Joseph A. Shea, Jr.
Associate General Regulatory Counsel

Law Department
PSEG Services Corporation
80 Park Plaza – T5, Newark, New Jersey 07102-4194
tel: 973-430-7047 fax: 973-430-5983
email: joseph.shea@pseg.com

November 02, 2018

VIA ELECTRONIC DELIVERY & OVERNIGHT MAIL

Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
44 S. Clinton Avenue
3rd Floor, Suite 314
CN 350
Trenton, NJ 08625-0350

RE: Clean Energy Act – New Jersey's Solar Market Transition

Dear Secretary Camacho-Welch:

Public Service Enterprise Group, Inc. ("PSEG" or the "Company"), on behalf of affiliates Public Service Electric and Gas Company ("PSE&G") and PSEG Power LLC ("PSEG Power"), appreciates the opportunity to provide comments on New Jersey's Solar Market Transition as the Board works to implement the provisions of the Clean Energy Act.

PSEG has a long history of partnering with the state and aligning its interests with those of New Jersey. It is in this spirit of partnership that PSEG offers these comments. We offer this input in concert with our comments submitted on October 5, 2018 relating to the Board's proposed rule to close the existing SREC program upon the attainment of 5.1 percent solar and forthcoming comments on the Board's Community Solar proposed rule, as well as comments in other related initiatives and proceedings, including the Energy Master Plan that is currently under review.

PSEG supports and applauds the policy objectives of the State of New Jersey and Governor Murphy – to significantly reduce greenhouse gas emissions with the goal of 50% clean energy by 2030. Reaching this goal will not be easy as there are many obstacles to be overcome, including customer rate implications that cannot be ignored. For example, while instrumental in making the state a national leader in solar development, the existing SREC program has come at a significant cost to electric customers. PSEG supports maintaining New Jersey's place as a national leader in solar, but every effort should be made to minimize the resulting rate impacts. PSEG appreciates the significant challenges presented by the Clean Energy Act: to transition to "a new or modified SREC program" that encourages continued growth in solar renewable energy development, in an efficient and orderly manner, balanced against the cost mitigation measures dictated by the statutorily mandated ratepayer costs caps. It is with an understanding of this difficult, yet shared, goal that we provide the following recommendations.

PSEG believes that the Board should implement the Clean Energy Act in a manner that is consistent with the requirements of the statute, provides transparency and certainty to the market, minimizes costs to consumers without exceeding the statutory cost caps, and maximizes the public benefits of clean energy development. Specifically, we encourage the Board to:

I. close the existing SREC registration program only upon the actual attainment of 5.1 percent, grandfather solar projects approved but not complete under the existing program, and institute measures to ensure the stability of the existing SREC market through the market transition;

II. ensure that statutory ratepayer cost caps are not exceeded through a well-considered transition and by actively monitoring renewable portfolio standard (RPS) costs;

III. establish a market monitor to ensure transparency and competition in New Jersey's solar market; and

IV. develop a successor program that ensures competitive development at prices that reflect actual solar installation costs, minimizes ratepayer impacts, and provides for maximum public benefits.

* * *

I. Transition the solar market with a focus on encouraging transparency, reducing uncertainty, and minimizing ratepayer impacts

In comments submitted on October 5, 2018 in response to the Board's proposed rule, PSEG stressed that since the Clean Energy Act specifies that the Board shall close the SREC registration program "upon the attainment of 5.1 percent", the Board should base this determination upon actual solar generation and actual kilowatt-hour sales. Further, the determination should rely upon official sources of reliable data that are transparent and publicly available.

PSEG further cautioned that the Board should not base its determination upon models or projections that estimate when the 5.1 percent threshold may be attained, as such modeled projections are inherently uncertain and highly sensitive to a host of assumptions concerning anticipated load, solar production, and the timing of solar capacity additions. We noted specifically that uncertainties surrounding future statewide load, solar unit availability, actual solar generation, solar project development and construction of projects in the pipeline, and differences between published projections of solar production and actual SREC supply in PJM's Generation Attribute Tracking System ("PJM-GATS") would make it arbitrary and capricious for the Board to rely upon modeled projections.

Given these uncertainties, PSEG believes that relying upon models, projections and assumptions to prospectively estimate when the 5.1 percent threshold may be attained creates unnecessary risks to ratepayers. In particular, if the Board were to rely upon inaccurate assumptions and prematurely close the SREC registration program, the SREC market may never

actually attain the 5.1 percent threshold. This scenario could unintentionally lock in a structurally "short" market, and cause SREC prices to rise up to the solar alternative compliance payment for the remaining life of the SREC program, resulting in an exceedance of the statutory ratepayer cost caps for years to come, regardless of any potential cost efficiencies that may be achieved under a successor SREC program. In this case, there would remain no headroom under the mandated ratepayer costs caps to achieve any continued solar development, resulting in new development inadvertently being shut out by the high costs of the legacy SREC program.

In lieu of relying upon such projections, PSEG recommends a methodology for the Board to use actual data to determine when 5.1 percent has been attained and grandfather pipeline projects that have been approved under the existing program at the time of attainment of the 5.1 percent. Specifically, solar production should be determined by actual solar generation data provided by PJM-GATS, actual kilowatt-hour sales should be sourced from the Office of Clean Energy's annual statewide load determination, and the pipeline should be defined as projects with active SREC registrations at the time 5.1 percent has been attained. Such data can be monitored and calculated at the end of each Energy Year or on a rolling 12-month basis to provide an even more timely and accurate measure of when 5.1 percent has actually been attained.

Finally, PSEG continues to recommend that the Board consider the implementation of measures to ensure the stability of the existing SREC market through the market transition.

II. Maintain compliance with statutory ratepayer cost caps

Consistent with our concerns about the cost implications related to the Board's determination of when 5.1 percent has been attained, PSEG believes that the Board should actively monitor RPS costs and take action to ensure that statutory ratepayer cost caps are not exceeded. This recommendation is based on the Clean Energy Act's requirement that "the Board shall ensure that the cost to customers of the Class 1 renewable energy requirement [which includes solar] . . . shall not exceed nine percent of the total paid for electricity by all customers in the State for energy year 2019, energy year 2020, and energy year 2021, respectively, and shall not exceed seven percent of the total paid for electricity by all customers in the State in any energy year thereafter."[1]

Currently, there is no mechanism in place to monitor and calculate the ratepayer cost caps, and to our knowledge no mechanism has been proposed to ensure that the statutory cost caps will not be exceeded. Therefore, to ensure that the cost caps are not exceeded, and to enable the Board to establish a successor program that does not exceed statutory ratepayer cost caps, PSEG recommends that the Board establish a transparent mechanism to actively monitor costs under the RPS.

Specifically, we recommend that the Board transparently monitor and publicly report, on

[1] Clean Energy Act, P.L. 2018, Ch.17, Section 38.d(2).

a monthly basis, how the costs of the applicable renewable energy requirement compare to the total amount paid for electricity by all customers in the State. The data for renewable energy costs should be sourced from reliable data sources such as pricing information provided by renewable energy credit transfers in PJM GATS, which should then be confirmed and validated by current market prices evidenced by public exchange monthly settlement prices, such as those published by the Intercontinental Exchange (ICE). To arrive at the total cost of the renewable energy requirements, these monthly settlement prices could then be multiplied by the applicable RPS percentage requirements and aggregated monthly kWh sales data provided by electric distribution companies (EDCs). EDC sales and receipts data could then be used to calculate the total amount paid for electricity by all customers in the State, and compared to the renewable energy costs determined above, to arrive at the percentage that the applicable renewable energy costs are of total amount paid for electricity by all customers in the State. Using this approach, the Board would transparently monitor performance against the ratepayer cost caps and be prepared to take measures necessary to ensure that the cost caps are not exceeded.

III. Foster transparency and competitiveness by establishing of a market monitor

In response to the Board's Generic Proceeding to Review the State of the Solar Market, on December 15, 2017 PSEG submitted comments on how the Board may achieve the state's solar development goals to achieve sustained orderly market development while minimizing costs to ratepayers. In those comments, PSEG recommended that the Board should provide more oversight to the New Jersey solar market to ensure transparency and competitiveness. Absent such oversight, we noted that New Jersey ratepayers unnecessarily incur higher costs than they would under a solar market that is more transparent and competitive.

In particular, PSEG advised that the Board consider the New Jersey Division of Rate Counsel's recommendation, provided to the New Jersey Senate Environment and Energy Committee on June 6, 2016, that the Board establish a market monitoring unit to prevent market manipulation and safeguard the normal functioning of the market. The market monitor would provide independent expert monitoring of the competitive performance and efficiency of the New Jersey SREC market.

Specifically, with regard to market transparency, PSEG noted the problems associated with an artificial scarcity of SRECs in the market, where each year, many SRECs are not formally created (despite the generation of qualifying kilowatt hours of solar energy) and are thus unavailable to the market at the time that compliance obligations are due. To ensure the normal functioning of the market and to prevent manipulation and uneconomic withholding of SRECs, PSEG recommended that the Board require all SRECs generated within a compliance year to be reported to PJM GATS no later than one month prior to the RPS compliance deadline. A market monitor empowered to enforce such a requirement would help to minimize ratepayer costs by ensuring that the full supply of SRECs is both transparent to the market, and available for compliance.

A market monitor would provide a critical oversight function similar to other established energy and environment markets. For example, PJM employs a market monitor to ensure a

robust, competitive, and non-discriminatory electric power market in PJM. The Regional Greenhouse Gas Initiative ("RGGI") employs a market monitor to monitor the conduct of market participants in auctions and in the secondary market to identify indications of market manipulation or collusion and thus ensure the competitiveness of the RGGI market. A market monitor established with similar oversight roles and responsibilities would serve to prevent anti-competitive conduct, ensure greater transparency and competition in the marketplace, and ultimately reduce costs to ratepayers.

IV. Encourage development that minimizes costs and ensures maximum public benefit

The state's successor solar program(s) should encourage competitive development at prices that reflect actual solar installation costs without exceeding ratepayer caps, but at the same time should focus on cost effective approaches with the most public benefits. These types of programs, in partnership with its utilities, would allow the state to achieve public policy goals, such as (i) bringing solar benefits to low-to-moderate income customers, by offering universally-accessible on-site solar or enabling fair access through community solar, (ii) continuing to develop renewable energy on underutilized and underdeveloped sites like landfills and brownfields, or in economically disadvantaged communities that would benefit from the investment, and (iii) designing programs that specifically allocate the incentives and benefits of solar energy to the broadest segments of our customer base, including through programs benefitting public entities and institutions, to the benefit of all citizens.

Once again, PSEG appreciates the opportunity to submit comments on these issues. We thank the Board for its consideration of our submission.

Respectfully submitted,

Joseph A. Shea, Jr.
PSEG Services Corporation
80 Park Plaza, T-5
Newark, NJ 07102

AC POWER · 465 Grand Street Suite 5 New York, NY 10002 · Tel: (646) 370-4588 · www.acpowered.com

November 2, 2018

Aida Camacho, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350,
Trenton, New Jersey 08625

RE: New Jersey's Solar Market Transition from the Solar Renewable Energy Certificate Program ("SREC") to a New Methodology.

Dear Secretary Camacho:

Please accept the following comments from AC Power regarding New Jersey's Solar Market Transition to ensure that the BPU conducts an orderly transition to and creation of a sustainable new program.

11. General comments on issues not specifically addressed in the questions above:

AC Power has not seen or heard any discussion or proposal regarding whether Subsection t projects – solar projects on properly closed landfills, brownfields, and areas of historic fill – will continue to be a part of the new Program. Subsection t projects perfectly align with State land use goals of siting large scale, ground mounted solar projects on lands that have no other or higher use, and thereby convert underutilized properties into productive, revenue generating properties.

Subsection t projects are unique in many ways and will require specific attention when implementing the new Program so as to insure these types of projects are not disenfranchised due to their complexity.

Subsection t projects are the highest cost, highest risk, and longest lead time type of project to develop primarily due to the long and complex permitting and approval process. They require significant involvement from the NJ DEP, BPU, the County planning board, municipality planning board and often the Pinelands. They require more engineering and expert resources thus are more expensive. If a landfill is not properly closed with the DEP the additional costs to close are often so excessive the project is not economically feasible. These expenses are on top of the already complex and timely process for a traditional greenfield grid project, which has high land costs, high property taxes, and a lower revenue stream than a traditional net metered project.

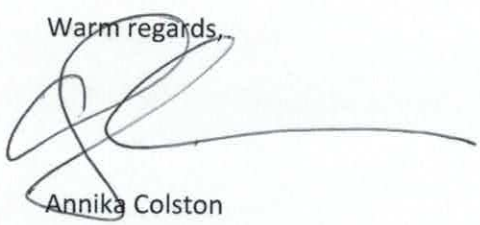
AC Power is actively developing a pipeline of subsection t projects and is concerned that the new Program will not give special consideration to siting solar projects on landfills for either subsection t designation, as a community solar project or for remote net metering. Without specific direction from the BPU regarding the future of subsection t projects or preference for siting solar projects on landfills and brownfields there would be no justification for developing solar on landfills given the extra time, cost and risk.

The BPU should take following steps in order to continue to encourage continued development of subsection t projects:

AC POWER · 465 Grand Street Suite 5 New York, NY 10002 · Tel: (646) 370-4588 ·
www.acpowered.com

1. The BPU should ensure that subsection t applications submitted prior to closure of the SREC program will qualify for the program prior to officially being accepted. A subsection t project must submit an application to the BPU for conditional approval which requires extensive review by the DEP. It can often take up to 6 months for a project to receive a 'conditional approval'. The BPU should make it clear to developers that once an application is submitted, it will be considered as a project that will not be subject to rejection because of market closure during the review process.
2. The BPU should hold a subsection t stakeholder meeting – or even more broadly a meeting to discuss solar on landfills as part of the new Program - that would discuss what incentives or structure is needed for developers to continue to develop projects on these sites that so clearly meet the goals and intention of the Program.

