POWERED
BY FACTS

# 2019
# Solar Report

# Introduction

Powered by Facts is an organization designed to provide information on energy production and consumption in the Commonwealth of Virginia. Residents of Virginia deserve the cheapest, safest and most reliable energy possible. Virginians deserve an unbiased, fact-based source to question, probe and bring transparency to our energy choices. This report serves our annual survey of solar, as we endeavor to track the industry's growth and important policy changes.

## Solar Snapshot[1]

| | |
|---|---|
| Solar Installed (MW) | 892.98 |
| National Ranking | 18th |
| Enough Solar Installed to Power | 96,339 homes |

# 2019 Status of Solar

Virginia is currently ranked 18th in the country in terms of solar deployment. This is an increase from 2018's rank of 19th. The Commonwealth saw a marked increase in utility-scale solar in 2019. However, there was a decline in utility-scale solar installations compared to the number of installations in 2017 and 2018. More residential and commercial solar installments were built in 2019 than any previous year. With more relaxed regulations, net metering has also expanded.[2]

This year, Governor Northam issued Executive Order 43, which is meant to guide the state's objectives for energy production. State-wide goals for renewable energy include 30% renewable energy by 2030 and 100% carbon free energy (which includes nuclear) by 2050. The Governor also expects that 30% of all the energy consumed by Commonwealth agencies will be renewable by 2022.

This report will explore the status of solar-distributed, community, and utility-scale-in Virginia as of 2019. It will also provide suggestions for important changes to be considered in 2020 to pave the way for a more robust solar industry in Virginia.

# Distributed Solar

Distributed solar installations generally refer to those owned by individuals and business owners. With these installations, energy is produced and consumed at the point of generation. Think of a house with solar panels on it, where the energy produced by the panels is also being consumed by the house.

## Net Metering

The net metering program benefits generators of distributed energy by providing a means to sell any excess energy. This also ends up being a great way to offset the installation cost and is a benefit for the buyer who receives inexpensive renewable energy. Due to heavy lobbying by Virginia's utilities, these programs have very strict caps. Recent legislation has relaxed those requirements some, which led to an expansion of distributed solar installations in 2019.

HB 2547 imposed changes on the net-metering requirements in areas served by electric cooperatives. The cap on the generating facilities was increased from 1% to 2% of generating capacity and the cap on the whole program was raised to 7% of the total cooperative system peak. Additionally, HB 1451 and SB 1779 paved the way for school net metering and municipal net metering, respectively.

# Net Metering[3]

| | | |
|---|---|---|
| 2018 | 6486 installations | 55.8 MW |
| 2019 | 9,949 installations | 90.5 MW |

# Power Purchase Agreements

PPAs are an arrangement in which a solar company installs solar equipment on a facility in exchange for that facility agreeing to purchase the power. This system allows ratepayers to have solar energy without having to purchase and maintain solar equipment. The parties sign a contract ensuring that the customer will purchase power for a certain period in exchange for the use of the facility and the installation and maintenance of equipment.

HB 2547 also served to open up the PPA pilot program in cooperative territories. Since the bill's passage earlier this year 40MW have already been installed via PPA, leaving only 10MW of the pilot remaining.

