

Request for Public Comment and Status of Proceeding to Investigate Approaches to Mitigate Solar Development Volatility

Executive Summary

The purpose of this document is to advance stakeholder discussion in the public proceeding on approaches to mitigate solar development volatility pursuant to N.J.S.A. 48:3-87(d)(3)(b) (I/M/O The Implementation of L.2012, c. 23, The Solar Act of 2012 Docket No. EO12090860V.) Having taken stakeholder comments on defining “solar development volatility”, its key indicators and its relationship to the SREC market, Board staff requests that stakeholders submit comments identifying potential approaches to mitigate solar development volatility in New Jersey. Staff anticipates using this information to develop a scope of work for a report detailing findings and recommendations for approaches to mitigate solar development volatility including techniques used nationally and internationally.

This document provides a brief history and summary of the proceeding, status from the discussions held at the monthly RE Committee stakeholder meetings, and the comments from various solar industry stakeholders: Renu Energy, Quantum Solar, Effisolar, MSEIA, SEIA, Alpha Inception, and the NJ Grid Supply Association. The comments indicate that there is no conclusive, agreed-upon definition of solar development volatility. However, there are common points made by stakeholders with respect to the relationship between volatility in SREC prices over time and the potential for volatility in the solar installation market. While the concepts, definitions, and potential indicators of volatility varied among stakeholders, key themes emerged:

- 1.) Solar development volatility in this context refers to the NJ solar photovoltaic installation market activity, and the impacts on development costs resulting from SREC price fluctuations and unexpected changes that the solar market has experienced.
- 2.) Currently, there is no reliable way to predict solar market conditions.
- 3.) SREC prices can serve as secondary indicators for solar market development volatility, but are not primary indicators of volatility in installation activity.

History and Background

On July 23, 2012 L. 2012, c. 24 (“Solar Act”) was signed into law by Governor Chris Christie. The Solar Act addresses and amends various aspects of the statute that governs generation, interconnection, and financing of renewable energy. Within the parameters of the state’s Renewable Portfolio Standard (RPS) and Net Metering and Interconnection regulations, the legislation looked to stabilize the SREC market and accomplish goals set forth in the State Energy Master Plan. Pursuant to N.J.S.A. 48:3-87(d)(3)(b), the Board was directed to investigate approaches to mitigate solar development volatility and evaluate techniques used nationally and internally, then detail its findings and recommendations to submit to the Legislature.

On October 4, 2012, at the regularly scheduled Agenda meeting, the Board initiated proceedings to implement various provisions of the Solar Act (Docket NO. EO12090860V, http://www.njcleanenergy.com/files/file/Renewable_Programs/10-4-12-8C.pdf). The Board instructed staff to initiate a proceeding to fulfill N.J.S.A. 48:3-87(d)(3)(b), to investigate

approaches to mitigate solar development volatility. Subsequently, via Secretary's Letter issued October 25th, 2012, the Board provided notice of a public stakeholder meeting on the various provisions of the Solar Act including the proceeding to investigate approaches to mitigate solar development volatility. The meeting notice described the investigation by the Board and its anticipation to be completed by July 23, 2014. The public meeting was held at the NJDEP on November 9, 2012 where staff initiated the discussion with a review of the solar market development data collected and disseminated by Board's program implementation contractors and invited stakeholders to participate in the development of the record for the proceeding by attending the monthly Renewable Energy Committee meetings (RE meetings).

Since the November 9th public kick-off of the proceeding, Staff has sustained stakeholder discussions through dedicated agenda time at the monthly RE meetings. An initial call for comments was made at the December 11, 2012 RE meeting. On December 21, 2012, SEIA submitted salient questions to Board staff as suggested agenda items for the January 7th 2013 RE Committee meeting discussion on solar development volatility. The suggested questions were intended to help define and understand solar development volatility. Staff found these questions useful in guiding the conversation and building consensus around defining the issue, and requested that other stakeholders address these questions in their comments.