Warm regards,



Annika Colston

BEVAN, MOSCA & GIUDITTA, P.C.
ATTORNEYS AT LAW

222 MOUNT AIRY ROAD, SUITE 200
BASKING RIDGE, NJ 07920-2335
(P) 908.753.8300
(F) 908.753.8301

WWW.BMG.LAW

MURRAY E. BEVAN
mbevan@bmg.law

November 2, 2018

VIA ELECTRONIC AND REGULAR MAIL

The Honorable Aida Camacho-Welch
Secretary, New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
CN 350
Trenton, NJ 08625-0350
Aida.camacho@bpu.nj.gov
Rule.comments@bpu.nj.gov

Re: Stakeholder Proceeding – New Jersey's Solar Market Transition

Dear Secretary Camacho-Welch:

This firm is counsel to grid scale solar developers that focus on solar development projects greater than 10MWac. Our clients appreciate the opportunity to provide comments to the Board on the important topic of New Jersey's Solar Market Transition, and we submit the following comments and responses to several of Staff's questions on their behalf.

Question 7
Are there approaches or concepts the Board should consider for early implementation as it explores new or modified solar incentive programs?

The Board should consider structuring a competitive procurement process for large-scale solar that begins in 2019. This process would provide price discovery that would help inform the Board and stakeholders on how the State can achieve its 2030 50% renewable energy goals without dramatically increasing electric rates for customers. Additionally, the solar federal Investment Tax Credit ("ITC") decreases from 30% to 26% in 2020. Therefore, in order for customers to benefit from the full 30% ITC, it is critical that the state provide a long-term contracting option that would result in awards no later than the third quarter of 2019. With a long-term power sales contract in place, solar developers can then spend capital to lock in the

30% ITC in 2019 by using the Safe Harbor provision created by the US Department of Treasury for the solar ITC. To lock in the 30% ITC in 2019 via the Safe Harbor Provisions, developers must either commence "physical work of a significant nature" (i.e. start construction) or spend at least 5% of the cost of the project (i.e. buy panels or racking) – none of which will likely be done unless the developer has a long-term power sales contract in place.

Question 8
As the Board begins to consider a structure for new or modified solar incentive programs, what goals or approaches are most important to assuring the long-term growth of a sustainable solar industry?

Distributed generation and utility-scale solar provides different levels and types of value to the electric grid and to customers. Solar programs should be designed to take advantage of both types of solar while recognizing that different types of contracts and incentives will be needed for net metered solar, small utility-scale solar, and large utility-scale solar. In-state utility-scale solar will generate the lowest cost power and can help quickly move the needle toward the State's 2030 50% renewables goal. In the end, the Board will need to encourage all types of solar, as well as other types of renewables, in order to meet the State's renewable energy goals in a cost-effective manner, while also providing local environmental and economic benefits.

Question 9
The Clean Energy Act requires the Board, when conducting a study on how to modify or replace the current SREC program, to ensure the program will continually reduce, where feasible, the cost of achieving the renewable energy goals set forth in the Act. How can the Board ensure that the new program will continually reduce the cost of achieving the State's renewable energy goals?

In order to ensure that the State is meeting its renewable energy goals in the most cost-effective manner it should establish several principles that have proven successful in other markets. These include:

1. Allow all solar resources, including in-state large-scale solar, to participate in the new renewable energy programs (although not necessarily all in the same program).
2. Utilize competitive procurements whenever possible, or at least for all solar larger than 5 MWac.
3. Consider the appropriate balance between cost and customer risk. For example, while long-term contracts for energy, capacity and SRECs would expose customers to some additional level of risk, not offering long-term contracts to solar projects for energy+capacity+SRECs results in significantly higher SREC prices, which are ultimately borne by customers.
4. Provide regular and predictable procurements. Developers of utility-scale solar should have opportunities, no less once a year, to secure a long-term power purchase agreement for energy, capacity and SRECs. Uncertainty on timing of procurements, or long periods of time between procurements creates inefficiencies that may result in higher SREC prices.

Question 10
What alternative models in other states or localities should the Board evaluate as it considers the structure of a new or modified solar program?

New York provides a successful and proven model that warrants consideration at least in part in New Jersey The New York model provides for centralized procurements that are conducted by the New York State Energy Research and Development Authority ("NYSERDA"), the New York Power Authority ("NYPA"), and the Long Island Power Authority ("LIPA") These procurements have had the following characteristics:

1. Open to all qualified technologies regardless of nameplate capacity (wind, solar, biomass, landfill gas, & hydro).
2. Awards are based on a multi-factor evaluation that is transparent to bidders and that includes local environmental impacts/benefits as well as economic development benefits.
3. The procurements are open to resources located outside of New York. However, the vast majority of the awarded contracts have been for in-state resources.
4. Contracts are generally of a term of 15-20 years and include RECs, and in some cases energy and capacity. Over-market costs for these contracts are recovered through non-bypassable retail charges for all investor owned utilities and LIPA.

Additionally, New York has a range of separate programs that have changed over time that support smaller resources such as net-metered projects, solar projects <5 MWac, and community solar projects. The New York procurement program has operated for over ten years resulting in more than 3,000 MW of installed utility-scale renewables and REC pricing (for wind and utility-scale solar) that has generally remained in the range of $15-25 for a 15-20 year term (excluding more expensive projects in LIPA's territory).

Another model that may be useful for New Jersey would be a structure similar to the one in Massachusetts where SREC-multipliers are used. For example, perhaps projects larger than 5 MWac interconnected to the transmission system could receive a half SREC. Similar to New York, Massachusetts has conducted competitive procurements for large solar and wind resources that provide long-term energy+capacity+REC contracts. These procurements were conducted jointly by the investor owned utilities with the over-market costs recovered through non-bypassable charges.

Question 11
Please provide general comments on any issues not specifically addressed in the questions above. Please do not reiterate previously made comments, and kindly keep these comments succinct.

Economies of scale with solar have a meaningful and quantifiable impact on the levelized cost of energy for solar. For example, while the clearing price for SREC's in New Jersey remains above $200, other states in the region such as Pennsylvania and New York, which have allowed large-scale solar and out of state solar to participate in their markets have seen SREC equivalent pricing drop into the $10-$25 range. It is crucial that New Jersey adopt new renewable programs that allow large utility-scale solar to participate while also providing long-term contracting for energy and capacity. In order to ensure its 50% renewables goal can be achieved without undue cost to consumers and without shipping the economic and investment benefits out of state (e.g. buying Illinois or Indiana wind RECs), New Jersey should enable utility-scale solar to be part of the solution. Utility-scale solar can be built quickly and cost-

effectively as evidenced by the gigawatts of utility-scale solar being installed every year in all parts of the United States.

The preservation of farmland is an important policy goal of the state. It is important to note that large utility-scale solar is concentrated and contiguous and therefore, will ultimately use less farmland in the aggregate than smaller ground mounted solar. That is, large utility scale solar achieves economies of scale by getting more out of the same amount of fixed infrastructure than smaller scale solar projects are able to produce.

Our solar development clients appreciate the opportunity to provide these written comments regarding this important matter, and they look forward to further collaborating with the Board and other stakeholders in the development of a new solar market road map.

Respectfully submitted,

Murray E. Bevan

PHIL MURPHY
Governor

SHEILA OLIVER
Lt. Governor

State of New Jersey
DIVISION OF RATE COUNSEL
140 EAST FRONT STREET, 4TH FL
P.O. BOX 003
TRENTON, NEW JERSEY 08625

STEFANIE A. BRAND
Director

November 2, 2018

VIA ELECTRONIC MAIL (rule.comments@bpu.nj.gov)
AND HAND-DELIVERY
Honorable Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
44 S. Clinton Avenue, 3rd Floor, Suite 314
Trenton, New Jersey 08625-0350

Re: New Jersey's Solar Market Transition

Dear Secretary Camacho-Welch:

Enclosed please find the original and then copies of the comments of New Jersey Division of Rate Counsel ("Rate Counsel") in connection with the above-captioned matter.

We are enclosing one additional copy of the comments. Please stamp and date the extra copy as "filed" and return it in our self-addressed stamped envelope. Thank you for your consideration and assistance.

Respectfully submitted,

STEFANIE A. BRAND
Director, Division of Rate Counsel

By: Sarah H. Steindel
Sarah H. Steindel, Esq.
Assistant Deputy Rate Counsel

c: OCE@bpu.state.nj.us
Rule.Comments@bpu.nj.gov
Kenneth Sheehan, BPU
Sherri Jones, BPU
Scott Hunter, BPU
Noreen Giblin, Esq., BPU
Rachel Boylan, Esq., BPU
Caroline Vachier, DAG

STATE OF NEW JERSEY

BEFORE THE BOARD OF PUBLIC UTILITIES

In re: New Jersey's Solar Market Transition	)
	)
	)

COMMENTS OF THE NEW JERSEY DIVISON OF RATE COUNSEL ON NEW JERSEY'S SOLAR MARKET TRANSITION

November 2, 2018

INTRODUCTION

The Division of Rate Counsel ("Rate Counsel") would like to thank the Board of Public Utilities ("Board" or "BPU") for the opportunity to provide comments on the issues surrounding the development and transition of the New Jersey Solar Renewable Energy Certificate ("SREC") Program.

The recently signed Clean Energy Act (P.L.2018, c.17) ("Act") directs the BPU to transition the solar market away from SRECS and into a new methodology. Specifically, the Act requires the Board to adopt rules and regulations to close the SREC program to new applicants once solar generation reaches 5.1 percent of total retail sales upon the attainment, and no later than June 1, 2021. On October 5, 2018, Staff issued a notice seeking stakeholder input and scheduling a stakeholder meeting on October 17, 2018. Staff's notice and request for comments outlined 11 questions for discussion. Rate Counsel's comments in response to these questions are offered below.

PROPOSED STAFF SREC TRANSITION QUESTIONS

(1) **How should the BPU identify, determine, and calculate the "attainment of 5.1 percent of the kilowatt-hours sold in the State by each electric power supplier and each basic generation provider from solar electric power generators connected to the distribution system"?**

Comment:

Identification of the attainment of 5.1 percent for the solar carve-out of the New Jersey RPS very much depends on how the Board decides to close the SREC program. Please see Rate Counsel's comments to Question 2 below.

(2) **Would closing the SREC program to new applications before there is an oversupply cause SREC prices to reach or exceed the Class I renewables cost cap (per the Clean Energy Act)? Would closing the SREC program to new applications after there is an oversupply cause SREC prices to drop significantly? Please explain your analysis.**

Comment:

The Clean Energy Act states that the Board must adopt rules to close the SREC program to new applicants upon the attainment of 5.1 percent of retail sales, and no later than June 1, 2021. While this requirement closes new entry into the SREC program, existing eligible projects will continue to receive SRECs for the remainder of their 15-year SREC eligibility period. The Act also established a new cost cap to protect ratepayers from incurring excessive RPS compliance costs. The cap is set at nine percent of the cost of electric sales for Energy Years ("EY") 2019, 2020 and 2021 and falls to seven percent for each year thereafter. This translates to a cost cap of about $900 million for the first three years and $700 million for each year after.[1]

At current retail sales levels and SREC prices, the funds needed to cover the cost of SRECs generated through the current program will meet, or even exceed the cost cap. Assuming a retail sales level of 75 million MWh and SREC prices at $212 per MWh, the total dollar amount needed to fund the SREC program at 5.1 percent would be over $800 million, or 90 percent of the cap for EY19 through EY21. This leaves very little, if any, funds remaining for new programs and even exceeds the cost cap of $700 million for EY22 and beyond.

Current SREC Program Estimated Cost			
Total Retail Sales (MWh)	(a)		75,000,000
Solar RPS (%)	(b)		5.1%
Solar RPS (MWh)	(c) = (a)*(b)		3,825,000
Current SREC Price ($/MWh)	(d)	$	212.00
Total SREC Cost (million $)	**(e) = (c)*(d)**		**810.9**

[1] Assuming total retail sales of 75 million MWh and an average retail rate of $0.134 per KWh.

The Act's new cost cap effectively creates a budget for the cost of all Class I renewable energy credits ("RECs") going forward. And, at current prices, the SREC program will consume, if not exceed the entirety of that budget. Thus, the Board must decide in closing the SREC program, what SREC price shall these existing, or "legacy" projects receive going forward? The Board can choose to either (a) leave the SREC market to determine price as it has since its inception; or (b) identify a sustainable SREC price that will allow legacy projects to continue to cover their investment but not devour all of the funds under the new cost cap.

Rate Counsel supports the intent of the Clean Energy Act to close the SREC program as part of the State's strategy for meeting its overall clean energy goals. While the SREC program has been successful in encouraging over two gigawatts of solar development throughout New Jersey, it has also cost ratepayers over $2.2 billion.[2] In order to meet the State's clean energy goals with the available resources, it will be necessary to reduce the costs of solar development. Rate Counsel believes that closure of the current SREC program is past due, and it is time for New Jersey to move toward a new, more competitively based, solar development program.

Initially, it will be important for the Board to implement a program to meet the reasonable expectations of the owners of legacy projects while leaving room under the cost cap for new Class I initiatives. Rate Counsel recommends that the Board identify a sustainable SREC price level and set an administratively-determined schedule to compensate legacy projects for the remainder of their SREC eligibility. Much like the current SREC and SACP, these prices

[2] This figure represents the total cost of SRECs sand SACP from EY2005 through EY2017. See NJ RPS Compliance History, available at: http://www.njcleanenergy.com/files/file/rps/EY17/NJ%20RPS%20Compliance%20EY%202017%20Final%20Results%2011_2_17.pdf.

would be set on a unit basis ($/MWh), and at a consistently declining rate. More details and specific price recommendations are outlined in Rate Counsel's response to Question 4.

In addition, the Board has two alternatives in deciding when to close the current SREC program. It can: (a) close the program once anticipated generation from total installations have reached 5.1 percent of total retail sales; or (b) use the historic completion rate from the solar installation pipeline and close the program just short of reaching the 5.1 percent target. Rate Counsel notes that the solar installation pipeline has been used repeatedly in the past to reliably project solar installations and should be used here to allow the Board to close the program just short of reaching the 5.1 percent solar RPS target. This will still guarantee enough capacity to meet solar RPS goals, but also save sufficient funds so that other, new and more efficient programs can be initiated while still meeting the cost cap. The cost associated with this methodology is provided in response to question 5 below. If the Board chooses to wait until generation from all installations reaches 5.1 percent of total retail sales, it will likely over-shoot that target, resulting in more and unnecessary funds being spent on legacy projects.

(3) Explain your understanding of what constitutes an "orderly and transparent mechanism that will result in the closing of the existing SREC program on a date certain but no later than June 1, 2021." How much notice is needed, and what specific information should be published?

