



MEMORANDUM

TO: Dave Eichenlaub
FROM: Tony Smith
DATE: June 24, 2019

RE: Solar PPA Pilot Programming Recap – Comments from Secure Futures LLC

Overview

Since the codification of Virginia’s first PPA Pilot Program in 2013, Secure Futures LLC (SFLLC) has led the way in developing the PPA market in Virginia, with 1.3 megawatts (MW AC) placed in service, and another 3.6 MW underway in the SCC notification program. Sun Tribe Solar has 2 MW placed in service, and another 9.5 MW underway, with other companies making up the balance of the 20 MW registered notifications. This report makes the case that, based on current trends, the balance of 30 MW will be reached well before June 2020, and will approach 500 MW before the end of 2022, such that the Commission should exercise its legislative authority to raise the Dominion PPA cap to at least 500 MW as part of the 2019 bi-annual review, to avoid market uncertainty and disruption of the fastest growing industry in Virginia’s economy this year and for the next two years before the Commission revisits the program.

For the first three years of the program, SFLLC was the only participant in the program. In October 2016, in partnership with the Virginia Community Capital, SFLLC led a one-day training for other Virginia solar companies on how to develop PPA projects, including Sun Tribe Solar, Alt Energy, Sigora Solar, and two others. As a certified B Corp, we sought to strengthen the Virginia-based solar industry, knowing there was more than enough solar potential for all, so that the PPA legislation we helped to sponsor in 2013 would help reduce barriers to solar for all market participants.

It is thus no coincidence, that starting in 2016, solar PPA’s have increased at an exponential rate — see Table 1 on page 3. Recently there has been a large increase in the number of new notifications of intent, bringing the total PPA MW to nearly 20 MW of notifications as of June 12, 2019, with approximately 30 MW remaining before the cap established in 2013 is broached. Between Secure Futures and Sun Tribe Solar, the two principal developers in Virginia to date, we anticipate that the remaining 30 MW cap will be exceeded well before June of 2020. This does not include the recently announced Fairfax County RFP for 117 sites, that we estimate to represent at least 30 MW to 40 MW of potential new solar projects. We foresee significant market uncertainty over the next 12 months as developers assume increasing development risk in racing to submit their notifications before the cap is reached, just as Fairfax County projects more than close the gap.

Despite market uncertainty and regulatory and utility challenges in Virginia, SFLLC anticipates increasing our activity in the Pilot PPA program up to an additional 10 MW to 20 MW of solar projects in 2019-20. Due the impending cap limit, we anticipate being limited to 10 MW before the cap is reached.

Every 20 MW of solar will generate the following estimated economic benefits for the state and for Virginia residents, according to the Jobs and Economic Development Impact model developed by the U.S. Department of Energy, National Renewable Energy Laboratory:

- \$11.2 million economic output (regionals benefits) in Virginia;
- \$5.4 million in earnings in Virginia (salary and wages resulting from project); and
- 85 full-time equivalent job years (1 FTE = 2080 hours) in Virginia.

Market Viability Leads to Job Creation and Increased Economic Output

Integrating on-site solar has a profound financial impact for cash-strapped tax-entities, like school systems, that are able to see on average \$1-2 million dollars in net energy savings over the 20-25 year life of the system on a net present value basis. Utilizing a valuable financial mechanism like a PPA is essential to making these projects financially viable for school communities and other non-profits.

Program Success Calls for Program Expansion

The program has been one of the largest drivers of solar installations in the Commonwealth and has been so successful, in fact, the program is now in danger of hitting its aggregate program cap before June 2020.

- As of June 12, 2019, there were 20 MW of solar projects registered with the SCC notification site.
- The projected growth in 2022 to a cumulative 500 MW is consistent with the year over year rate of doubling growth from the previous year, and adding 50% of the anticipated Fairfax Solar RFP (15 MW). See Chart 1 below.