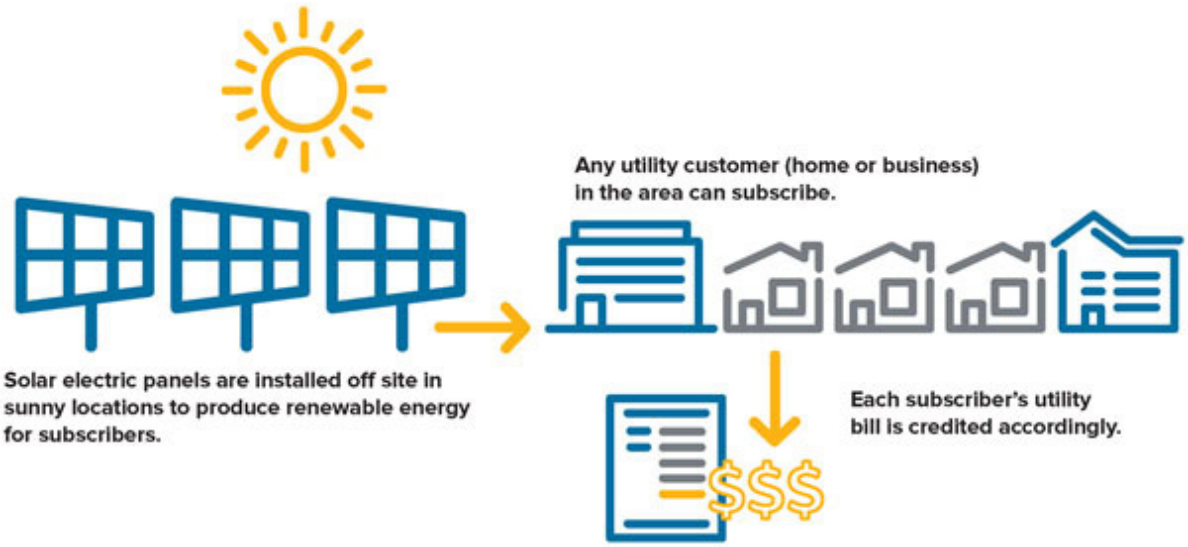
# Utility-Administered Community Solar

## IOU Community Solar

The General Assembly mandated in SB 1393 that investor-owned utilities begin facilitating community solar projects in the Commonwealth. These programs allow customers to subscribe to the system, which requires that they voluntarily agree to the slightly higher price for solar. The programs are to be administered by the utilities, so there is no need to set up a separate interface or infrastructure for new participants. According to the enabling legislation, Dominion's community solar program can reach up to 40MW and Appalachian Power's program can reach up to 10MW. The structure of Dominion's program was approved by the SCC last year and it is now in the "pre-enrollment phase." Appalachian Power is still in the process of developing its program. Any customer residential or commercial customer is eligible to opt-in as long as their energy consumption is under 500kW. Customers will have the option to subscribe to an amount equaling 100% of monthly electricity usage.[4]

# Electric Co-op Community Solar

Electric cooperatives are instituting a program similar to IOU community solar. In 2018, the SCC approved a pilot program for four different distribution cooperatives, all of which are currently served by the Old Dominion Electric Cooperative (ODEC). ODEC will resell solar generation to the four distribution cooperatives, who will then sell it to retail customers in 50kWh blocks. The program is voluntary for cooperatives and their customers, and they have the freedom to design the program and set rates as they see fit.  The Northern Virginia Electric Cooperative has also indicated interest in administering a new program in the near future.




New York State Government[5]

# Utility-Scale Solar

## Distributed

Through the Solar Partnership Program, Dominion has instituted a pilot in which it constructs and operates utility-owned solar facilities on rooftops, commercial grounds, and other public property. So far, Dominion has used approximately 7.2 MWs through 10 different projects of its total allowable 30MWs.[6]

## Large-Scale Projects

Virginia's two investor-owned utilities, Dominion Energy and Appalachian Power, have also endeavored to build several large solar generation facilities to make up the needs of specific consumers. Dominion currently has approximately 476 MW large-scale solar operational.[7] The table below demonstrates Dominion's five largest solar energy consumers. Moreover, there were more than 20 additional large-scale projects (totaling 1,130 MW) in the works at the time of this report.

| | | |
|---|---|---|
| Amazon Web Services | Six Projects | 260 MW |
| Regulated Electric Customers | Four Projects | 76 MW |
| Commonwealth Agencies | Three Projects | 50 MW |
| Facebook | Two Projects | 40 MW |
| Old Dominion Electric Cooperative | Two Projects | 30 MW[8] |

# Storage

Efficient means of storing energy has long been seen as a necessary companion to solar to maximize solar's potential as an energy source. As a result, the Commonwealth is encouraging experimentation with different storage options. Last year, the Virginia General Assembly enacted the Grid Transformation and Security Act, which directs the Virginia State Corporation Commission to establish battery storage five-year pilot programs under which Dominion Energy Virginia and Appalachian Power Company each deploy an aggregate of up to 30 MW and 10 MW of battery storage, respectively. As facilitated by the above-referenced 2018 legislation, Dominion Energy Virginia filed an application with the SCC in August 2019 for three battery storage pilot projects that comprise 16 MW of battery storage in aggregate.