Comment:

The guiding principles for moving forward with the solar transition are clearly articulated in the Clean Energy Act which calls upon the Board to establish mechanisms that will be "efficient" and "orderly" and that will rely upon "competitive processes" and "competitive procurement."[3] It is important to recognize that the transition called for in the Act is not an indictment of the competitive process, or the fact that market-based mechanisms have been used

[3] P.L.2018, c.17, at 7.

to promote solar energy in the past. If anything, the Act is calling upon the Board to use its regulatory powers to inject more, not less, competition into New Jersey's solar energy markets so that the benefits of solar energy development are attained at the least cost possible. The Act is clear in calling on the Board to "continually reduce, where feasible, the cost of achieving" the state's solar energy goals.[4] Rate Counsel encourages the Board to continue to pursue actions that lead to an aggressive reduction in solar energy development costs for ratepayers. This should be the primary goal of the transition process as envisioned, and explicitly noted, in the Act.

Rate Counsel also cautions the Board not to accept any arguments that suggest this solar transition process should be used as a means to reduce competitive pressures, maintain the status quo, or go beyond what is articulated in the Clean Energy Act. The transition process should not be one that compensates solar developers for bad business decisions and bad prior market outcomes. The Clean Energy Act is not a form of bail-out legislation for the solar industry. The Act does not call for the Board to develop new, financial support mechanisms to support solar investors for past business decisions. This transition should not digress into a discussion of "sustaining" certain elements of the solar industry that have been compensated too much for too long.

The solar transition process should not be one that provides solar developers with some form of guaranteed return, particularly one that is inconsistent with what is needed to develop solar installations. Consider that currently, a 10 kW residential system with an installed cost of $3.50 per watt, needs an SREC of less than $100 to yield a reasonable 8 percent internal rate of return ("IRR") on the investment. Yet, today, SREC prices are over $200, which is double what is needed to incent solar development, even for small and usually more expensive solar installations. This overpayment is exaggerated for larger systems that have even lower unit

[4] *Ibid.*

development costs. The fact that current SREC prices are higher than needed to bring solar to the market means that someone, developer or installation customer, is being rewarded far too much for their efforts. This is part of the reason why the financial support being provided by ratepayers continues to be high and why New Jersey's solar market is usually "long" on capacity development relative to its legislatively required targets.

Rate Counsel does believe, however, that a certain degree of fairness and transparency should be imparted into the process, even though these are not principles explicitly outlined in the Clean Energy Act. The spirit of fairness and transparency can be attained by defining transition mechanisms that are clearly articulated and maintained over a sustained period of time. Rate Counsel believes this is consistent with what the Act calls as an "orderly" process. Rate Counsel also notes that being fair and transparent does not have to come at the expense of, or is in any way at odds with, encouraging competition in solar development. Transparency and fairness means that the rules of the road are (a) clearly articulated; and (b) not altered repeatedly. Wild, speculative movements in SREC prices will not constitute an "orderly" transition. Creating numerous set-asides, grandfathering provisions, and unnecessarily segmenting the market into various components for transitioning purposes will not constitute a "transparent" process since it only confounds the process and will likely result in confusing, mixed and potentially contradictory market signals. The Board can pursue both a fair and transparent process that "continually reduces" the ratepayer cost of supporting solar development.

The key to this SREC transition is to clearly decide and define what will happen to legacy SREC-eligible projects. Creating incentives for future Class I REC capacity is less problematic since there are a variety of ways in which incentives can be established, recognizing some will be more efficient and cost-effective than others. Rate Counsel recommends the Board define a

date to close the current SREC program using the historic completion rate from the solar installation pipeline; and set a schedule of administratively-determined prices for those legacy projects. This will provide a clear, informative path for developers and owners of solar installation programs going forward.

(4) **How can the Board ensure SREC prices are sufficient to support an orderly and transparent closure of the SREC program, while providing enough money under the cost cap to fund new solar incentive programs and other Class I renewables to meet the 50% RPS requirement by 2030?**

Comment:

As noted previously, the biggest challenge for the Board is how to deal with SREC prices and payments to legacy projects installed under the current SREC program. Rate Counsel recommends that the Board close the program by relying on the historic completion rate from the solar installation pipeline and set an administratively-determined price (on a $ per MWh basis) for legacy projects for the remainder of their SREC eligibility. Rate Counsel estimates that a starting price of about $100, which is 40 percent of the current SACP, would allow legacy projects to cover their installation costs and leave room under the cost cap for new Class I REC initiatives. This rate would decline at the same rate of decline as the current SACP.

Setting prices in this fashion would assure investors of legacy projects that their expectations on SREC prices will be honored. And, all retired SRECs at these fixed prices would be used to meet the solar RPS obligation. Table 1 below shows that these fixed-price payments, would leave sufficient room under the cost cap for new Class I REC initiatives.

Table 1. SREC Program Options under the Cost Cap

Energy Year	Solar RPS (%)	NJ Retail Sales (MWh)	SRECs Required (MWh)	NJ Total Retail Sales (million $)	Class I REC Cost Cap (million $)	Scenario 1: SREC Prices at Current Rates			Scenario 2: SREC Prices at 40% of SACP		
						Fixed SREC Price ($/MWh)	Total SREC Cost (million $)	Remaining Class I REC Cost Cap	Fixed SREC Price ($/MWh)	Total SREC Cost (million $)	Remaining Class I REC Cost Cap
2020	4.90%	75,031,955	3,676,566	$ 10,052	$ 904.7	$ 212	$ 779	$ 125.3	$ 103	$ 379	$ 525
2021	5.10%	75,031,955	3,826,630	$ 10,052	$ 904.7	$ 206	$ 787	$ 117.8	$ 99	$ 380	$ 525
2022	5.10%	75,031,955	3,826,630	$ 10,052	$ 703.6	$ 199	$ 763	*over cap!*	$ 95	$ 364	$ 339
2023	5.10%	75,031,955	3,826,630	$ 10,052	$ 703.6	$ 193	$ 740	*over cap!*	$ 91	$ 349	$ 355
2024	4.90%	75,031,955	3,676,566	$ 10,052	$ 703.6	$ 188	$ 690	$ 13.6	$ 87	$ 321	$ 383
2025	4.80%	75,031,955	3,601,534	$ 10,052	$ 703.6	$ 182	$ 656	$ 48.0	$ 83	$ 300	$ 404
2026	4.50%	75,031,955	3,376,438	$ 10,052	$ 703.6	$ 177	$ 596	$ 107.4	$ 79	$ 267	$ 436
2027	4.32%	75,031,955	3,241,380	$ 10,052	$ 703.6	$ 171	$ 555	$ 148.4	$ 75	$ 244	$ 460
2028	3.74%	75,031,955	2,806,195	$ 10,052	$ 703.6	$ 166	$ 466	$ 237.4	$ 71	$ 200	$ 504
2029	3.07%	75,031,955	2,303,481	$ 10,052	$ 703.6	$ 161	$ 371	$ 332.4	$ 67	$ 155	$ 549
2030	2.21%	75,031,955	1,658,206	$ 10,052	$ 703.6	$ 156	$ 259	$ 444.4	$ 63	$ 105	$ 599

(5) What alternative approaches should be considered to allow for adequate compensation of existing solar projects while preserving enough money under the cost cap to support continued growth in solar and other Class I renewables?

Comment:

Please see response to (4) above.

(6) Consistent with the guidelines in the law, how can the BPU ensure continuity between the closure of the SREC program to new applications and the establishment of a new or modified set of solar programs?

Comment:

The BPU can ensure continuity with the current market structure if it ties new initiatives with elements of current market design. The advantage of Rate Counsel's proposed transition identified in the response to Question 4 is that it ties the retirement of legacy SRECs to the current market design and sets payments based upon actual historic prices. As such, the transition will reduce any deviations between the current transition and the prior expectations of those holding legacy SRECs. The proposed model is based upon an average of prior market

experiences and tied to the SACP which has been in place since the origin of the solar set-aside within the New Jersey RPS.

(7) Are there approaches or concepts the Board should consider for early implementation as it explores new or modified solar incentive programs?

Comment:

Rate Counsel recognizes there may be a need for an interim program to sustain solar market development while new and more permanent competitively-based program ideas are studied and explored. Rate Counsel recommends that the Board consider an interim program, of no longer than two years, that is modeled after the SREC-Based Financing Programs conducted by Jersey Central Power and Light ("JCP&L"), Atlantic City Electric ("ACE") and Rockland Electric Company ("RECO"). These programs were first initiated in 2009 and provided for long-term contracts for SRECs that the utilities purchased from solar projects selected through a competitive bidding process in their service territories.

Similar to the previous SREC-Based Financing Program, utilities would periodically issue RFPs to select competitively-bid solar projects with which to enter into fixed-price, long-term contracts. The total solicitation amount on an annual basis would have to be set at a dollar value such that the cost of the interim program and that of legacy projects does not exceed the cost cap. A Solicitation Manager would oversee the program and the auction process. Given that New Jersey stakeholders, (i.e., the Board, Staff, Rate Counsel, utilities and solar developers) all have experience with this program over the past decade, it should be a relatively straight-forward and transparent process to implement. And importantly, this competitively-bid auction format conforms to the standards of "competitive processes," "competitive procurement" and "encourage[s] and facilitate[s] market-based cost recovery through long-term contracts" as required by the Act.

(8) **As the Board begins to consider the structure of new or modified solar incentive programs, what goals or approaches are most important to assuring the long-term growth of a sustainable solar industry?**

Comment:

As required by legislation, the Board needs to ensure an orderly and transparent transition. As part of that process, the Board should refer back to the guiding principles of the Act and rely upon competitive processes to ensure the most cost-efficient procurement of solar and other Class I REC resources. The transition and any efforts moving forward should come at minimal ratepayer expense. The fact that the Legislature, and now the Board, finds that a change in the current solar market design is necessary indicates that the prior design has been inadequate, and the cost of this inadequacy has been paid for by ratepayers. This is simply not an equitable outcome. Creating additional and new preferences for solar developers, at the expense of ratepayers or even the development of other Class 1 renewables, should be avoided.

(9) **The Clean Energy Act requires the Board, when conducting a study on how to modify or replace the current SREC program, to ensure that the program will continually reduce, where feasible, the cost of achieving the solar energy goals set forth in the act. How can the Board best ensure that the new program will continually reduce the cost of the achieving the State's solar energy goals?**

Comment:

The Board needs to recognize two important economic facts. First, the cost of this transition will be determined by how the Board decides to close the current SREC program and define SRECs for the remainder of legacy projects' SREC-eligibility. Second, SREC holders, that can include but are clearly not limited to those owning or physically supporting a solar installation, have an incentive to get the most significant return they can get on their SRECs regardless of whether or not this return is "reasonable." Thus, the Board will likely have to "hard-wire" some kind of "cost reduction" outcome into its new market design.

Going forward, the most important concept in ensuring that new programs continually reduce the cost of achieving the State's solar energy goals is to incorporate competition. To the extent that new programs are needed, Rate Counsel supports using competitive bidding and other forms of market-based mechanisms for stimulating new solar development. Rate Counsel recognizes that the Clean Energy Act identifies some market segmentation of new programs to the extent these programs are needed. Rate Counsel cautions the Board to not overly segment the market and to set reasonable targets for segmentation that are consistent with prior experience. The Board has not been successful in the past in defining market segmentation goals, particularly with the long-term solar contracting program and utility-based programs. Setting unreasonable segment targets could lead to a shortfall in reaching the Clean Energy Act's solar energy goals.

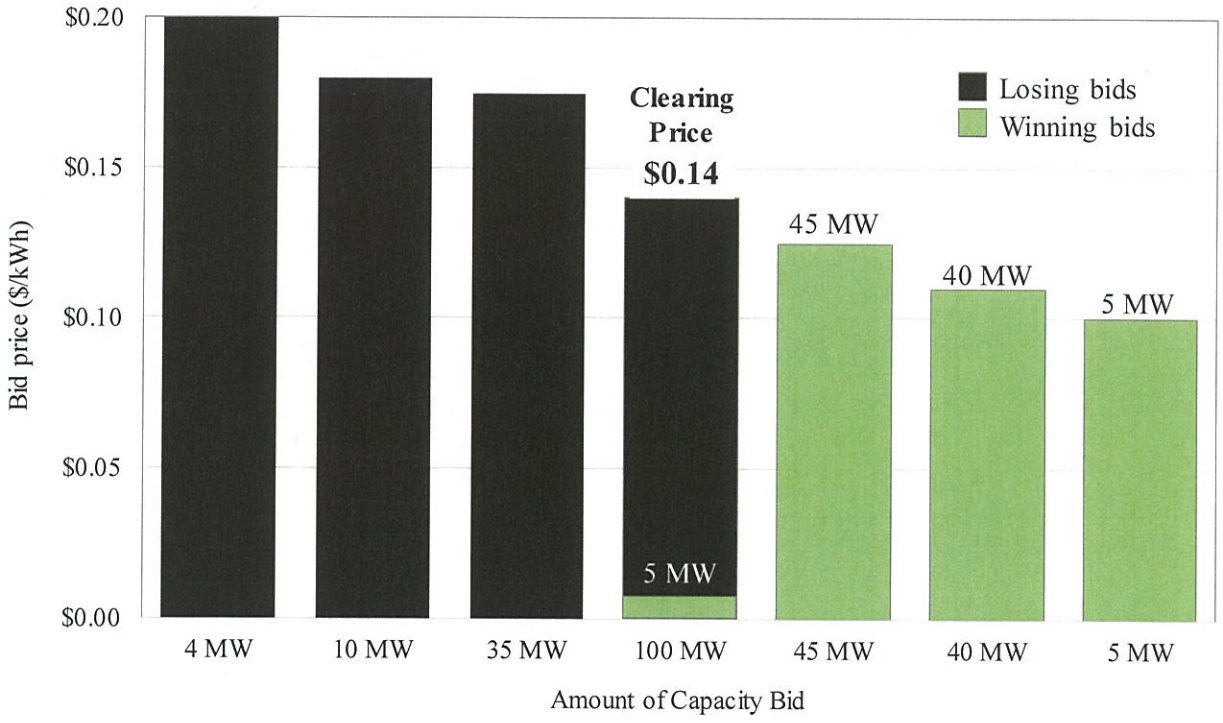
(10) What alternate models in other states or localities should the Board evaluate as it considers the structure of a new or modified solar program?

