MARYLAND SOLAR—AN INDUSTRY AT THE CROSSROADS

ABSTRACT
Maryland has developed one of the country’s most successful solar industries since 2008, creating thousands of jobs and more than a billion dollars in economic activity, not to mention gigawatt-hours of clean, domestically-produced energy.

The question for policymakers is whether the state should adjust the RPS to create a glide path that matches installation cost declines and promotes a sustainable and growing industry or rely on market forces to slow the rate of installations to eventually re-establish a balance between supply and demand. As a practical matter, the latter is likely to lead to a decimated industry and significantly reduced economic activity in the sector, an outcome that ultimately benefits no one.

Produced by U.S. Photovoltaics, Inc.
37 North Market Street, Suite 200
Frederick, MD 21701

www.uspvinc.com
(240)-439-4597

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History

Maryland’s solar industry has been a remarkable success story, creating over 4,000 jobs and an estimated $1.5 billion in economic activity in the state since the solar carve-out to the RPS took effect in 2008.

This extraordinary accomplishment is primarily due to the establishment of a Solar Renewable Energy Credit (SREC) market as a result of the Renewable Portfolio Standards (RPS) requirements for electricity suppliers in Maryland to procure a specific and annually increasing percentage of solar electricity as a portion of their total sales. By providing a mechanism to value the environmental attributes of creating non-polluting energy from solar facilities, state policy also served to create a bridge for a nascent industry to become a significant job creator while developing a clean energy economic driver for the state.

MD Solar Growth 2007-2016 Total # of Systems
The distribution of Maryland’s solar facilities consists of a very large number of small residential-scale systems and a small number of very large grid-supply scale systems. Nearly ¾ of the systems in Maryland fall into one of these two categories. In the first 6 months of 2016 more than 46 MW of grid-supply scale solar was added in the state—nearly 150% of the amount of grid-supply scale installed in all of 2015, bringing the total to 153 MW of large-scale solar.

Unlike other states, the Maryland SREC market has been reasonably stable since the passage of the solar carve-out to the RPS in 2007. This stability was not and is not a given. The value of an SREC is partly a function of supply and demand and therefore SREC values can fluctuate widely if the market perceives a risk of persistent over-supply or under-supply. In other states, this has led to volatility that Maryland largely avoided until recently via modest adjustments to SREC policy from time.
to time. This stability has allowed the Maryland solar industry to avoid boom-bust cycles and the Maryland industry has grown steadily creating over 4,200 jobs across the state, some 1,400 of which have been added since the beginning of 2014².

However, beginning in early 2015, SREC prices began to increase – peaking at $185 - and then in 2016 prices began to rapidly decline and are now trading at $25. Partly as a result of

the development of a successful and growing residential-scale industry and partly as a result of an influx of large-scale solar developers and projects, the Maryland market is currently significantly oversupplied and likely to remain so for years unless adjustments to the RPS are enacted.

As of the end of June 2016, Maryland had installed a total of 555 MW of solar capacity compared to the RPS requirement of approximately 350 MW.

² Solar Jobs Census 2015, The Solar Foundation
In the first half of 2016, 144 MW were installed, only 15 MW less than the total installed in all of 2015. Grid-scale solar constituted 78 MW of the capacity added between January 2015 and June of 2016, about 26% of the total added during the period. Current trends indicate a total statewide capacity of more than 625 MW will be in place by the end of 2016.

The question becomes: What if anything should the State do to return to a more stable path? At recent rates of growth, increases in the solar requirements in the RPS alone are probably insufficient to change the current market dynamic and avoid substantial employment losses in the next few years.

**Should The State Act?**

SREC prices should and will decline as the cost of solar PV decreases. Solar PV is unarguably and demonstrably getting cheaper. So, SREC pricing can and will decline and ultimately reach the price of a Tier 1 REC (currently $10-$15). The question for policymakers is whether the state should adjust the RPS to create a glide path that matches installation cost declines and promotes a sustainable and growing industry or rely on market forces to slow the rate of installations to eventually re-establish a balance between supply and demand.

As a practical matter, the latter is likely to lead to a decimated industry and significantly reduced economic activity in the sector, an outcome that ultimately benefits no one.