- 1) Definition of 'solar market development volatility' and key indicators
 - What is market development volatility? What does this include?
 - What is the timeframe over which volatility is viewed?
 - What are the key indicators that can be used to measure volatility? How easily available are they? What do they tell us about market development volatility?
- 2) Discuss of SREC market construct
 - The SREC market is created by policy. What are the key attributes of the SREC market construct in NJ that contributes to market development volatility or stability?
 - What are the negative effects of market volatility? To ratepayers? To developers? To end-users? To other stakeholders?

At the January 7th Renewable Energy Committee meeting, staff requested comments regarding defining solar development volatility and set an initial deadline for comments of February 1st, which was subsequently extended to February 7th. Comments can be accessed through the NJCEP website at:

<http://www.njcleanenergy.com/files/file/Solar%20Volatility%20Comments.pdf>. The comments and responses to these items are summarized below.

Summary of Comments on Defining Solar Development Volatility

Renu Energy

The definition of solar development volatility refers to frequent, unexpected changes in market conditions that disrupt solar system investment decisions. The major factors that contribute to

investment volatility are the financial incentive structure, state and federal policy decisions, and facilitation (i.e. financing and purchase agreements). The SREC spot market price is a lagging indicator and the solar project pipeline capacity is a leading indicator. The combined influence of the decline in solar system fixed costs and the increase in the performance of solar technology have stimulated the rate of solar capacity adaption.

Volatility is heightened when the magnitude and frequency of change occurs in shorter time periods than business activity cycle. Solar investment decisions are made according to a 6 to 12 month business cycle while the SREC price changes on a monthly basis. Volatility in the SREC market depends on the confidence that prospective owners/developers have in their projections of future capacity. With greater volatility comes greater risk to solar investors, which ultimately raises the costs to ratepayers. In order to temper the volatility that results from this variance there needs to be more market transparency through accurate and reliable information about solar capacity projections.

Several factors that contribute to SREC market volatility may no longer exist in New Jersey. The operational and pipeline solar capacity has remained stable, with a strong SREC supply over the next several years. Information about SREC market conditions, including price and capacity projections, has improved as a result of more systematic procedure for registering and validating solar projects. The BGS auction has also encouraged coordination between LSE's and third party generators to extend their SREC price projections on a 3 year time horizon.

Quantum Solar

The first task to establishing a definition for solar development volatility is to refer to the legislation itself. Since a definition of SDV is not provided in the Solar Act, it is necessary to clarify what the authors of the legislation intended. Considering the solar market conditions at the time of the legislation, changes in sector ownership participation is a major contributor to volatility. Participation in the SREC market has shifted away from ratepayers to larger non-ratepayer third-party participants.

As a result, market volatility may threaten several important aspects of the act, namely, provisions for competitive market participation (subsection l) and making financial incentives available over all ratepayer segments (subsection m). Several ways to mitigate solar development volatility would be to establish feed-in tariffs and move to a 3 year compliance period for SREC retirement.

Staff notes that the Solar Act is widely recognized as addressing the NJ solar photovoltaic market with particular emphasis on the Renewable Portfolio Standard rules; increasing the SREC compliance requirements for retailers of electricity and addressing the eligibility of certain market segments to participate in the SREC market. The legislature did not address ownership models, state a preference for any model or attempt to restrict or influence third party ownership of solar installations in the state. Staff finds no support for an inference that an increase in third party ownership of solar facilities has spurred the legislature to require the Board to report on solar development volatility.

EffiSolar

Net metered solar projects have an impact on SREC market volatility that has not been given sufficient attention by the legislature and BPU, who have primarily focused on the impact of grid supply projects. Despite recent reports that net metered projects represent a significant and growing portion of solar capacity, there is currently no reliable accounting mechanism to accurately project net metered solar development.

Volatility in the SREC market is primarily driven by the rapid growth of net metered solar projects, not grid-supply projects. Proposed regulations encouraging development in net metered projects will continue to destabilize the SREC market. Both grid supply and net metered projects should be regulated and managed on an equitable basis. The BPU should adopt regulations that impose an early mandatory registration process for net metered projects to allow for more accurate and reliable forecasting.