Comment:

Again, Rate Counsel reiterates the guiding principles of the Act and the notion of competitive processes, competitive procurement and the continual reduction of the cost of achieving solar energy goals. Rate Counsel recommends the Board study competitive procurement programs initiated in other states. One example is the Solar Massachusetts Renewable Target ("SMART") Program. Massachusetts launched the SMART Program in November 2017 as an incentive program designed to procure solar generating capacity based on long-term fixed-price contracts for projects less than 5 MW. The program is structured as an auction and had an initial request for proposal ("RFP") for projects larger than one MW and a total auction capacity of 100 MW. A price cap of $0.15 per kWh was set for projects of 1-2 MW

and $0.14 per kWh for projects of 2-5 MW.[5] The competitively bid projects set the compensation rates for the program.

The figure below provides an example to show how projects with the lowest bids would be awarded contracts, at the clearing price of the last, or highest bid project up to 100 MW. In this example, contracts were awarded to projects bid at the lowest price of $0.10 per kWh totaling 5 MW (on the right side of the graph). After that, projects bid at $0.11 per MW totaling 40 MW were awarded contracts, as well as projects bid at $0.125 per kWh totaling 45 MW and projects bid at $0.14 per kWh totaling 5 MW. All of these projects will receive the clearing price of $0.14 per kWh.



The clearing price set by the large projects (greater than 1 MW) in the auction is also used to determine prices for smaller projects. The clearing price, or base rate is multiplied by a

[5] SMART Competitive Procurement, available at: https://www.mass.gov/service-details/smart-competitive-procurement; and SMART Informational Webinar Q&A, available at: https://www.mass.gov/files/documents/2017/05/zu/3-24-17-solar-massachusetts-renewable-target-q-and-a.pdf.

compensation factor for projects depending on size. For instance, projects between 500 kW and 1,000 kW receive a rate that is 110 percent of the $0.14 per kWh base rate, or $0.154 per kWh. Similarly, small projects of less than 25 kW receive a rate that is double the base rate, or $0.28 per kWh. Compensation adders are also established for other attributes such as location, community shared units, low income properties, public entities and storage.

(11) Please provide general comments on any issues not specifically addressed in the questions above. Please do not reiterate previously made comments, and kindly keep these comments succinct.

Comment:

Rate Counsel has nothing additional to add at this time but may supplement and/or expand upon these comments as it continues to collect information, conduct its own independent research, and reviews and evaluates the comments provided by other parties.

COALITION FOR COMMUNITY SOLAR ACCESS

1133 15th Street, NW | 12th Floor
Washington, DC 20005
202-540-9162 | info@communitysolaraccess.org
communitysolaraccess.org

November 2, 2018

Ms. Aida Camacho-Welch
Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
3rd Floor, Suite 314
CN 350
Trenton, New Jersey 08625

Via Electronic Submittal: rule.comments@bpu.nj.gov

Re: New Jersey's Solar Market Transition – Stakeholder Meeting

Dear Ms. Camacho-Welch:

The Coalition for Community Solar Access ("CCSA") respectfully submits these comments on the questions posed by the New Jersey Board of Public Utilities ("BPU" or the "Board") regarding the closure of the New Jersey's existing Solar Renewable Energy Credit ("SREC") market and the creation of and transition to a successor program. Given the complexity involved in designing a successful transition of the SREC market we look forward to continued engagement on these topics on an expedited basis.

CCSA has sought to outline its proposals in response to the questions as they were presented by the BPU. We note that some responses address issues raised in multiple questions. Rather than reiterating our comments in response to relevant questions we have simply responded to the most closely related question.

Creating an interim SREC program that leverages the cost-effectiveness and equity of community solar projects while encouraging varying project types that meet New Jersey's policy objectives.

Community solar creates an opportunity to achieve the state's clean energy and climate goals cost-effectively while empowering customers who heretofore have been unable to participate in the transition to a clean energy economy because they are renters, have a home or business that cannot host a solar system, or are otherwise unable to be a rooftop solar customer.

In its July 31st, 2018 comments provided to the Commission pursuant to the development of the Community Solar Pilot Program, CCSA demonstrated that the current 5.1% solar carve out in the Renewable Portfolio Standard will be unable to accommodate community solar projects given

the large number of other projects already in the queue for registration in the SREC program. It is especially important that the community solar pilot is well structured in light of the uncertainty in the SREC market. We believe that, with modifications, the draft community solar regulations have the potential to succeed in developing a robust community solar market even with the uncertain tumultuous state of the SREC program. Key among those modifications will be a first-come, first serve application process with high maturity requirements for projects; a monetary bill credit based on an adjusted retail rate credit; and modifications to make low-and-moderate income (LMI) community solar projects viable.

As noted by a number of parties at the October 17th stakeholder meeting on SREC market transition, there is a need for an interim SREC program to enable continued solar development in all market sectors. An interim SREC program, if established, would create an opportunity to support projects in the community solar pilot program. An interim SREC program could also help achieve some of the Board's associated policy goals such as enabling the LMI projects which are targeted to constitute 40% of the community solar program and are likely to be challenging to develop in the absence of modifications to the program regulations and additional financial supports. Given the time constraints for developing the interim SREC program, and the need to reduce costs in comparison to the existing SREC program, CCSA recommends the BPU adopt a lower alternative compliance payment coupled with a set of SREC fractions or factors for different project types, similar to the construct of Massachusetts' SREC II program.

It is critically important that any interim SREC program not limit the potential size of the community solar pilot program or the access of community solar pilot projects to SRECs. Vote Solar has demonstrated that a 450MW pilot program could create 1,778 jobs, provide $800 million in economic opportunity for New Jersey, and provide clean energy access to over 30,000 customers at very low cost to ratepayers: less than the cost of a postage stamp per month[1]. At the same time, GTM Research has demonstrated there is the near-term market potential for 3.3GW of community solar in the state serving 3.6 million customers[2]. While the draft community solar pilot program regulations published in the State Register on October 1st do not specify a 450MW (150MW per year) pilot program they wisely provide an opportunity to increase beyond the minimum 75MW per year after the first year of the program. Given the cost effectiveness of community solar and the fact that community solar is the only way for the majority of New Jerseyians who can't place a solar system on their roof to directly participate in and benefit from local solar, any interim program should not impose SREC targets that limit the growth of the community solar market. Instead of MW targets, SREC factors can allow for more capacity to be deployed at lower cost.

1. *How should the BPU identify, determine, and calculate the "attainment of 5.1 percent of the kilowatt-hours sold in the State by each electric power supplier and each basic generation provider from solar electric power generators connected to the distribution system"?*

[1] Vote Solar, "Community Solar: Ready to Work for New Jersey" (September 2018). Available at: https://votesolar.org/usa/new-jersey/updates/cs-pilot-can-create-800-million-dollars-benefits/

[2] Greentech Media, "The Vision for U.S. Community Solar", Executive Summary, p.17. Available at: http://bit.ly/2JWfKyT

As discussed in our comments on the development of community solar pilot regulations submitted to Secretary Comacho-Welch on July 31st, 2018[3], there will likely be sufficient applications in the SRP application pipeline before the community solar program opens such that the 5.1% SREC market will be effectively closed to the participation of community solar projects. If the BPU defines "attainment" to be based solely on installations, rather than installations and pipeline, there is significant risk of creating an oversupply of SRECs and precipitating a market crash. We support the recommendation of other solar groups to define "attainment" as installations + pipeline *so long as* the BPU simultaneously open an interim program that provides a stable, bankable support for all projects in the community solar pilot program.

2. *Would closing the SREC program to new applications before there is an oversupply cause SREC prices to reach or exceed the Class I renewables cost cap (per the Clean Energy Act)? Would closing the SREC program to new applications after there is an oversupply cause SREC prices to drop significantly? Please explain your analysis.*

CCSA provides no comment at this time

3. *Explain your understanding of what constitutes an "orderly and transparent mechanism that will result in the closing of the existing SREC program on a date certain but no later than June 1, 2021." How much notice is needed, and what specific information should be published?*

As noted in our response to Question 1, we would support the BPU defining attainment in terms of SRP applications, which would precipitate a shorter closure of the SREC program ***so long as*** the BPU simultaneously opens a stop gap program to support the broader solar industry between now and the enactment of a long-term successor program.

CCSA supports the creation of a 2-year interim SREC program as suggested by a number of solar parties at the BPU's October 17th workshop on this issue. However, this support comes with three important contingencies: 1) that the interim SREC program not constrain the size of the community solar market during the pilot program, particularly in years 2 and 3 which may be expanded by the Board; 2) that the interim SREC program not limit community solar access to the SREC market, and 3) that an interim SREC program not put off the opportunity to support certain benefits that community solar projects can provide but which entail costs not currently sustainable under a pilot program reliant on Class I RECs. These benefits can include the ability to develop on already disturbed sites- such as brownfields, warehouses, parking lots, etc.- or serve low- and moderate- income customers.

One important benefit of creating an interim SREC program is that the state can take advantage of the lower SREC prices needed to support community solar projects which deliver the benefits of distributed generation with the economies of scale of larger projects that don't need to be sited at a customer's property. At the same time, reduced costs could provide "head room" under the

[3] CCSA comments on development of a community solar pilot program (filed in BPU Docket No. Q018060646, July 31st, 2018), pp.21-24

cost cap to support additional incentives for projects that serve low-to-moderate income customers or are located on already disturbed sites. We outline a concept based on Massachusetts' SREC II program in response to Question 7.

4. *How can the Board ensure SREC prices are sufficient to support an orderly and transparent closure of the SREC program, while providing enough money under the cost cap to fund new solar incentive programs and other Class I renewables to meet the 50% RPS requirement by 2030?*

Creating an interim SREC program can support additional development at lower cost while ensuring there is continuity between the current program and whatever permanent successor is developed pursuant to the 2018 Clean Energy Act. By closing out the 5.1% SREC program before it is oversupplied legacy projects can be protected from SREC price suppression in an oversupplied market. Creating an interim program provides for continuity for development of new projects. However, even with these reduced costs it is important that action is taken so that the cost caps in the 2018 Clean Energy Act do not provide an undue restriction on meeting the state's clean energy goals, including the development of a community solar market.

5. *Are there approaches or concepts the Board should consider for early implementation as it explores new or modified solar incentive programs?*

The Massachusetts SREC II program structure is a proven model that can be adopted, with modifications, in a short time frame to bring down costs while achieving goals the state has, such as supporting solar projects on already disturbed sites and providing low income customers the ability to lower their electric bills by choosing solar.

The Massachusetts SREC II program provided fractions ("factors") of SRECs to each MWh of generation from different projects. Figure 1 below reproduces a table of different "market sectors" and the SREC factor provided to them. Using round numbers for ease of example, one can think of this factors working in the following manner: if an SREC was trading at $100 per REC, a residential project, a community shared solar project, a project on a parking canopy, or any other "A" sector project would receive $100 for each SREC produced; rooftop projects and non-community shared solar commercial-scale ground mounted projects in Market Sector "B" would receive $90; and landfill and brownfield projects and other Market Sector "C" projects would receive $80, while all other projects would receive $70. The Massachusetts Department of Energy Resources (DOER) retained the authority to set the number of MW permitted in the Managed Growth category each year. This structure allowed the state to drive solar development toward policy-preferred project types while supporting a robust and diverse market and ensuring via the managed growth mechanism that the market did not become oversupplied.

Figure 1: Initial Massachusetts SREC II Factors[4]

Market Sector		SREC Factor
A	Residential, Parking Canopy, Emergency Power Generation, Community Shared Solar, or any Unit with a capacity <= 25 kW.	1.0
B	Building Mounted, or ground mounted Unit with a capacity > 25 kW with 67% or more of the electric output on an annual basis used by an on-site load.	0.9
C	Landfill or Brownfield, or a Unit with a capacity of <= 500 kW with less than 67% of the electrical output on an annual basis used by an on-site load.	0.8
Managed Growth	Unit that does not meet the criteria of Market Sector A, B, or C.	0.7

In addition to providing stability and overall reduced costs, BPU has a number of objectives to meet on realizing non-energy benefits such as supporting development on already disturbed sites such as brownfields, landfills, parking lots and rooftops and supporting an ambitious goal of 40% of community solar program capacity serving low- and- moderate income customers.

Community solar is well positioned to develop projects on these types of sites such as rooftops, parking lots and other sites due to its ability to be sited remotely from customers. For example, a warehouse may have a roof that can support a solar project but insufficient load from the tenant occupying the building to justify building a project. However, the volume of available and usable rooftops, parking lots, brownfields, and landfills is more constrained than it first appears when you consider usable space, landowner interest and property values, excessive contamination or unclosed sites. Most importantly, development of these sites can add between $0.05- 0.08/kWh of cost to projects as a result of additional equipment costs, installation work, and financing costs. In other states such as New York and Massachusetts, these incremental costs have been covered through SREC programs or incentive programs.

Given some of the policy objectives the state has articulated in various venues, the table below gives an illustrative set of project types for which different factors could be applied. The combination of factors for various siting configurations as well as customer types can best drive the market toward preferred policy outcomes while enabling flexibility in business models and a robust, diverse market. Mathematically, this requires factors that are set as >1.0 multipliers, such that a given project could combine one customer-based factor and one siting-based factor by summing the base SREC value and the incremental value offered by qualifying for each factor. For example, a Rooftop Community Solar project serving 50%+ LMI customers would receive

[4] Table from initial regulations as presented by Massachusetts Department of Energy Resources. The presentation, with table, is available at: https://www.mass.gov/doc/commissioner-sylvia-presents-final-design-of-srec-ii-program

an SREC value calculated as:
(BaseSREC*RooftopFactor)+(BaseSREC*CommunitySolarLMIFactor - BaseSREC)

In subsequent comments CCSA can provide further guidance on what those specific project types should be and factors associated with each of them.[5]

Figure 2: Illustrative project categories for interim SREC program factors

Customer-based Factors
Projects < 25kW serving residential and small commercial customers
Projects < 25kW serving LMI customers
Community Solar with 50%+ residential and small commercial subscribers
Community Solar serving 50%+ LMI customers
Siting Based Factors
Rooftop projects >25kW
Parking canopy projects
Advanced Agricultural (dual use)

Thank you for your consideration of these comments.

Sincerely,

Brandon Smithwood
Policy Director, Coalition for Community Solar Access
(978) 869-6845
brandon@communitysolaraccess.org

[5] While some previous reports like the *New Jersey Department of Environmental Protection Solar Siting Analysis Update* (December 2017) have implied that NJ could site all needed solar in urban and suburban areas, this conclusion was reached without proper analysis of costs due to usable space constraints, site control limitations, interconnection technical feasibility etc, and also didn't address the additional cost.