HB 2547 also served to open up the PPA pilot program in cooperative territories. Since the bill's passage earlier this year 40MW have already been installed via PPA, leaving only 10MW of the pilot remaining.

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# 2020 Policy Goals

Virginia's solar capacity has improved greatly in the last three years. There are, however, still important strides to be made to ensure that the Commonwealth is fully capitalizing on the benefits of a robust solar industry. Some of the most crucial policy changes are listed here.

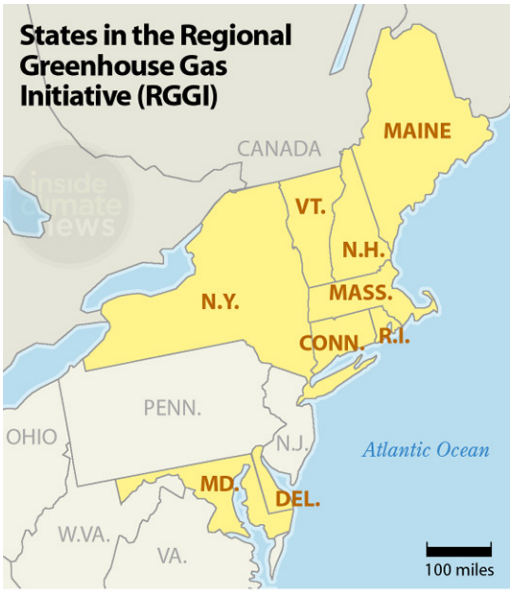
## Raise the PPA Cap

The PPA pilot program in Dominion's service territory has only been operational for a year and already it is in danger of reaching the legislatively mandate cap. Less than 10MW remains before the 50MW cap is reached.[9] The SCC has indicated it will stop accepting applications once the cap is reached. The apparent demand indicates that customers are interested in exploring these PPAs as a means of low-cost investment into solar. The pilot is meant to explore whether the program is viable; now that the legislature has seen that it is, it must admit more consumers.

## Raise the Net Metering Cap

In the short time that the limited net metering program has been operating, many of the service various service territories are already approaching the legislatively mandated cap. These caps are a minuscule portion of the total load of electricity providers. Net metering serves to mitigate the cost of distributed solar while benefiting electricity providers by providing them with low-cost solar energy and securing the grid through more distributed energy production. These benefits will not be fully realized unless a more robust net metering program can develop.

# Regional Greenhouse Gas Initiative




At the behest of Governor McAuliffe, the Virginia Air Pollution Control Board approved a cap and trade rule, which included a provision for Virginia to join the Regional Greenhouse Gas Initiative (RGGI). RGGI is a regional cap and trade system, currently in use by ten other northeastern states. This was a major step forward for Virginia. However, last year the Commonwealth's biennial state budget included a provision barring such an action. Next year, the budget will be reconsidered, and this provision should be removed so that Virginia can move forward in participating in this landmark program.

# Storage

Renewable energy projects without the ability to store surplus energy are seeing a barrier to maximizing efficacy. Solar generally has a predictable output, however, there will naturally be times in which the output is significantly decreased (i.e., nighttime and cloudy days). Battery technology can be paired with solar by storing excess energy in times of increased sunlight. Then, as output wanes, the stored energy can be quickly and easily dispatched to make up any shortfall. Developing solar in the Commonwealth must go hand-in-hand with storage development in order to maximize its potential.

# Endnotes


1 https://www.seia.org/state-solar-policy/virginia-solar
2 https://www.seia.org/state-solar-policy/virginia-solar
3 https://www.dmme.virginia.gov/de/LinkDocuments/VSEDA/2019_VSED&ESA_Annual_Report.pdf
4 https://www.dmme.virginia.gov/de/LinkDocuments/VSEDA/2019_VSED&ESA_Annual_Report.pdf
5 https://www.nyserda.ny.gov/All-Programs/Programs/NY-Sun/Contractors/Resources-for-Contractors/Community-Solar
6 https://www.dominionenergy.com/home-and-small-business/renewable-energy-programs/community-solar
7 https://www.dmme.virginia.gov/de/LinkDocuments/VSEDA/2019_VSED&ESA_Annual_Report.pdf
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