Chart 1: Projected KW Trends in Dominion PPA program through 2022



- The total capacity of PPA projects in Dominion at end of 2018 was 10.5 MW, up from 2.1 MW in 2017, which in turn was up from 1.2 KW in 2016. .
- These projections are backed by SFLCC projections of 10 to 20 MW of PPA's in 2019, and SunTribe Solar (ST) has a similar pipeline.
- Both SFLCC and ST had significant growth in PPA's in 2018 over 2017 and together account for 85% of the PPA market in Virginia.
- The Fairfax County RFP adds yet another 30 MW to 40 MW of projects that will enter the notification process starting Q4 in 2019.

It is crucial that the Commission increase the cap for the PPA Pilot Program to allow for future PPA project development in the Commonwealth, to ensure the state capitalizes on the job-creation and local economic growth associated with commercial-scale solar projects.

Table 1: Growth of actual PPA notifications and projections

Year	Solar PPA KW notifications		
	Actual	Projected	Cumulative
2013	-		
2014	-		
2015	-		
2016	1,188	1,188	1,188
2017	948	948	2,136
2018	8,343	8,343	10,479
2019	7,920	31,686	42,165
2020		63,371	105,536
2021		126,743	232,279
2022		253,485	485,764
Notes:			
2019 actual is through June, 2019			
Projected 2019 = doubling of 2018 + 50% of Fairfax RFP (15 MW)			
Projected 2020 and beyond = doubling of previous year			

Solar Investment in Virginia

The solar industry is the fastest growing industry in the U.S., creating jobs and investment – and at a rate nearly 20 times higher than the employment growth of the overall economy. Neighboring states have embraced this industry and are experiencing dramatic growth in jobs and investment. As of 2018, the solar industry generated:

- 242,343 jobs nationwide (159% increase from 2010)
- 7% expected employment growth in 2019

To date, Virginia employs 3,890 solar workers. In 2018 alone, Virginia saw a 9% increase in solar jobs with 325 new solar jobs created,¹ a majority of which are associated with installation jobs.

Each year, residential and commercial-scale solar projects consistently create more jobs and local investment than utility-scale projects, and the PPA Pilot Program in Virginia is vital to this equation. Most recently, the 2018 National Solar Jobs Census conducted by *The Solar Foundation* found that 86 percent of solar jobs were in the residential and commercial market segments, while only 14 percent were in the utility-scale market segment².

Yet Virginia remains on the sidelines in experiencing the economic benefits of solar energy. The technology and business models are available to drive solar markets, yet in Virginia, the limitations are in place to significantly stamper on industry growth.

The Commission's Legislative Authority to Raise the PPA Cap

The 2013 Pilot Program legislation in [Chapter 382](#) of the Acts of Assembly, as amended in 2017, authorizes the Commission to raise the cap for the PPA Pilot program as follows:

*1. § 1. b. The aggregated capacity of all generation facilities that are subject to such third party power purchase agreements at any time during the pilot program shall not exceed **50 megawatts**.*

*1. § 1. c. A solar-powered or wind-powered generation facility with a capacity of **no less than 50 kilowatts and no more than one megawatt** shall be eligible for a third party power purchase agreement...*

*§ 2. The Commission shall review the pilot program established pursuant to § 1 of this act in 2015 and every two years thereafter during the pilot program. In its review, **the Commission shall determine whether the limitations in subdivisions b and c of § 1 should be expanded, reduced, or continued.***

We recommend that the Commission raise the Dominion PPA cap from 50 MW to 500 MW, and the APCo PPA cap from 7 MW to 30 MW, on or before December 2019 so as to avoid market uncertainty and disruption of the distributed solar industry, the fastest growing industry in Virginia. We further recommend that the Commission raise the cap for individual projects from 1 MW to 3 MW to better accommodate the needs of public school districts and other entities that have larger facilities. Finally, assuming the Commission elects to consult with various stakeholders, we respectfully request that such consultation be conducted under a docketed public hearing process so that all stakeholders, including solar industry and customers have an opportunity to have their voices heard.