Staff notes that the SREC registration process has evolved since 2007's SREC-only Pilot Program. The SREC registration requirements have been contained in annual compliance filings of the RE Market Manager, contained in registration materials and posted to the NJCEP website. The intent of the registration program has been consistently focused on providing market participants with sufficient information about the potential for solar market development to enable decision makers to anticipate SREC market conditions. Following a lengthy rulemaking process, the SREC registration requirements were codified in the New Jersey Administrative Code in Title 14, Chapter 8 on June 4, 2012. The rules require registration by solar developers or potential owners that wish to participate in NJ's SREC market within 10 days of entering a contract to install or purchase pv equipment. The registration process is structured to provide both net metered and wholesale electric "grid supply" solar projects with the ability to register their intention to construct within an 18 month time period.

MSEIA

Stakeholder discussion has focused on two related but different concepts: volatility in the SREC market and volatility in solar development. The legislation specifically refers to solar development volatility, which in MSEIA's comments refers to the pace of constructing solar projects. In order to initiate an investigation of the concept, the legislature must provide clarification of its definition. The legislation also requires evaluation of techniques used in other states to mitigate solar development volatility. MSEIA notes that these states include Delaware, Connecticut, and New York.

On April 9th, MSEIA presented the results of a model, titled "MSEIA Supply/Demand Model" that was created by MSEIA to demonstrate that the NJ RPS and SREC market construct designed to motivate solar investment is inherently volatile. The conclusion drawn by MSEIA in two scenarios is that "in order for SREC supply and demand to be in balance (EY2016 onward), extreme swings in solar development are necessary" and "if solar development is not highly volatile, then the SREC market swings between undersupply and oversupply".

SEIA

Volatility in future revenue streams drive uncertainty and risk for developers. Mitigating volatility in the revenue stream and reducing risk in a competitive manner can reduce harmful impacts on developers, ratepayers, customers, the NJ economy, and solar industry. Market stability reduces investment costs and thus RPS costs paid by ratepayers. It improves the long-term viability of businesses, promotes job stability, and contributes to the attainment of the state's RPS goals. The Solar Transition Order of September 2007 that established the initial framework for the solar market stated that stable development includes the ability to reduce incentives over time as the cost of solar installations decline and an environment that supports investor confidence.

SREC prices can serve as indicators of market development volatility. Spot prices are determined by the amount of solar supply relative to a fixed amount of demand. Forward prices can be forecasted to anticipate price volatility. Increases in price volatility result in market uncertainty and greater risks to investors. Without a centralized trading platform, the forward SREC market is neither liquid nor transparent. The number of SREC applications received by the BPU is not necessarily a helpful indicator of supply. Several negative impacts that come as a result of solar market volatility include job instability, lack of business development, and higher electricity rates.

Staff notes that when viewing SREC market prices distinctions should be made between the various SREC markets and the overall state of NJ SREC market in general. There are several markets for SREC transactions including a spot market where SRECs are traded as commodities with no associated title being exchanged, forward contracts for delivery of SRECs over longer terms, and the EDC SREC-based finance programs where long term supply contracts are competitively procured by the EDCs. Staff does not view the relative difference between the high price of spot market SRECs when the SREC market was short and the more recent lower price of spot market SRECs since the market has gone long as an indicator of SREC price volatility or solar development volatility.

Alpha Inception, LLC

The adjustments made through the recent Solar Act are not sufficient to stabilize the boom-bust cycle of the current solar market. Without a reliable way to predict market conditions it is difficult to continue the development solar projects. Furthermore, the current market price of SRECs between \$70 and \$80 are substantially below the equilibrium price of \$180 required to sustain solar development. If the current low SREC prices continue demand will outpace supply in 2015 and 2016, which will result in a price spike.