[11] Standard additional costs for landfills and brownfields include physical constraints that require ballasted systems instead of driving piles, raised non-trenched electrical conduit and wire runs, more expensive stormwater requirements, and increased financing costs due to project complexity and risk. For rooftops, the additional costs are primarily replacing roofing, usable space constraints, and increased financing costs due to risk and complexity of site shading, access, maintenance, and building owner needs. For parking lot structures, costs are usable space constraints, additional significant structural costs for raised panels and additional snow/wind loading, and increased costs for non-trenched electrical conduit and wire runs.

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

New Jersey's Solar Market Transition Comments

VIA ELECTRONIC DELIVERY November 2, 2018

Secretary Aida Camacho
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350
Trenton, New Jersey 08625

Re: New Jersey Solar Market Transition Recommendations

Dear Secretary Camacho:

The Environmental Markets Association ("EMA") appreciates the opportunity to provide input to the New Jersey Board of Public Utilities ("BPU") regarding S2314 / A3723's legislative requirement to close the current solar renewable energy certificate ("SREC") market and transition the state to a more cost-effective solar energy program. EMA commends the BPU for its leadership in making New Jersey a national leader in solar energy. The EMA believes that New Jersey's renewable portfolio standard ("RPS") SREC market has been extremely successful at incentivizing new solar energy generation since its enactment. This policy has consistently achieved the stated legislative requirements in every year and has successfully facilitated the development of more than 2,500 megawatts of solar energy in only a decade. We look forward to participating in this process to ensure New Jersey accomplishes its economic and environmental sustainability policy objectives in the most efficient and cost-effective manner.

The EMA is a U.S.-based trade association representing companies that have interests in the trading, legislation, and regulation of environmental markets. EMA was founded in 1997 as a 501(c)(6) not-for-profit organization. The members have decades of extensive, first-hand experience with market instruments related to federal and regional cap-and-trade programs in sulfur dioxide, nitrogen oxide, and greenhouse gas emissions, as well as state-driven renewable energy certificate ("REC") programs. EMA's diverse member group represents a wide variety of participants in the clean energy markets, from utilities and electricity suppliers to renewable energy project developers and investors. Our members have extensive operational experience with RPS compliance, REC trading, and renewable energy investment in several states and, collectively, have contributed to the aggregate economic investment of billions of dollars to achieve New Jersey's RPS. The EMA has a vested interest in the continued success of market-based mechanisms and RPS programs throughout the U.S. Given this, we believe that the EMA is uniquely qualified to share its experience with the BPU, especially as it relates to our recommendation that competitive and tradable SREC markets remain the primary solar policy framework for the successor solar program.

To achieve increased solar penetration in the state of New Jersey, a delicate balance must be struck between fostering a robust environment for the development of new solar energy resources, while closely scrutinizing and minimizing the cost to

ratepayers. EMA strongly believes that using a market-based policy solution with competitive market elements will be the most cost-effective path for the successor solar energy program in the state of New Jersey. As such, the EMA recommends that New Jersey accelerate its progress toward this goal by building upon the competitive SREC market model that has successfully been in place for a decade.

To that end, EMA members are pleased to share a pair of guiding documents created by the collaboration of our experienced members: *Best Practice Principles for Renewable Energy Certificate Markets* (attached as Appendix A) and a *Supplemental Guidance Document* (attached as Appendix B). In them, EMA explains areas that are crucial to a well-functioning and efficient REC market that can maximize RPS benefits. Specifically, these principles are:

1) Tradeable Products

New Jersey should continue to achieve its RPS targets using tradable RECs, wherever possible. Tradable RECs allow for **accountable policy objectives**, **compliance flexibility**, and **financial innovation**[1].

2) Market-Based Pricing

New Jersey should allow market participants to facilitate the price discovery process for RECs wherever possible. Market-based pricing will allow for **pricing transparency**, **policy cost-effectiveness**, **ratepayer protection**[2], **information feedback signals**, and a more **diverse participant base**.

3) Market Design that Fosters Transparency, Competition, and Liquidity

New Jersey should continue to promote competition among solar energy developers in the successor solar program and continue to maintain all RPS obligations with electricity suppliers as opposed to electric distribution companies. New Jersey should avoid placing long-term contracting obligations on any electricity supplier or on ratepayers. In circumstances where tradable RECs may not achieve New Jersey's policy objectives, New Jersey should ensure that the design of any long-term contracting program does not interfere or damage the integrity of a competitively-based SREC market. Well-designed SREC markets allow for **market efficiency, liquidity**, **investor certainty**, and **lower costs of capital** that support cost-effective RPS achievement.

[1] Financial innovation refers to the creative usage of financial instruments for commercial purposes including, but not limited to, project financing, investment certainty, risk management, and price hedging, all of which contribute to competitive outcomes that ultimately benefit ratepayers. Tradable RECs priced by vintage create reference prices for both physical and financial REC contracts (e.g. forward and futures contracts, respectively) that can be used to facilitate project investment through contracted revenue and to manage price risk. By helping to lower the risk of economic activity, or by giving market participants tools to transfer risk, the availability of financial products can lower the cost of capital for renewable resource investments. This supports lower REC prices and lower RPS costs.

[2] A significant and compelling advantage of well-designed RPS mechanisms is that they leverage private investment and utilize competitive markets to achieve the standards. For example, floating REC prices ensure that when markets become oversupplied ratepayer costs also decline. RPS policies that place obligations on electricity suppliers and use tradable RECs to incentivize and account for renewable energy targets yield many benefits to ratepayers, one of the most important being that private investors, not ratepayers or taxpayers, bear the risk of clean energy investments.

4) Market Oversight

New Jersey should continue to maintain market oversight through the BPU and the use of the PJM-GATS environmental registry to collect data, report on RPS progress, and identify, monitor, and address any fraud or manipulation in the markets.

5) Market Integrity and Stability

New Jersey should promote **Market Integrity and Stability** by maintaining the fundamental structure of its tradable REC markets to achieve increased solar energy penetration. Policy stability and long-term certainty is not only crucial to investor confidence and financial innovation but also for ratepayer protection.

EMA's principles and supplemental design practices encourage private market investment and result in well-functioning and efficient markets that achieve the stated goals at the most competitive price to ratepayers. EMA's REC market principles are intended to maintain the integrity of the RPS mechanism, which is extremely effective at leveraging private investment and is designed to efficiently work with New Jersey's retail electric choice policy.

The progress achieved by New Jersey's SREC market to date using tradeable products is undeniable and should serve as an indicator to the BPU to continue relying on competitive market mechanisms containing tradeable products to achieve future solar energy goals. EMA believes that New Jersey's solar energy accomplishments would not have been possible without the reliance on, and oversight of, a competitive electricity and SREC-based marketplace. Regarding the next solar program in New Jersey, the BPU should follow the legislative requirement to **"place greater reliance on competitive markets, with the explicit goal of encouraging and ensuring the emergence of new entrants that can foster innovations and price competition."**[3]

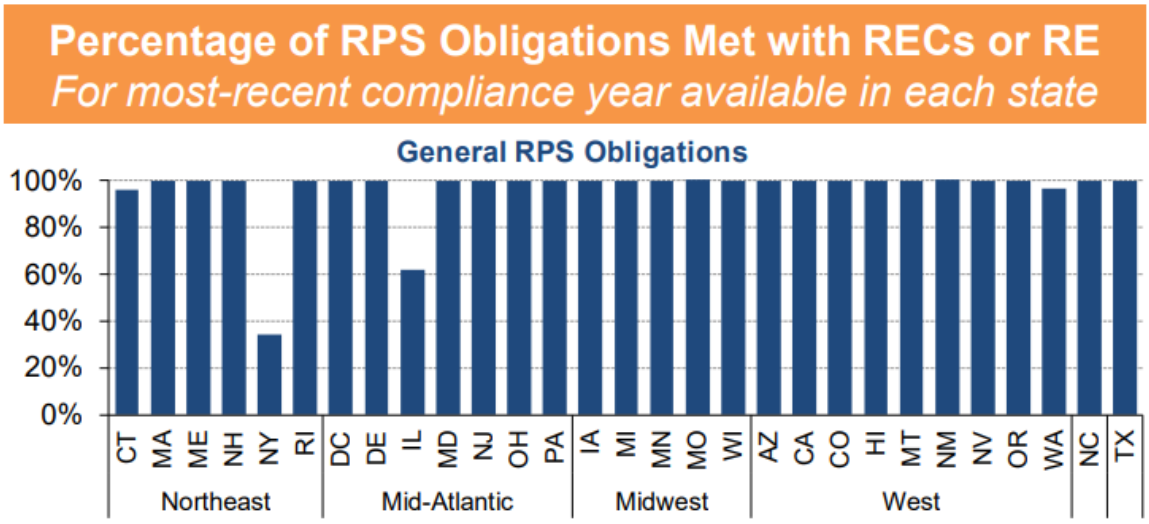
EMA understands that there has been a long-standing debate between the use of tradable REC markets and administratively designed programs through long-term contracts or feed-in tariff policies, and that the BPU is also required to consider the use of long-term contracts for cost recovery in the successor solar program. To date, New Jersey's RPS has easily achieved its targets through tradable SREC markets without the need to obligate ratepayers to long-term contracts or feed-in tariffs. Although New Jersey has used some long-term SREC contract programs within its SREC market, these have been embedded within the overall SREC markets (as opposed to the outright displacement of the SREC market). The EMA respectfully asks that if the BPU is to pursue the expansion of long-term contracts for cost recovery in the successor solar program that the following design principles are maintained:

- The use of a deliverable SREC framework as opposed to a feed-in tariff,
- The use of programs that do not re-regulate electricity policy in New Jersey, defined as regulatory actions that shift investment risk away from private investors and back onto ratepayers, and

[3] This language is cited from S2314 / A3723 lines 14-16 in the context of this bill's legislative directive to the BPU in designing New Jersey's successor solar program.

- The use of long-term contract programs that do not displace an open, competitive, and tradable SREC market, but are instead embedded within the overall program just like the current New Jersey SREC market is designed. EMA believes the solar development industry should have the choice between selecting long-term contracts that fix price risk and transacting directly with retail electricity suppliers in the over-the-counter SREC market through the use of forward contracts in order to hedge price risk.

Other RPS jurisdictions (e.g. New York and Illinois) have made the mistake of sacrificing the benefits of competitive REC markets for long-term contracting programs, often at the expense of both environmental and economic impact. In fact, a series of annual reports released by the Lawrence Berkeley National Laboratory shows that states which prioritize RPS achievement through long-term contracts rather than tradable REC markets consistently fail to achieve their legislated RPS targets on time:



Source: Lawrence Berkeley National Laboratory Annual RPS Status Report, July 2017

It is also useful to note that well-designed RPS programs with tradable RECs will by default facilitate forward contract markets and bilateral long-term purchase agreements (just like in the current New Jersey SREC market today).

As federal policy changes, such as through the expiration of tax incentives for renewable energy investments, a policy that has been essential to supporting renewables growth in the region, the regulatory actions of New Jersey will become even more important. It is imperative to understand that when federal subsidies for renewable energy expire or weaken, there must be robust market mechanisms in place to ensure that New Jersey will be able to cost-effectively support its clean energy targets. Failing to make sure competitive markets remain in place for the achievement of RPS goals will create substantial risk to New Jersey ratepayers going forward.

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Thank you for your consideration of our comments. The EMA is ready to offer any additional assistance as needed by the BPU as New Jersey moves towards its clean energy future.

Sincerely,

David Bernstein

Executive Director

Environmental Markets Association

Ph: (212) 297-2138

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Appendix A – Best Practice Principles for Renewable Energy Certificate Markets

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Best Practice Principles for Renewable Energy Certificate Markets

The Environmental Markets Association (EMA) is focused on promoting market-based solutions for environmental challenges through sound public policy, industry best practices, effective education and training, and member networking. EMA represents a diverse membership including large utilities, renewable energy certificate (REC) traders and brokers, financial exchanges, law firms, project developers, investors, consultants, academics, non-governmental organizations, and government agencies. EMA strongly supports the utilization of markets to achieve environmental policy goals. Well-designed markets yield many benefits including, but not limited to, transparent price signals determined through competition, risk mitigation opportunities, incentives for technological innovation, efficient allocation of capital and resources, investor certainty, and ratepayer protection. In support of RPS objectives, EMA endorses the following set of Best Practice Principles for REC Markets:

EMA Best Practice Principles for REC Markets

1. **Tradable RECs**
2. **Market-Based Pricing**
3. **Market Design That Fosters Transparency, Competition, and Liquidity**
4. **Market Oversight**
5. **Market Integrity and Stability**

In the case of Renewable Portfolio Standards (RPS), EMA believes that market-based programs will enable the most cost-effective, flexible, and innovative approach to maximizing renewable energy. EMA further believes that this is best accomplished through open, transparent, and competitive markets, and the use of tradable RECs as the primary means of RPS compliance. As such, well-designed RPS policies and REC markets offer stakeholders many advantages toward achieving their economic, social, and environmental objectives:

EMA RPS Advantages from Best Practice Principles

- ✓ **Accountable Policy Objectives**
- ✓ **Pricing Transparency**
- ✓ **Compliance Flexibility**
- ✓ **Policy Cost-Effectiveness**
- ✓ **Ratepayer Protection**
- ✓ **Market Integrity & Stability**
- ✓ **Investor Certainty**
- ✓ **Information Feedback Signals**
- ✓ **Market Efficiency & Liquidity**
- ✓ **Financial Innovation**
- ✓ **Lower Costs of Capital**
- ✓ **Diverse Participant Bases**

For additional information about these Best Practice Principles for Renewable Energy Certificate Markets and their RPS advantages, please view our Supplemental Guidance Document for REC Markets here.