¹ *National Solar Jobs Census 2018*. The Solar Foundation. <https://solarstates.org/#state/virginia/counties/solar-jobs/2018>

² *National Solar Jobs Census 2018*. The Solar Foundation. <https://www.thesolarfoundation.org/wp-content/uploads/2019/02/Infographic-Solar-Jobs-Census-2018.pdf>

VA Solar Portfolio Composition: PPAs and Solar SGAs

SFLLC has 1.3 MW of solar projects placed in service with the SCC PPA Pilot Notification website, and another 4.1 MW of solar projects placed in service under Customer Self Generation Agreement (Solar SGAs) or leases, for a total of 5.4 MW AC of solar projects currently operating in Virginia.

The PPA projects are made possible, in part, by legislation in 2013 that provided for third- party owned PPAs in Dominion utility territory, with regulations enacted by the VA SCC.

The Solar SGA projects reflect a strong demand by commercial scale customers for third- party owned distributed solar, notwithstanding utility opposition to PPAs, other than Dominion.

Why Maryland and North Carolina are succeeding well beyond Virginia

This is not a matter of deregulated vs. regulated states, or more sun vs. less sun. While Maryland represents a competitive electricity market, North Carolina represents a regulated market, similar to Virginia. Yet both of those states are among the most attractive solar markets in the U.S.

This is the result of policies embracing the economic benefits of solar energy. Both states implement the following policies, removing barriers to solar development and generating avenues for industry success:

- Mandatory renewable and energy efficiency portfolio standards
- State tax credits
- Sales and use tax exemptions (Maryland)
- State property tax exemptions
- Power Purchase Agreements (PPAs)
- Maryland provides unlimited access to retail PPAs
- Aggregate net-metering (Maryland)

While North Carolina does include limitations to PPA development at retail and still experiences economic growth, the state leans heavily on a state Investment Tax Credits (ITC), to reduce cost even further.

The case for third-party service models (utility owned vs. investor owned)

The cost of solar equipment has dropped dramatically. In fact, Dominion's 2018 Integrated Resource Plan (IRP) recognizes solar as the only generation asset assuming a continuous price decrease over the next fifteen years.

Nationwide, the single most critical factor for the rapid rise in solar over the past five years has been the widespread adoption of innovative financial models and incentives for solar. Among the most innovative changes occurred in 2002, when SunEdison and Wells Fargo Bank introduced the solar Power Purchase Agreement (PPA) as a new business model.

While technology costs continue to decrease, the upfront capital in purchasing solar equipment remains a significant investment, drawing the payback period out to approximately 8-12 years. Third-party owned and distributed generation and utility scale generation business models, using solar PPA business models, represent two alternatives that enable the retail electric customer to avoid the high upfront capital and maintenance costs.

Third-party owned and distributed generation

Third-party owned and distributed solar offers significant benefits for retail electric customers, as follows:

- Providing clean, renewable energy at a fixed cost for periods averaging 20 years
- No capital cost
- No maintenance cost
- No technology learning curve
- No risk of performance
- Hedge against price uncertainty of grid costs and surcharges
- Sustainability thought leadership (branding)
- Often a lower cost from solar electricity than from the grid.

This latter benefit becomes especially true for commercial electric customers who pay relatively high demand charges, in the range of \$10 to \$22 per KW. Solar offers a path towards consistently and reliably reducing those costs.

Third party PPA service agreements enable customers to achieve the above benefits, by monetizing and passing along the value of the federal investment tax credits for tax- exempt entities that are ineligible for tax benefits.

Utility scale solar generation

Utility owned and operated solar represents a rate-based cost to all ratepayers, yet another way that enables customers to indirectly benefit from renewable energy. In most cases that we are aware of, the customer still purchases grid electricity, even when solar is installed on the customer's property. Customers can choose to pay for renewable energy from the basket of renewable sources permitted under Virginia law, which can include out-of-state hydro, research and development, and bio-gas.

Regulated electric utilities cannot absorb the tax credits and rapid depreciation the same way that for-profit companies can. Instead, utilities are required to take the tax credits and depreciation benefits over the life of the system, vs. the 5-year depreciation schedule available to non-utility owners of generation. Utility ownership of solar generation results in added costs that are passed on to ratepayers, and thus represents an inefficient use of capital.

Third party owned service models or PPAs with utilities, that are owned and operated by investors, place the cost and risk onto these investors, eliminating any risk and price increases to ratepayers.