

ADVANCED ENERGY FOR VIRGINIA: A SECURE FUTURES PROFILE



Secure Futures Profile

Solar projects developed by businesses like Secure Futures and its local community partners validate the economic potential of DG to the state economy and Virginia consumers.

Headquartered in Staunton and founded in 2004, Secure Futures builds, owns, operates and maintains solar projects for tax-exempt and business entities that want to reduce their electricity costs. With its seven full-time employees and range of business partners, Secure Futures has rapidly grown to become Virginia's market leader for commercial and industrial scale distributed solar development. Secure Futures has developed many projects throughout the Commonwealth with universities, churches, school districts, state agencies, and hospitals, using its PPA financing mechanism to pass the tax benefits of solar through to its tax-exempt customers. From its first project (104 kW) in 2010, Secure Futures has grown to an installed portfolio of

2.4 MW installed and under management to date, including Albemarle County Public Schools, City of Lexington Public Schools, and the Insurance Institute for Highway Safety, with projections for another 5 MW in 2017. These solar projects have led to millions of dollars in investment, while providing local full-time jobs.

For example, Eastern Mennonite University (EMU) in Harrisonburg worked with Secure Futures to install the first commercial-scale solar project in Virginia in 2010. Project investment totaled \$750,000. Furthermore, based on an article in the peer reviewed journal *Solar Today*¹, the 104 kW EMU array created a net benefit not only for the university, but also for the local municipal utility by reducing the peak demand it had to meet — thereby saving all ratepayers money.² More recently, the University of Richmond partnered with Secure Futures in 2016 to complete the first solar installation under the Commonwealth's PPA Pilot Program. The Richmond project resulted in over \$650,000 in investment.

¹ <http://www.omagdigital.com/publication/?i=264193&p=23>

² <http://solartoday.org/wp-content/uploads/2015/06/EasternMennoniteValueofSolar-ST-MayJune2015.pdf>

What Is Distributed Solar Power?

Distributed Generation (DG) refers to small-scale technologies for generating electricity at or near the point of end use. They can range in size from a few kilowatts (kW), or enough to power a home, to tens of megawatts (MW), enough for a large industrial plant or university campus. The most common type of DG technology is distributed solar photovoltaic (PV), which produces electricity directly from sunlight. Most distributed PV systems are roof-mounted, but some are ground mounted, such as in open fields, atop closed landfills, or on canopies at parking facilities. The technical potential of residential and commercial rooftop solar is estimated to be nearly 470 gigawatts (GW), enough to produce approximately 20% of the electricity generated in the United States in 2014.³

The rapid growth of the solar industry over the last decade makes distributed solar power an important economic driver for jobs, private investment, and tax revenue. According to the 2015 census by the *Solar Foundation*, the solar industry has created jobs nearly 12 times faster than the overall U.S. economy.⁴

Distributed solar power provides numerous benefits including acting as a hedge against price risk associated with grid electricity. It also provides energy managers with a tool for reducing the most expensive component of their electricity costs: the charges for peak demand power.

Corporations with large, energy-intensive data centers, such as Apple, Microsoft, and Google, have been drawn to Virginia. Leases for six of the largest 20 data centers in the United States signed in 2015 were in northern Virginia. These facilities have a

³ Based on an assumed average capacity factor for rooftop PV of 18%

<http://www.lazard.com/PDF/Levelized%20Cost%20of%20Energy%20-%20Version%208.0.pdf>;

<http://www.nrel.gov/docs/fy10osti/45832.pdf>

⁴ <http://www.thesolarfoundation.org/press-release-solar-industry-creating-jobs-nearly-20-times-faster-than-overall-u-s-economy/> (for the 2015 figure, use

<http://www.thesolarfoundation.org/press-release-census-2015/>)

combined electricity demand of more than 60MW.⁵ Distributed solar capacity could give these businesses a way to reduce the amount of electricity they buy from the grid. It would also allow them to source a portion of the energy they use for operations from renewable resources, which is an increasingly important objective for many firms.⁶ For example, Verizon has become a leader in onsite solar by working with SunPower to install over 20 MW of PV at its network facilities.⁷