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Appendix B – Supplemental Guidance Document

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Supplemental Guidance Document
Best Practice Principles for Renewable Energy Certificate Markets

1. Tradeable RECs

- EMA supports the use of tradeable RECs for renewable portfolio standard (RPS) compliance. Clearly defined tradeable RECs (e.g., by vintage period, useful life, resource and compliance eligibility) provide a means for facilitating commercial transactions through bilateral markets that enable participants to trade RECs on the spot market (for immediate delivery) and in the forward market (for future delivery). Spot markets facilitate the monetization of RECs. Forward markets facilitate the management of risk. Bilateral REC markets occur when participants trade directly among each other outside of a centralized procurement or auction process. RECs obtained at auction can be later resold through bilateral markets.
- Tradable RECs allow for market participants, who may not have entitlements or compliance obligations, to provide market liquidity and risk management services to those entities with future entitlements to the product (e.g., renewable resource developers) and to those entities with future compliance obligations (e.g., load-serving entities).
- Open and competitive REC markets attract a more diverse participant base, which in turn increases market liquidity. For renewable resource developers, this translates into more counterparties to purchase RECs. For compliance entities, this means more flexibility to procure RECs at times, and in volumes, that match RPS obligations. For all market participants, this results in more avenues to meet specific transactional needs and credit requirements. Open and competitive markets are essential to creating efficient REC price discovery and liquid trading on a forward basis (i.e., for future compliance vintages).

2. Market-Based Pricing

- EMA supports the price discovery of RECs through market-based mechanisms as opposed to the assignment of prices through administrative processes by government agencies. Collectively, REC trading participants will always have access to more information through markets. As such, the formation of REC prices should be driven by information and competition that accounts for the economic and risk preferences of market participants.
- Market-driven REC prices provide transparent and dynamic economic signals to participants for investment and resource allocation decisions. This enables efficient compliance by helping participants to dispatch the lowest cost solutions that fulfil the RPS.
- RPS design that allows for "floating" REC prices that can respond in real-time to new information is an important concept. Allowing prices to adjust in real-time to changes in supply and demand and other existing policies (e.g., the Public Utility Regulatory Policies Act, net energy metering, and tax law) guides

the market towards the most cost-effective achievement of RPS objectives. Benefits include ratepayer protection and the establishment of reference prices for financial innovation:

- Ratepayer Protection – While high REC prices are a signal to invest, low REC prices are a signal to slow the development of new resources vs. current RPS targets established by law. Allowing prices to fall when renewable technologies become cheaper, when other policy-based incentives are at play, or when markets become oversupplied is critical to protecting ratepayers from unnecessary or irresponsible investment and forces market participants to be more thoughtful about expenditures, risk management, and resource allocation. If investments exceed stated regulatory targets, or are negatively impacted by company governance or exogenous market factors, ratepayers are protected from investment losses. This supports overall market efficiency.
- Financial Innovation – Tradable RECs priced by vintage create reference prices for both physical and financial REC contracts (e.g., forward and futures contracts, respectively) that can be used to facilitate project investment through contracted revenue and to manage price risk. By helping to lower the risk of an economic activity, or by giving market participants tools to transfer risk, the availability of financial products can lower the cost of capital for renewable resource investments. This supports lower REC prices and lower RPS costs.

- Generally, the more compliance entities, producers, market makers, and financial participants that take part in a market, the more effective that market will be in facilitating price discovery, price transparency, market liquidity, and the efficient allocation of resources. Centralized compliance obligations with a single entity or a small group of entities should be avoided, if possible, to decrease the risk of market manipulation and increase market liquidity. Likewise, central procurement mechanisms that do not take advantage of the benefits from competitive market participation should be avoided or minimized.

3. Market Design That Fosters Transparency, Competition, and Liquidity

- Transparency, competition, and liquidity are mutually reinforcing market phenomena that will help promote the cost-effective achievement of RPS policies. The more cost-effective resources become at fulfilling RPS targets, the higher that RPS targets can be set without adversely impacting ratepayers.
- EMA supports market design features that create transparent and reliable price signals capable of facilitating market or auction objectives that channel RECs to participants who most highly value them.
- RPS design components should ensure that all participants have both an incentive and interest to ensure that efficient price discovery occurs and is revealed to the market in a timely and transparent manner.

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Supplemental Guidance Document
Best Practice Principles for Renewable Energy Certificate Markets

- If design components include features such as price boundaries, such as alternative compliance payments (ACPs) or price floors, such features must be transparent to market participants on a forward-looking basis, must facilitate competitive market outcomes, and must support the integrity of the market. Statutory price floors in and of themselves will not necessarily support pricing or liquidity in an oversupplied market without an additional back-stop mechanism or capitalized facility.
- EMA supports market design that enables diverse participation and competition in environmental markets, since a competitive market reduces liquidity risk and ensures that no one entity can unduly influence the market.
- Any regulation should be carefully evaluated as to its impact on market liquidity, transparency, competition, and costs to participants. EMA does not support efforts to limit participation in REC markets or REC auctions to only those entities with compliance obligations.

Key RPS Design Components and REC Market Features	
RPS Component	**REC Market Feature**
REC Tier / Class Product Definitions	▪ REC tier / class product definitions include technology type, generator vintage (i.e., online) eligibility dates, and other environmental attribute considerations. ▪ REC tiers within an RPS should be clearly defined to distinguish between existing and new entry renewable resources, which may require different revenues to adequately account for different cost-recovery rates. ▪ Each REC tier will have its own distinct REC market if it has a unique ACP schedule and requires obligated entities to fulfill compliance targets with REC purchases. Although REC tier pricing may be influenced indirectly by other REC markets in jurisdictions that have resource eligibility overlap, it will exhibit unique supply / demand fundamentals and price signals to market participants. ▪ If separate RPS tiers are created to support less commercialized technologies, or to accelerate already commercialized technologies that provide unique RPS benefits, these tiers should be additional to other technology tiers and each tier should deploy best practice market design principles if possible and cost-effective. ▪ REC standard of units (e.g., megawatt hours of power generation per single REC issuance) should be clearly defined and to the extent possible, standardized with adjacent RPS jurisdictions. ▪ REC tiers should be clearly defined as to whether they are carve outs of another tier, or a set aside (an additional, cumulative, target) within the overall RPS.
Vintage Periods	▪ Vintage period should be clearly defined in regard to the span of dates in which generation from an eligible resource can issue a compliance-eligible REC for use in a particular compliance year(s). Calendar Year and Energy Year is common. ▪ Vintage-based compliance periods ensure RPS policy accountability through periodically verified REC retirements (annual retirements are encouraged).

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Supplemental Guidance Document
Best Practice Principles for Renewable Energy Certificate Markets

Compliance Eligibility	▪ REC tiers should be clearly defined in regard to which resources can generate compliance-eligible RECs for compliance. ▪ Compliance-eligible REC vintages for a given reporting year (e.g., RY2018) should also be clearly defined (this is often referred to as REC banking or useful life). ▪ Compliance due dates for REC retirements should be clearly posted and have administratively straightforward reporting processes. ▪ ACP payments should be required in a timely manner following the end of an RPS compliance requirement year.
Resource Eligibility	▪ Broad RPS technology eligibility among a diverse array of clean energy technologies is encouraged. ▪ The more technologies that are RPS eligible, the greater the number of potential REC producers in a market and the greater the competitive pricing benefits (e.g., economic and employment) across multiple industries. Allowing multiple technologies to compete for grid access also supports electrical grid fuel diversity and resiliency. ▪ Resource eligibility has an extremely high impact on the supply / demand fundamentals of a REC tier and therefore a high impact on whether a market exhibits low or high REC pricing vs. the ACP schedule. ▪ The number of vintage periods a generator is certified to issue RECs for RPS compliance within a particular REC tier (sometimes referred to as "qualification life"), should be clearly defined in advance, even if only to confirm that no vintage eligibility limitations apply to RECs issued by RPS certified generators. ▪ Generator vintage eligibility (the date in which a generator is considered to have come on line for the purposes of an RPS) should be clearly defined for each REC tier within an RPS.
Geographic Eligibility	▪ Geographic, or jurisdictional, eligibility of renewable resource generators should be clearly defined for each REC tier. A narrow definition of geographic eligibility is in-state located resources. A broad definition is national eligibility. Variations exist for adjacent state and regionally located resources. ▪ Geographic eligibility has an extremely high impact on the supply / demand fundamentals of a REC tier and therefore a high impact on whether a market exhibits low or high REC pricing vs. the ACP schedule. ▪ REC import eligibility (with or without the energy transfer) has an extremely high impact on the supply / demand fundamentals of a REC tier and therefore a high impact on whether a market exhibits low or high REC pricing vs. the ACP schedule.
Fixed RPS Compliance Targets and Forward-Looking RPS Schedules	▪ First, RPS compliance schedules should be fixed at pre-set percentage levels of retail electricity sales in advance of compliance years. EMA recommends that RPS targets (and therefore compliance action) step up annually according to a pre-set schedule that is transparent to market participants. Percentage-based targets ensure that REC demand is responsive to load variation, which provides an additional cost-containment mechanism to ratepayers in the event of load decline or ensures that as load grows so does the mix of renewable resources and associated clean energy benefits.

Supplemental Guidance Document
Best Practice Principles for Renewable Energy Certificate Markets

	▪ Second, RPS compliance year schedules should have tenor (i.e., be transparently established as far into the future as possible) to support long-term market and investment certainty. This creates transparency and is important to enabling tradability and investor confidence. ▪ Third, RPS target terminal years (sometimes referred to as sunset language) should be clearly defined. Terminal year RPS targets should always be maintained at their final levels (i.e., the procurement percentage should not drop down to zero or begin to decline once achieved) to ensure that RECs generated from investments post the last compliance year can continue to be sold and delivered to compliance entities and that the overall penetration of renewables in the electricity mix continues to comply with the law. ▪ Fourth, under no circumstances should a compliance year's RPS target ever be set lower than any previously established compliance year target.
Fixed Alternative Compliance Payment (ACP) Rates and Forward-Looking ACP Schedules	▪ ACP mechanisms are a pre-requisite for REC market trading and timely, accountable, RPS compliance, since they create penalties on obligated entities for failing to procure and retire RECs. ▪ ACP rate schedules should be forward-looking and align with the RPS compliance year schedules (on a vintage-by-vintage basis) to support long-term market certainty. This creates transparency and is important to enabling investor confidence, a lower cost of capital, and cost-effective RPS achievement. ▪ ACP rates should be fixed and set at sufficiently high enough levels that both encourage renewable energy investment and market tradability / liquidity. High ACP rate schedules should not be interpreted to imply high RPS compliance costs. ▪ Whenever possible, ACP rates should be set at levels which reflect regional circumstances to address REC shuffling / attrition between RPS jurisdictions. ▪ ACP payments should also be required after each compliance year and payments should be required in a reasonable timeframe. ▪ Non-published ACP schedules, or opaque formulas pegged to complicated calculations or market pricing, creates market uncertainty and should be avoided. ▪ ACP rates should be the only cost-containment mechanism built into an RPS. Other forms of cost-containment mechanisms, such as when an RPS freeze is tied to electricity price increases beyond a certain percentage threshold create considerable investment uncertainty and should be avoided. ▪ Reductions to ACP schedules post establishment is strongly discouraged. If ACP schedules are adjusted downward, considerable thought should be given as to the lower ACP schedules impact on pre-existing investments and forward sale REC contracts (which may become invalidated by change-in-law provisions). ▪ The general use of ACP proceeds should be disclosed to market participants. Policymakers that want to limit the impact of ACP payments on ratepayers can implement a pro-rata bill credit based on total ACP proceeds to ease RPS costs in short supplied markets.
Applicable Electricity Sales and Exemptions	▪ Applicable retail sales, exemptions, and the obligated entities required to procure for RPS compliance should be clearly defined.

Supplemental Guidance Document
Best Practice Principles for Renewable Energy Certificate Markets

	▪ Generally, electricity exemptions, which reduce total applicable retail sales applied to RPS requirements, weaken demand for renewable resources, may create uncertainty in calculating REC demand, and may mislead the public about published RPS targets.
REC Banking (Useful Life)	▪ Clearly defined banking of RECs (useful life) is encouraged. Banking of RECs helps facilitate a more efficient market by ensuring that RECs issued in previous years maintain value long enough for participants to transact them. o For producers, this gives them the option to hold RECs into fundamentally short years, which defers current cashflow in exchange for the potential to earn a higher price later. o For compliance entities, this gives them the opportunity to bank lower cost RECs from oversupplied years into fundamentally undersupplied years, thereby providing the option to manage their compliance costs in response to the market environment or specific capital / credit constraints.
REC Multipliers, Factors, and Forward Crediting (Borrowing)	▪ Multipliers provide higher incentives to projects through awarding each megawatt hour of generation a greater proportional amount of RECs. All else equal, this increases the amount of revenue a project receives for the same unit of production, but dilutes published RPS targets and may lower REC pricing through increased supply. The use of REC multipliers should be weighed against the potential for market distortion and decreased market liquidity. ▪ Factors provide lower incentives to projects through awarding each megawatt-hour of generation a lower proportional amount of RECs. All else equal, this lowers the amount of revenue a project receives for the same unit of production. Factors have the potential to create economic attribute waste (i.e., clean energy generation that does not count towards RPS achievement but still provides environmental benefits) if the non-factor proportion of generation cannot issue other RECs saleable for RPS compliance. REC factors should be avoided if they apply to the main, or overarching, tier of an RPS. ▪ Multipliers and factors must be considered carefully as they have wide ranging impacts on different project segments (e.g., utility, commercial, residential). If implemented improperly, they can distort market pricing and make the market allocate capital less efficiently, meaning power purchasers (and ultimately end-users or ratepayers) pay more for electricity. In practice, this can cause expensive projects to deploy at the expense of economically more efficient new entry units (for example, smaller but higher cost projects which have access to net energy metering at retail rates vs. larger but lower-cost projects with economies of scale that must compete in the wholesale markets). Multipliers can end up weakening overall RPS targets if implemented poorly. ▪ Forward Crediting, or the borrowing of RECs from future production periods that can be sold today, distorts market pricing and should not be deployed in any environmental market. Since REC issuance and cashflow would occur upfront with forward crediting, this decreases the incentive to maintain the project and increases the risk that the project will not deliver its RECs for future RPS compliance. Forward crediting runs the risk of creating an artificially

Supplemental Guidance Document
Best Practice Principles for Renewable Energy Certificate Markets

	oversupplied REC market with lower prices that subsequently damages the investment signal participants require to develop new resources.
Long-term Contracting Programs	▪ Tradable RECs and long-term contracting programs can successfully coexist; however, long-term contracting programs should not be legislated in replacement of, or at the expense of, open and competitive tradable REC markets that go above and beyond the designated contract volumes in the long-term contracting programs. ▪ Long-term contracting programs that award a REC offtake contract in advance of when a generator comes online should make sure that adequate financial security is posted until the project comes online. This will discourage bidders from bidding into procurements with unrealistic economic assumptions that tie up scarce resources (i.e., contract awards) that may prevent other, more viable, projects from being developed.
RPS Reporting	▪ RPS compliance reports should be written and released to the public for each requirement year on a timely basis. Wherever possible, RPS compliance reports should provide sufficient data (e.g., on applicable retail electricity sales and exemptions, RECs retired, RECs banked forward, etc...) that is helpful to participants in assessing the status of the RPS and its REC markets.
Interaction with Compliance Carbon Cap-and-Trade Programs	▪ REC markets and carbon allowance / carbon offset markets can coexist in the same jurisdictions. Current best practice keeps fungibility separate (i.e., RECs cannot be used for carbon market compliance and carbon allowances / carbon offsets cannot be used for RPS compliance). Clear and thoughtful definitions of which environmental attributes are embodied by each environmental commodity can help eliminate confusion between market participants and regulators while promoting market liquidity.
Private Investment	▪ Market design should foster private investment and market participation. ▪ Leveraging private investment and capital markets in achieving RPS policy is important. Well-designed RPS policies and competitive REC markets will shift investment risk away from ratepayers or taxpayers to private investors. If a project fails, it does not receive cost-recovery through REC payments (because it does not generate any RECs). If a project receives a lower investment return because of overly optimistic REC price forecasts, ratepayers are shielded from this economic miscalculation.