In order to reduce solar market volatility and encourage future development Alpha Inception proposes the following market control mechanisms to be implemented by the BPU. Establishing an Auction Reserve Price ("ARP") would set a floor SREC price and would protect ratepayer solar investments from significant losses. Creating a Price Containment Reserve ("PCR") would hold SRECs that do not clear the ARP until demand has increased. The reserve volumes would gradually be reintroduced to the market would help reduce volatility.

The net savings from the proposed market adjustments is estimated at \$140 million. The proposed changes would reduce volatility would provide jobs and protect ratepayers from future price spikes.

NJ Solar Grid Supply Association

An analysis of the solar installed capacity and development pipeline data indicates that the current published information on pipeline is an unrealistic indicator of the future. SRP registrations are not a reliable source of data to analyze the grid supply pipeline because many registrants have hastily submitted due to the Solar Act, despite many projects having not received land approvals and some may never do so. It is suggested that the BPU use data that is already in their possession, including the data intensive applications for Solar Act's Subsection S.

The history of NJ installation activity shows a low success rate for the grid supply sector. There is a naturally occurring slowdown in the true grid development pipeline, due to the fact that the majority of installations are "Behind the Meter" projects and that grid project development is expensive and time consuming.

Providing a more relevant, accurate and transparent pipeline forecast will help decision makers to make informed decisions and to stabilize the market in the long term. By improving pipeline data, we can reduce volatility costs for all those participating in the solar development market.

Staff notes that due to the lack of familiarity or participation with the SREC Registration Program, its operational history and rulemaking activity, by the majority of grid supply solar developers, registration activity by grid supply developers has been inconsistent. The grid supply development community is relatively small in total number of developers, but controls a significant amount of aggregate project size both registered and unregistered. The SREC registration rules require registration within 10 days of execution of a contract to install or procure solar equipment. The registration period covers one year with an opportunity for six month extension. The organization of grid supply developers and their participation in the stakeholder process used to develop the SREC Registration program rules and facilitate compliance is a positive development likely to mitigate solar development volatility.

Staff's Findings

To adequately address "approaches to mitigate solar development volatility" and build a record in the proceeding which requires a report to be delivered from the Board to the legislature, staff first attempted to find consensus for an agreed-upon definition among stakeholders. Stakeholders have indicated that defining and addressing solar development volatility is important, because possible volatility within the solar market poses risks to solar investors, which increases costs that are passed along to ratepayers; investors depend on SREC revenue streams and unpredictable swings in value can increase finance costs. Identifying and eliminating sources of solar development volatility can help to increase investor confidence, reduce finance costs, reduce costs to ratepayers, and in the end help to achieve the goals set by

the RPS at the least cost to ratepayers. However, stakeholders have not formed a consensus definition for solar development volatility.

In attempting to define solar development volatility, stakeholders identified the following as solutions to mitigate volatility:

- 1.) A call for increased market transparency – more reliable and accurate information on solar projects and prices.
- 2.) The development of market adaptation measures (i.e. feed in tariffs, centralized trading platform, an SREC reserve mechanism incorporated into the EDC finance programs, an SREC floor price, etc.)

The next steps are outlined in order to move forward with the process of establishing a record on approaches to mitigate solar development volatility.

Recommendation for Next Steps

- 1.) Call for Public Comment on potential approaches to mitigate solar development volatility. Due to the lack of consensus in defining volatility, staff requests commenters define the aspects of solar development volatility that are being addressed by their approach to mitigate volatility.
- 2.) Discuss potential approaches to mitigate solar development volatility with stakeholders. Staff suggests that we follow the previous format of submitting written comment to publiccomments@njcleanenergy.com for assembly, distribution and scheduling of a presentation in the RE stakeholder forum.
- 3.) Assemble the record and scope of the work for CEEEP to contract for a study to be completed by May 2014.

Staff requests that stakeholders submit comments by July 1st with the next discussion of potential approaches to mitigate solar development volatility anticipated to be held at the July RE Committee meeting. Staff anticipates scheduling discussions of the comments submitted and approaches recommended in subsequent RE Committee meetings as needed.