The U.S. Solar Market Is Growing Rapidly

Distributed solar has achieved remarkable growth over the past five years, becoming a popular choice for business and residential consumers in a wide range of markets, From Arizona to Massachusetts. By the middle of 2015, nearly 800,000 homes and businesses had installed over 9 GW of onsite solar capacity, a 12-fold increase since 2009. The industry added over 2.2 GW in residential and non-residential distributed solar PV in 2014, and 1.3 GW of residential and non-residential distributed PV in the first half of 2015.^{8,9,10} This growth has been driven by significant declines in installed system prices resulting from falling equipment costs, increasing efficiency, economies of scale, and reduced “soft costs” associated with sales and marketing, permitting, and installation. System prices for residential and commercial PV declined 6% to 8% per year, on average, from 1998 to 2013, and are expected to keep dropping.¹¹

⁵ <http://www.datacenterknowledge.com/archives/2016/05/24/data-center-market-spotlight-northern-virginia/>

⁶ <http://www.greentechmedia.com/articles/read/72-of-large-companies-are-actively-procuring-clean-energy>

⁷ <http://www.verizon.com/about/news/verizon-plans-major-expansion-its-site-green-energy-program/>

⁸ https://emp.lbl.gov/sites/all/files/lbnl-188238_1.pdf

⁹ All figures are reported in GW_{DC}; converting to GW_{AC} reduces the capacity figure by about 20%. <http://www.seia.org/research-resources/solar-market-insight-report-2014-q4>

¹⁰ <https://www.seia.org/research-resources/solar-market-insight-report-2015-q1>; <http://www.seia.org/research-resources/solar-industry-data>

¹¹ <http://www.nrel.gov/docs/fy14osti/62558.pdf>



Financing Tools Allow More Customers to Benefit

Consumers and businesses that deploy distributed solar are able to lower their electricity costs and exercise the choice to generate their own electricity. Third-party financing allows them to lease a PV system or purchase the electricity output under a long-term power purchase agreement (PPA), removing a key obstacle: the up-front cost of the system. New loan products are also available that achieve similar objectives. Businesses, municipalities, educational institutions, and other entities are all taking advantage of cost savings through these financing mechanisms.

Current Law Impedes Growth of Distributed Solar in Virginia

As one of the most restrictive energy markets in the country, Virginia has largely missed out on the growth of distributed solar and the jobs, private investment, and tax revenue that come with it. While Virginia, like a majority of other states, allow leases or PPAs for onsite solar, Virginia restricts the total capacity of these installations to a total of 50 MW, and limits their siting to the service area of Dominion Virginia Power. Virginia further requires that installations be at least 50 kW in size, effectively excluding residential customers and many small commercial businesses from participating.

Conclusion – Unleashing Solar for Investment and Jobs in Virginia

A few simple steps would allow the solar market in Virginia to take off. Virginia should allow the use of leases/PPAs statewide and without restriction, as many other states have done. This will give Virginia's citizens and businesses the freedom to use this financing option to install renewable energy on their own property, which will in turn create more jobs and spur investment. A simple comparison highlights the value of good solar policy: Virginia saw \$28 million in solar investment in 2015, and had roughly 2,000 people employed by the solar

industry, a large portion of whom were involved with out-of-state projects.¹² In neighboring North Carolina, where solar policies are more favorable, the solar industry employed nearly 6,000 people and saw investments of nearly \$1.7 billion.¹³ As solar grows in Virginia, residents and businesses will benefit from reduced energy costs, and Virginia-based companies like Secure Futures can increase investment and job creation in the Commonwealth.

2015 VIRGINIA HIGHLIGHTS

\$28 MILLION
solar investment

2,000
people employed by solar

2,000
people employed by solar

¹² <http://www.seia.org/state-solar-policy/virginia-solar>
¹³ <http://www.seia.org/state-solar-policy/north-carolina>