4. Market Oversight

- EMA supports clearly-defined independent market oversight, with stakeholder input, to maximize the benefits of competitive commercial behavior in achieving policy goals and providing transparency, while guarding against fraud and manipulation and minimizing systemic risk. Successful RPS design must include measures that protect the market from activity that is illegal or detrimental to the market's function.

Supplemental Guidance Document
Best Practice Principles for
Renewable Energy Certificate Markets

- EMA supports independent oversight of the market structure and operation, which may include periodic review, and as needed, recommendations with stakeholder input for addressing any identified market design flaws.
- Over-the-counter spot and forward REC contracts currently qualify for the forward exclusion definition of a "swap" under the Commodity Exchange Act (CEA) if intended for physical delivery. As such, RECs are classified as non-financial commodities by the Commodity Futures Trading Commission (CFTC) and regulated accordingly under the CEA. Financial REC futures and options contracts are regulated by the CFTC and must trade on an approved commodity exchange.

5. Market Integrity and Stability

- RPS laws, regulations, and regulatory guidance documentation should strive to maintain the integrity of REC markets and RPS policy in all aspects. Long-term regulatory and policy certainty will allow a robust market-based system to evolve with healthy price discovery and liquidity. Flawed market design rules, even minor ones, can have a harmful impact on market liquidity and increase RPS compliance costs. When establishing and enforcing local preferences (e.g., resource eligibility, generator vintage eligibility, biomass emissions limits) regulators should be careful not to interfere directly with a market's price discovery process. RPS frameworks mobilize private investment that generates environmental and economic benefits. Long-term certainty and stability in the political institutions can help lower the cost of capital by instilling integrity in the regulatory commodity.
- Frequently changing rules creates investment uncertainty and can stifle market development. Regulatory policy changes that are applied retroactively to a market (such as the lowering of an ACP schedule once established or the retroactive decertification of previously qualified RPS generators) damage investor confidence and should be avoided. Vague or ambiguous regulatory language also damages investor confidence, all of which increases the cost of capital for renewable energy investments.
- High, low, or volatile REC pricing, at points in time, should not be interpreted as a sign of market failure. Prices, in essence, represent information. In competitive tradable markets, when information changes, prices change. Indeed, price fluctuations are an indication of a healthy market that is responding to information and adjusting to changing operating conditions. When RPS policies are well-designed, high REC prices will encourage the development of new renewable energy resources that in turn eventually lowers market pricing and vice versa.

Environmental Markets Association
529 14th Street NW, Suite 750
Washington, DC 20045
www.emahq.org

Supplemental Guidance Document
Best Practice Principles for
Renewable Energy Certificate Markets

- Tradable RECs support accountable policy objectives and information transparency by ensuring that RPS achievement is measured, tracked, and reported on in a timely manner. EMA supports the usage of secure and robust tracking mechanisms and methodologies to provide certainty of REC ownership. Well-implemented REC registry systems will avoid double counting of RECs and the dilution of RPS benefits. Failure to implement a system to track ownership of environmental compliance products can undermine the success of the market. Developing such registry mechanisms and methodologies must be a part of the market design process and must be completed prior to implementing any new REC market. Any issues with attribute ownership, claims of benefits, or means of tracking the RECs must be clarified before the start of any program. Failure to do so can greatly undermine confidence in the market, stifle liquidity, and hinder the program's full potential of benefits.
- EMA supports legislative, regulatory, and rulemaking efforts to establish stable, clearly-defined, and transparent market regimes. EMA promotes the inclusion of experienced market participants at all stages of the development process and post-implementation market review process in order to contribute to the overall strength and vibrancy of the markets. Both the design process and the post-implementation review process must be transparent to all stakeholders.
- Maintaining market integrity is the responsibility of both market participants and regulators.

About EMA

EMA is a U.S.-based trade association representing the interests of companies that are involved in the trading, legislation, and regulation of environmental markets. EMA was founded in 1997 as a 501(c)(6) not-for-profit organization. Our members have decades of extensive, first-hand experience with market instruments related to Federal and regional cap-and-trade programs in SO2, NOx, and GHG emissions as well as state-driven RPS programs throughout the U.S. The EMA represents a wide variety of participants in the clean energy markets, from utilities and load-serving entities to renewable project developers and investors. EMA members have extensive operational experience with RPS compliance, REC trading, and renewable energy investment and, collectively, have made significant historical contributions to achieving state RPS targets. The EMA has a vested interest in the continued success of market-based mechanisms and RPS programs throughout the U.S. and encourages active discussion and collaboration among all industry participants. Inquiries about the EMA, or these Best Practice Principles for REC Markets may be directed here.

November 2, 2018

Aida Camacho
Secretary, New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350
Trenton, New Jersey 08625

RE: Comments on New Jersey's Solar Market Transition

On October 5, 2018, the BPU initiated a stakeholder process and request for comments to seek input on the solar market transition and provided a number of staff questions to help guide discussion of issues central to this transition. Our organizations appreciate the questions and opportunity to comment, and respectfully offer these general comments, which reflect our answers to the BPU staff questions, which we attach as an appendix.

The need for, and guidance regarding, the solar transition are established clearly in the Clean Energy Act, which Governor Murphy signed into law on May 23 of this year. The Act increases the state's renewable energy requirement to 50 percent of all energy sold by 2030, requires increased amounts of cost-effective energy efficiency and makes a number of other important changes to energy policies in the state. Our organizations supported this landmark legislation and are fully committed to working with the administration and the Board of Public Utilities (Board) to implement its provisions.

As the Board tackles these implementation challenges, the overarching purpose of the Act should remain front and center. The Act's purpose is to accelerate New Jersey's reduction of greenhouse gas emissions to combat climate change, one of the greatest threats facing our state, today and in the future. To achieve these reductions, the Act relies, in large part, on the growing renewable energy requirements and successfully meeting them through continued successful competitive deployment of renewable energy resources.

The Board is now deliberating how best to implement a number of the Act's requirements that are central to whether New Jersey will indeed be able to reach 50 percent renewable energy by 2030. Our comments are intended to help inform the Board on how to implement these requirements in a way that will ensure these goals will be met with continued growth of in-state solar resources and fair treatment of existing solar projects.

Indeed, we view continued growth and financial stability for the solar industry as essential to achieving these goals. The solar industry has installed more than 2,500 MW of solar capacity, making New Jersey

one of the leading states for solar development. There are more than 94,000 solar installations in New Jersey and 7,000 solar jobs.

Our comments describe an integrated set of solutions that achieve multiple goals: developing high levels of renewable energy, ensuring the continued growth of the solar industry in New Jersey and protecting ratepayers within the parameters set by the Clean Energy Act. We believe these goals can be met, and met well, through an integrated BPU rule that addresses the three key issues of maintaining sustainable prices for Solar Renewable Energy Credits (SRECs), closing the SREC program to new applications without creating an oversupply of SRECs, and establishment of an effective interim solar incentive program to bridge any gap between the closing of the SREC program and the implementation of the revised or modified solar incentive programs required by the Act.

We look forward to continuing our discussions with BPU staff, solar developers and other stakeholders to identify workable solutions that will provide an orderly transition to a new solar program.

Respectfully submitted,

Ed Potosnak, New Jersey League of Conservation Voters
Mary Barber, Environmental Defense Fund
Barbara Blumenthal, New Jersey Conservation Foundation
Dale Bryk, Natural Resources Defense Council
Tom Gilbert, Rethink Energy NJ

1. Overview of comments.

Passage of New Jersey's landmark clean energy legislation in March of 2018 laid the foundation for the state to dramatically increase the share of clean energy it produces and consumes, from 10.485% in 2017 to 50% in 2030, without increasing costs unduly for the states residential and business electricity customers and ratepayers. Yet for the legislation to succeed, the Board of Public Utilities (BPU or Board) must resolve many new and critical challenges. The most important current challenges are those created by the interaction of three key features of the new law:

- the requirement for the BPU to close the current SREC program to new applications "upon the attainment of 5.1% of total kilowatt-hours of electricity sold in the state", by no later than June 1, 2021, and to develop a new or modified replacement program by May 23, 2020;
- the increase of the percentage of retail energy sales required from Class I renewable energy sources to 21% as of January 1, 2020, and to 50% by 2030; and
- the imposition of a firm cap, as a percentage of total retail electric revenues, on how much the BPU can allow to be spent on all required class 1 resources, other than offshore wind.

The way any one of these requirements is addressed will have major impacts on the BPU's ability to address the others effectively, due to their interdependence.

For example, the RPS cost cap creates an annual budget for total ratepayer spending on resources, other than offshore wind, used to meet the RPS. SREC prices generated by the current SREC trading market could easily be high enough to consume all of this budget, leaving nothing to fund new incentives for solar and other Class 1 renewables needed to achieve the RPS goals. Somewhat lower SREC prices could leave enough money in the budget to meet the RPS goals using low-cost regional wind energy, but not enough to support continued solar growth in New Jersey. SREC prices would need to be in a somewhat lower "sweet spot" for the budget to support both robust growth in new solar and meeting the RPS goals. [1]

SREC prices in the trading market are very likely to be above this sweet spot if the BPU closes the SREC program early enough to avoid an oversupply of SRECs, leaving no funds for new solar and potentially not enough for other Class 1 renewables needed to meet the RPS goals. But if the BPU closes the program much later, SREC prices are likely to collapse to very low levels due to an oversupply that would harm many legacy solar providers. Either outcome would be inconsistent with the orderly transition required by the law. This means the BPU should consider and implement ways to stabilize SREC price paths over time so they result in such a "sweet spot" with respect to the RPS budget, rather than relying on the current trading market to produce suitable prices after it is closed to all new entry.

Even with SREC prices stabilized in a "sweet spot", an SREC oversupply would be extremely challenging during the closed period. Any significant oversupply would require the BPU to either mandate BGS and competitive energy providers to retire more SRECs than the new law's requirement, or to only compensate SRECs up to the level of the requirement, which would leave the remaining SRECs worthless. This means the BPU should develop a decision rule that closes the SREC program to new

[1] See Appendix 2 for our analysis of the RPS budget and its implications for SREC pricing, new solar incentives and meeting the overall RPS goals.

applications in a manner that avoids pushing the supply of unretired SRECs for compliance over the level required for compliance.

Yet avoiding an oversupply of SRECs is likely to require closing the SREC program to new applications sooner rather than later. Early closing of the SREC program is likely to create a lengthy gap in which the solar industry would have neither the current SREC incentive program nor the new or modified incentive program the Board must study and propose no later May, 2020. Any material gap between the existing and replacement incentives would seriously harm many solar businesses that rely on continued deployment to maintain their business operations in the state. This means the BPU should develop an easily implemented interim incentive program, that will, like the SREC price path, exist within the RPS budget, and that will provide the needed business continuity to existing solar businesses until the new programs are ready – which should be at the earliest date possible.

Dynamic interactions between these three requirements for the solar transition mean the BPU must address all three critical issues in a careful, integrated manner to ensure the orderly transition required by the new law. [N.J.S.A. 48:3-87(d)(3).] Responses to the questions the BPU staff has issued for comment, together with additional opportunities for stakeholder engagement and technical work sessions, can allow the BPU to avoid the pitfalls and develop successful implementation plans for a transition that is orderly, efficient and fair, while continuing to achieve the new law's renewable energy goals, within the budget created by the new law's RPS cost cap.

To ensure such an outcome, we recommend that the BPU first follow this round of questions with additional staff-led discussion of issues and potential integrated solutions. After full and transparent exploration of such solutions, the BPU should issue a proposed rule that lays out the preferred integrated solution, including clear, detailed and transparent approaches for:

- How the Board will assure stable and sustainable SREC prices after closing the program to new applications[2];
- The decision rule it will use to determine the closing date of the SREC program to new applications; and
- An effective interim solar incentive program, with sustainable prices, to ensure solar business continuity during the limited time until the new incentive programs are implemented.

These proposed rules would then, pursuant to the Board's usual approach for stakeholder processes, be followed by a final rule. Timely completion of this entire process is, in our view, essential for an orderly and transparent transition from the SREC program to new or modified programs.

2. Addressing these dynamics without impairing the transition.

The questions issued by BPU staff on October 5 underscore and explore the key dynamics around the three critical requirements of the new law noted above. In addition to providing simple answers to these questions in Appendix 1 (attached), we respectfully offer this brief overview of how these

[2] We use the term "sustainable SREC prices" to mean prices that are not so low as to fail to adequately compensate legacy solar, and not so high they use up the share of the RPS budget essential for growth in new solar and other Class 1 renewables needed to meet the RPS requirements.

dynamics could backfire under inappropriate transition policies, and on the key policy and process steps needed to make the transition successful.

i. simply closing the SREC program to new applications is likely to cause unsustainable SREC prices.

(a) The problem. Closing the SREC program to new applications, without also modifying how SREC prices are established, is highly likely to produce either of two outcomes: either excess supply, if the supply of new and unretired SRECs exceed the mandated compliance requirement, or excess demand, if the mandated SREC compliance requirement exceeds the supply of new and unretired SRECs in the now-closed market.