Volatile swings in SREC prices – as Maryland is now experiencing - create boom/bust cycles that 1) negatively impact jobs and the stability of the Maryland PV industry and 2) undermine the payback assumptions of thousands of Maryland residents and businesses that have installed PV and solar thermal systems.

Maryland has historically avoided extreme volatility but within the last 12-months pricing has swung from a high of $185 to a low of $23. To put this in perspective, a residential PV system owner installing a system in 2017 at a cost of $3.00 per watt would achieve a 7 1/2-year payback period if SREC prices trade at 80% of ACP ($160 in 2017) and a 12-year payback if SREC prices trade at 15% of ACP ($30 in
2017). At the longer payback period currently being experienced, PV installers are closing many fewer sales and are being forced to lay-off employees.

Given the State’s environmental and economic interest in promoting the expansion of solar energy sources, we believe the State should act to achieve a stable, gradual decline of SREC prices vs. the current severe decline of the past 12-months. Given the declining cost of solar PV, PV will soon be the lowest cost source of energy for Maryland rate-payers. In addition, locally generated solar energy has the potential to help ease Maryland’s long-standing energy import deficit. The solar industry simply needs the stability it has historically enjoyed that will allow it to continue to drive down the cost of solar PV and create greater savings and sustainability for the rate-payer.

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3 Assuming net metered electricity costs of $0.13 per kWh in offsettable charges increasing at a rate of 2% per year
What Actions Are Warranted?

It is important to note that solar PV, like most technologies, benefits from economies of scale. The cost of solar PV on a per-watt basis for a grid-supply scale system (2MW+) is currently nearly 40% less than commercial-scale (~500kW) and less than one-half of residential-scale (~10kW). As a result, grid-supply scale projects are significantly less dramatically affected by SREC price swings than the commercial and residential market. In fact, grid-supply scale projects with a virtual PPA are arguably nearing a cost-per-watt basis whereby Tier 1 REC eligibility (i.e., $10-$15 per MWh) may be sufficient to achieve economic viability.

Further, many large, grid-supply scale (2MW+) PV developers are not Maryland-based and can easily “move in or move out” of the Maryland market when SREC prices swing high or low. However, the Maryland-based commercial and residential installers responsible for most of the local jobs in the sector and Maryland businesses and residents with PV installed do not have that luxury. Therefore, the current volatility disproportionately impacts small and mid-size Maryland businesses and consumers.

Recognizing that 1) smaller and mid-size businesses are disproportionately impacted by the currently low SREC prices and that 2) a number of grid-supply scale projects recently completed, proposed and in development are responsible in part for the perception of over-supply and therefore threaten hundreds of jobs and many millions of dollars of economic growth in the state, we would propose that the Maryland legislature consider the following Proposal.

Proposal

1. Modestly increase the solar requirements of the RPS by overriding the Governor’s veto of HB 1106.

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<tr>
<th>Market</th>
<th>Size</th>
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<td>Residential &amp; Small Commercial</td>
<td>&lt;50kW</td>
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2. Limit the size of solar facilities eligible for SRECs to systems that are not larger than 2 MW for systems commissioned after July 1, 2017.

3. Affirm that solar facilities larger than 2 MW may earn Tier 1 RECs.

The increased requirements of HB 1106 would allow for a total solar capacity of 750 MW of solar in 2018, 975 MW in 2019 and 1250 MW in 2020. We believe these modest changes may be enough to bring the residential and commercial solar markets into sufficient balance in 2018 to allow the industry to maintain a sustainable growth trajectory.

It is possible that, given the overhang of excess 2016 and 2017 SRECs that will remain in the market and the additional capacity added under the Community Solar Pilot Program, the market will continue to be oversupplied through 2019 even with these changes. It may well be appropriate to further increase and extend the RPS, including the solar carve-out, beyond 2020 as a number of other leading states have done. In doing so, pulling forward some future solar capacity requirements may be advisable as well.

In any case, we believe these proposed actions represent a necessary first step and will set the stage for a sustainable growth path for the solar industry in Maryland well into the 2020s. We believe that a failure to limit the SREC eligibility of large grid-supply scale systems almost certainly ensures that any capacity-based improvement in SREC prices will be short-lived and ultimately result in the kind of chronic oversupply that will lead to irreparable damage to the solar industry in the state.

The time is now to take the steps necessary to ensure the continuation of a growing and sustainable solar industry in Maryland.