. These statistics demonstrate the state's growing commitment to clean energy solutions and its potential to reduce greenhouse gas emissions.

> **(Callout Box): A Unique Solution:** The Lockwood Landfill is enhancing the environment by providing a source of renewable energy. Through the capture and processing of landfill gas, it is generating enough "green" electricity to power approximately 2,000 homes annually. Landfill gas contains methane gas, a natural by-product of organic waste decay, and a clean-burning fuel for electricity production. In 2012, Lockwood began operating a landfill gas-to-energy facility whereby the captured gas is used to fuel two CAT 3520 engines. These engines generate approximately 3.2 megawatts of electricity. This electricity goes directly into the existing NV Energy electrical grid and is used to meet the power needs of nearby communities.

Our unique landscape allows for the potential of both solar and geothermal energy production. Due to our ample clear days, Nevada leads the nation in solar power potential, and ranks sixth in the nation in total solar capacity and generation. Additionally, Nevada is one of seven states with utility-scale electricity generation from geothermal energy, and we are second only to California in geothermal-sourced power production.

Residents are also able to harness the energy garnered from solar power by installing solar panels to their homes, which is incentivized by a federal program where homeowners can get a tax credit for 30% of the cost of installed solar panels. Additionally, Nevadans may also choose to net meter this solar energy. Net metering allows customers to use energy generated by their solar system to offset their monthly power bill. If their system produces more energy in a billing period than used, the excess energy will be pushed back onto the grid and used by others. Customers earn credits for the excess energy and those credits are recorded on their electric bills. Credits are then applied in the next billing period in which a customer consumes more energy than produced.

(Callout box): Going Solar in Reno

SolSmart is an organization that helps local governments and regional organizations accelerate the growth of clean, affordable solar energy in their jurisdictions. The City of Reno has been recognized as a SolSmart Silver community by making it easier and more affordable to go solar. The criteria achieved to accomplish this includes:

- Created an online permitting checklist, increasing transparency for community members and solar installers.
- Reviewed local zoning codes and identified restrictions that intentionally or unintentionally prohibit solar PV development
- Allowed solar by-right accessory use in all zones (so solar installations don't require special permits or hearings)

TMRPA has several policies for the encouragement of renewable energy as well as the management of energy sites and corridors. The first policy is NR 14 – Sustainable Development, which states that local government and affected entity master plans and other similar plans must promote, encourage and provide incentives for development practices that promote energy efficient building technology, the use of and development of alternative or renewable energy sources, and the use of low impact development (LID) practices. The next policy is PF 18 – Regional Renewable Energy Generation, which requires local government master plans and facilities plans to demonstrate a commitment to the development of regional renewable energy generation including the transmission infrastructure originating from regional renewable energy generation sources. To preserve the viability of existing and future utility corridors and ensure efficiency, policies PF 11, PF 12, and our PRS guidelines establish requirements for regional utility corridors and sites when there are modifications to those that are existing as well as when establishing new sites. Each of these policies plays a part in the encouragement of clean energy as well as the management of existing and future energy in our Region. TMRPA has processed nine cases within the last five years related to large scale renewable energy production. This is a significant increase compared to previous years.

During the NR Plan's development, TMRPA hosted a number of meetings with subcommittee members that were designated experts for each of our Category and Topic Areas. These meetings helped us to gain valuable information and feedback. When discussing solar panels with local specialists, it was discussed that renewable energy and the use of solar panels is positive for reducing our carbon footprint, water conservation, reducing air pollution, and reducing the strain on natural resources. However, it was also expressed that in creating solar farms or renewable energy facilities there may also be a loss of habitat, a disruption of wildlife, and the production is not 100% environmentally friendly. Therefore, it is important to find a balance in their development and ensure that during the planning process the potential land to be used is assessed and analyzed under and environmentally thoughtful scope.

Relevant Agencies:

- Ormat
- NV Energy
- Governor's Office of Energy
- Nevada Bureau of Mines and Geology, Great Basin Center for Geothermal Energy
- Nevada Division of Minerals

Relevant Data:

- Nevada Bureau of Mines and Geology, Great Basin Center for Geothermal Energy
    - Geothermal potential is categorized as
        - High Local Potential for systems greater than 150 degC
        - Regional Potential for systems greater than 150 degC
        - Regional Potential for systems greater than 100 degC
        - Low Regional Potential
- Nevada Bureau of Mines and Geology
    - National Geothermal Data System (bad gateway/not functioning Jan 2022)
    - Subsurface Database Explorer (works but is under construction Jan 2022)
    - Geothermal Area Maps (pdf maps)
    - Featured Publication (books, reports and other resources about geothermal in NV)"
- Nevada Division of Minerals
    - Geothermal drill and production data