

# DISTRIBUTED SOLAR ENERGY IN NEVADA

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In Nevada, renewable energy development has made significant progress through a technology known as Distributed Generation (DG). In order to better understand DG, a general conceptual understanding of the electrical system is helpful: electricity has traditionally been delivered to customers via an electric utility's system of low-voltage distribution lines, known as the distribution grid. The distribution grid is connected to high-voltage transmission lines, known as the transmission network, that are connected to large scale centralized generation plants. In contrast to centralized generation, DG installations are located on a customer's premises and sized to meet a customer's electrical load requirements. Distributed generation systems enable their owners to provide for their own power needs, rather than relying entirely on their electric utility. Notably, DG technology includes the solar photovoltaic (PV) panel systems seen on an increasing number of rooftops around Nevada. Distributed generation technology also includes small windpower and waterpower systems.

Solar DG installations are increasing at a rapid pace, not only in Nevada, but across the country as well. Highlighting this point is data from the Solar Energy Industries Association (SEIA), showing that, in 13 years,



installed solar PV generating capacity in the United States has increased 79,100 percent from the capacity installed in 2000, i.e. 1 megawatt (MW) was installed in 2000, and 792 MWs were installed in 2013.<sup>1</sup> Data from SEIA also shows that from 2012 to 2013, residential PV installed capacity increased 60 percent.<sup>2</sup>

There are many factors helping to advance solar DG development. Perhaps the most obvious and unsurprising factor is that Nevada leads the nation in solar power potential.<sup>3</sup> Another key factor is that PV prices have fallen substantially in recent years. Increasing electric utility rates have also helped incent people to install solar DG, since increasing electric utility rates have the effect of shortening DG system payback periods. In addition, there are federal and state incentives that help people offset the cost of solar DG systems. At the federal level, there is a 30 percent federal tax credit (known as the Investment Tax Credit or ITC) on installed system capital costs available until 2016, for investment in renewable energy.<sup>4</sup>

At the state level, there are incentives specifically for solar DG. In Nevada, for example, the Nevada Legislature, in NRS 701B.005, established the goal of 250 MWs of solar DG by the end of 2021. To achieve this goal, the Legislature has mandated a budget for incentives in the amount of \$255 million. These incentive dollars are paid out in the form of rebates to solar DG system owners who participate in a program administered and marketed by NV Energy, called SolarGenerations.<sup>5</sup> There are also incentive programs administered by NV Energy for windpower and waterpower DG systems, known as WindGenerations and HydroGenerations, respectively. The SolarGenerations,

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WindGenerations and HydroGenerations incentive programs were substantially modified by Assembly Bill 428, passed during the 2013 session of Nevada legislature.<sup>6</sup>

Under the SolarGenerations program, approximately \$185 million in incentives has been spent toward solar DG development. These incentives have resulted in approximately 61 MWs of solar DG installed electric capacity. The Public Utilities Commission of Nevada (PUCN) is the state agency that promulgates regulations pertaining to the incentive programs and approves the distribution of the incentives, through annual plans that NV Energy files with the agency. Finally, on the topic of incentives, it bears mentioning that, according to SEIA, more than one-third of residential PV installations nationally, in the first quarter of 2014, came online without an incentive.<sup>7</sup>

In addition to possibly qualifying for federal and state incentives, DG system owners can participate in an electric billing arrangement known as “net metering.” Net metering is offered in 46 states, including Nevada and the District of Columbia, to small DG system owners. In Nevada, net metering is provided for pursuant to NRS 704.769. Essentially, net metering allows an electric customer with a DG system connected to the electrical grid to sell any net excess electrical generation back to their electric utility.

Another point should be noted about DG systems: for every kilowatt-hour of electricity they generate, they produce what are known as Portfolio Energy Credits (PECs), which can be used by electric utilities to satisfy their Renewable Portfolio Standard (RPS) requirements. Nevada’s RPS is found at NRS 704.7821 and provides that 25 percent of electricity sales must come from renewable energy resources by 2025.

Historically, the upfront cost of installing a solar DG system has been an impediment to increasing growth of solar DG. In Nevada, this barrier may be lifting due to the recent entry into Nevada of the national solar PV installation company known as SolarCity. While many DG systems are owned outright by homeowners, SolarCity has introduced a different approach, whereby their systems can be leased to homeowners. This is known as the third-party ownership model. Third-party ownership of DG PV systems has become particularly popular in the U.S. because this model allows homeowners to avoid upfront investment in the systems, while still providing homeowners with the ability to save money on their monthly electric bills. Finally, it bears mentioning that SolarCity is working with southern Nevada homebuilders to make solar DG systems a standard feature in new homes.<sup>8</sup>

Given Nevada’s solar resource potential, falling PV prices, significant increases in electric utility rates that shorten system payback periods, federal and state incentives, and new market entrants, such as SolarCity, offering ways for homeowners to avoid upfront system cost, the future of solar DG in Nevada has the potential to be very bright.

***Disclaimer: The views and opinions expressed in this article represent the author’s own. ■***

- 1 <http://www.seia.org/research-resources/solar-market-insight-report-2013-year-review>.
- 2 *Id.*
- 3 Energy Information Administration: <http://www.eia.gov/state/analysis.cfm?sid=NV>.
- 4 <http://energy.gov/savings/residential-renewable-energy-tax-credit>.
- 5 <https://www.nvenergy.com/renewablesenvironment/renewablegenerations/solargen/>.
- 6 [http://www.leg.state.nv.us/Session/77th2013/Bills/AB/AB428\\_EN.pdf](http://www.leg.state.nv.us/Session/77th2013/Bills/AB/AB428_EN.pdf).
- 7 <http://www.seia.org/research-resources/solar-market-insight-report-2014-q1>.
- 8 <http://www.reviewjournal.com/business/business-press/woodside-homes-making-solar-panels-standard-feature>.



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