Excess supply in a closed market can be expected to create extremely low SREC prices, potentially as low as prices in the regional renewable energy credit (REC) market. Excess demand in such a market will create extremely high SREC prices, at or near the solar alternative compliance payment (SACP). Such extremely high or low SREC price outcomes are likely to result in a trading market with no marginal costs, no entry, and legally fixed demand. Further, since the mandated demand is expressed as a percent of total retail kilowatt-hour sales, any significant change in sales, such as increases due to higher summer temperatures and more air conditioning and electrification of transportation and buildings, or decreases in sales due to rapid deployment of energy efficient end use technologies, could drive the closed market from low prices due to an oversupply to high prices due to an undersupply. In a closed market with such fundamentals, it would likely be impossible for the Board to "balance the market" in a way that avoids prices that are far outside of the sweet spot needed to achieve adequate compensation for legacy solar, compliance with the RPS goals, and robust growth for new solar. Such uncertainty about whether SREC prices in the trading market will be too high or too low, and the problems this risk creates for the solar industry, are likely to be made even worse due to the supply and demand implications of any decision rule the Board might adopt regarding when to close the SREC program.[3]

Both excessively high and low SREC price outcomes would jeopardize the transition, and even the entire RPS.[4] High prices, that consume so much of the RPS budget that not enough is left for new solar and other Class 1 renewables needed to meet the RPS requirements, are simply not sustainable in light of the state's long-term goals to dramatically increase solar and other forms of clean energy and to significantly reduce greenhouse gas emissions. Extremely low SREC prices are not sustainable, either, since they would be disastrous for many legacy solar projects that rely on SRECs to help cover their ongoing operating and financing costs, and would likely precipitate a risky and uncertain revamping of the entire clean energy law, potentially delaying or jeopardizing the state's clean energy and greenhouse gas emission reduction goals.

[3] Specifically an oversupply with low SREC market prices is likely and could be more extreme if the program is closed after enough solar energy has actually been delivered to provide 5.1% of the energy actually sold in the current or previous energy year, and an undersupply and high SREC market prices are likely and could be more extreme if the program is closed when the number of approved and fully developed new projects is projected to be just sufficient to meet the 5.1% requirement in a future energy year.

[4] Dividing the projected RPS budget by the volume of SRECs required shows that SREC prices below the SACP would consume the entire budget through 2025. See Appendix 1, Table 1. For there to be enough funds to incent new solar and other resources needed to meet the RPS goals, SREC prices would need to be much lower – perhaps half this level.

(b) The solution. To avoid all these risks and to support legacy solar, new solar and the attainment of the RPS goals, the BPU should develop a new, administrative approach to SREC price formation, to be in place and fully operational before the SREC program is closed to new applications. Specifically, the BPU should develop an administratively determined, forward-looking path of sustainable annual prices for SRECs for each year during the remaining eligibility period of any accepted SREC project. Keeping SREC prices on such a fixed price path would eliminate price risk and volatility for legacy solar projects, protecting them against SREC market prices that would be too low, while ensuring SREC prices are not so high as to endanger new solar incentives or the state's ability to achieve the new law's RPS requirements. Our analysis, summarized in Appendix 2 to these comments, suggests that a variety of SREC price paths could potentially be adequate to fairly compensate legacy solar interests, while preserving enough of the RPS budget to enable vigorous growth in new solar and to meet the total RPS goals.[5]

A fixed price path that has been promulgated prior to, and is workable upon, the close of the SREC program to new applications would also help the BPU avoid the problems of SREC price volatility in the trading market due to the details of the closure.[6] This, in turn, would allow the Board to adopt an earlier closure date that, as discussed below, would avoid excessive oversupply, without the risk of extremely high SREC prices consuming the budget needed for future solar growth or the achievement of the RPS goals. Indeed, the combination of SREC price certainty for legacy solar and adequate funds for new and improved solar incentive programs should go a long way toward assuring solar companies, investors and their customers that New Jersey is indeed open for business and committed to continued, sustainable growth in solar.

Such stable and moderate SREC prices are necessary for an orderly transition, but they are not enough by themselves to assure one. That assurance also requires the elimination of any material gap between the end of the SREC program and the implementation of its replacements.

ii. Any significant gap between the SREC program and its replacement will damage solar businesses.

(a) The problem. Even highly sustainable prices for legacy solar programs and ample funds for incentives in new programs will not help the transition, if there is any material gap with no incentive program at all. Under the statute's timelines, however, this gap could last for a year or more. This

[5] Our analysis supports the basic insight that the more of the RPS budget that is spent on legacy solar SRECs, the less is available for new solar growth. For example, in scenarios with $150 initial SREC prices, declining at 6% per year, our base case shows the remaining budget is large enough for the incentives needed to build up to 88 MW of new solar every year through 2033, while also paying for the incentives needed for enough low-cost onshore wind to meet the balance of the RPS requirements. In the same base case, initial SREC prices of $135, declining at the same annual rates, preserve enough of the budget to build 187 MW of new solar every year, while also meeting the remaining RPS requirements. If this initial $135 SREC price declines at 10% rather than 6% per year, then the remaining budget allows for 296 MW of new solar every year. See Appendix 2.

[6] While we recommend a purely administrative approach with a settlement process similar to that being developed for offshore wind renewable energy credits, to replace the current trading market, the BPU may wish to also consider changes to the current trading market that would establish both a price ceiling and a price floor at levels that would ensure sustainable SREC prices. If dependable, realistic and workable, such approaches could have the advantage of not requiring the replacement of the current SREC market with an entirely new means of transaction.

would be disastrous for any solar business that relies on continuous development to achieve the revenues needed to cover their costs and remain active in the state.

(b). The solution. Any such gap must be filled with an interim program to support business continuity for major types of solar projects. The interim program should be up and running on the date when the SREC program is closed to new applications. This calls for a relatively simple program, and ideally one that would use administrative mechanisms that are either already in place or that can be easily modified.[7]

Further, just as the SREC, new solar and other Class 1 renewable costs must remain within the budget created by the RPS cost cap, so must the costs of the interim program. This calls for a budget-based program. Developing such a program would require identifying how much of the total RPS budget, after SREC disbursements, could safely be spent on such an interim program, while leaving enough for new solar and other renewables needed to meet all future RPS requirements. This accounting must include outlays for incentives in future years for projects accepted into the interim program. Once the program budget is established, it would accept a total amount of applications for projects that would just use up the program budget, in a way that maximizes the amount of solar subscribed in the program. For example, the interim program could use a competitive solicitation, and encourage applying projects to achieve the maximum cost recovery possible through payments from customers, wholesale and bilateral market sales, and federal incentive programs.[8] An interim program design that could meet all these objectives – simple, familiar, budget-based and competitive in nature -- is the NJ SREC II program used successfully by three of the state's BGS providers.

iii. Avoid unintended consequences from ambiguity or any lack of transparency around closing the SREC program to new applications.

(a) The problems. The new law's requirement for closing of the SREC program to new applications leaves the Board with ample discretion regarding the actual decision rule to be used for determining when to close the program. The law provides

> No later than 180 days after [the enactment of the new law], the board shall adopt rules and regulations to close the SREC program to new applications upon the attainment of 5.1 percent of the kilowatt-hours sold in the State by each electric power supplier and each basic generation provider from solar electric power generators connect to the distribution system. The board shall continue to consider any application filed before the date of enactment of [the new law]. The board shall provide for an orderly and transparent mechanism that will result in the closing of the existing SREC program on a date certain but no later than June 1, 2021.

Discussions with a variety of interested parties indicates there are two fundamentally different ways of interpreting what the statue means regarding when the SREC program should be closed to new

[7] It may be helpful, for early implementation and high levels of business continuity, to not design the interim program as a vehicle for piloting new types of solar products and business models.

[8] The Board is required by the new law to include, where feasible, such cost reduction measures in any modification or replacement of the SREC program.

applications.[9] Some parties think the plain language of "on the attainment of 5.1 percent of the kilowatt hours sold" means the program should be closed *after* the 5.1 % of total retail sales, in the current or last energy year, have actually been generated by solar generation in the state.

Despite its agreement with the plain language of the statute, such an interpretation would almost certainly create a significant oversupply of SRECs, for several reasons. First, solar installations take place throughout the year, so some new projects that operate during only a part of the energy year in question will produce a greater amount of electricity the next year, when they are in operation for the entire year. This overproduction would continue each year in the future, even as the solar requirement gradually declines. Similarly, any approved projects in the pipeline that have not yet commenced operation when existing, operating projects have produced 5.1 percent of total retail sales, will produce more energy in each future year when they are completed, leading to an additional surplus of SRECs relative to demand. Finally, this approach would not recognize or address the significant volume of unretired SRECs from previous years, which many interested parties have "banked" on the expectation of a market shortage, not an oversupply. Failing to recognize these banked SRECs in the attainment of 5.1 percent of the state's total retail sales would not only contribute to an oversupply, but could increase the harm of that oversupply to many SREC holders. As pointed out above, in the absence of a new approach to setting stable and sustainable SREC prices, such an oversupply would very likely cause the SREC trading market to crash, resulting in SREC prices insufficient to support ongoing recovery of financial and operating costs for many legacy solar projects.

Even under an administrative price path such as we recommend, however, an overproduction of SRECs relative to the compliance requirements is problematic. In the face of such an oversupply, the BPU would have two basic choices: Either require compliance entities to buy more SRECs than the statute requires; or deny the administratively determined SREC prices to SRECs in excess of the compliance requirement. The first choice further depletes the RPS budget's ability to support new solar and other class 1 renewables and saddles ratepayers with extra costs, while the second requires the BPU to pick both winners and losers, in terms of deciding which legacy solar parties should bear the financial burden of the BPU's decision to exceed the 5.1 percent requirement.

Others think that the requirement should not be interpreted in such an after-the-fact manner, in part to avoid all of these problems that would result from an oversupply. They reason that such an outcome would be inconsistent with the legislature's requirement that the BPU create "an orderly and transparent mechanism" for closing the existing program and that it "provide an orderly transition to a new or modified program." Further, the oversupply itself would be inconsistent with the clear 5.1 percent mandate, which the legislature established in the new legislation and gave no indication that it wanted the BPU to exceed rather than meet. Indeed, exceeding the solar requirement, even by a few tenths of one percent, could use up a significant fraction of the remaining budget under the RPS cap, making it more difficult to achieve the RPS goals through incentives for newer, less expensive, solar and other Class 1 renewables -- even with sustainable SREC prices.

It could also be argued that buying more SRECs than required would violate another provision of the new law, namely that the modified SREC program should "continually reduce, where feasible, the cost of

[9] The BPU's proposed rule regarding this same topic simply repeated the statute's language and did little to clarify or change these views.

achieving the solar energy goals set forth in this subsection." Finally, additional support for closing the SREC program on a prospective basis may be found in the law's requirement that the Board continue to consider SREC applications made before the enactment of the new law. This proviso seems to imply that the Board could close the program to applications made at any time after the law's enactment, so long as it did so in a way that could reasonably be relied on to support the attainment of 5.1 percent of retail energy sold being from in-state solar systems.

(b) The solution. To avoid the many problems that would be created by an oversupply of SRECs, even if accompanied by a sustainable SREC price path, we recommend that the Board's proposed and final rule should include a decision rule for closing the SREC market that is designed to achieve the 5.1% energy production target using unretired SRECs from existing projects, along with those from accepted SREC applications it projects to be completed, and without materially exceeding the 5.1%. Further, this decision rule must be carefully designed to fit and work well with the details of the other key components of the solar transition, namely an interim solar program available upon the closure of the SREC program, and a transparent, fair and effective approach to assuring sustainable prices for SRECs and the incentives of any interim program.

Appendix 2 of these comments contains our recommendations for the basic framework and content of a proposed rule that would integrate the solutions to these challenges in a way that will allow them to work together. In any event, the proposed rule should include clear and full details on how the BPU will determine the closing date of the SREC program to new applications, how it proposes to assure stable and sustainable SREC prices after closing, and the timing and other details of an effective interim program to ensure solar business continuity until the new incentive programs are implemented. Equally important, any such proposed rule should be preceded by ample comment and technical discussion sessions to assure all concerns, suggestions and ideas from the solar industry, industry experts and other stakeholders are understood and can be addressed in the proposed and final rule.

4. Summary

For a successful solar market transition, the BPU must create the market certainty and the policy certainty needed to support existing and new solar in the state, within the overall framework of the new energy law. To do so, we respectfully urge the BPU to take steps leading toward a proposed and then a final rule with detailed, integrated and workable solutions, consistent with the suggestions in these comments, to:

- ensuring sustainable SREC prices after the SREC program closes,
- having a working, sustainably priced interim program when the SREC program closes, and
- developing a clear, well-considered decision rule for when to close the program.

Further, we encourage the Board to provide additional opportunities for technical discussions and reasoned input on these matters prior to issuing a proposed rule. By so doing, the Board will assure both the transparency and the expert input needed for its rule to support an orderly transition.

Appendix 1 of these comments contains our answers to the specific questions asked by BPU staff, which inform and support the recommendations made herein. Appendix 2 contains an overview of our analysis of SREC price paths that may adequately compensate legacy solar providers, while conserving

enough of the budget available under the RPS cost cap to ensure both achievement of the RPS goals and continued growth for New Jersey's solar industry.

Appendix 1

Answers to BPU staff questions.

1. How should the BPU identify, determine, and calculate the "attainment of 5.1 percent of the kilowatt-hours sold in the State by each electric power supplier and each basic generation provider from solar electric power generators connected to the distribution system"?

We recommend the BPU develop a decision rule for closing the SREC program to new applications that will result in enough ongoing solar electricity production to ensure the total supply of unretired SRECs is sufficient to just meet the 5.1% solar mandate in energy years 2021, 2022 and 2023 and the relevant solar mandate for subsequent years, while avoiding, if possible, or strictly minimizing any oversupply of SRECs relative to demand.

However, this recommendation is predicated on the BPU also taking two essential parallel steps, namely establishing an interim program that can be ready upon or soon after the SREC program is closed, and establishing a transparent and sustainable SREC price path that will be in place on the day the program is closed, and will replace the traded SREC market as a means for setting SREC prices and transferring SRECs from holders to compliance entities. By "sustainable SREC price path", we mean a schedule of annual SREC prices that adequately compensates legacy solar projects while also preserving enough of the budget available under the RPS cost cap to provide the incentives needed for new solar and other Class 1 renewable resources to meet the RPS requirements in the statute. Without a means of setting and transacting at sustainable SREC prices, simply closing the program to new applications while relying on the current trading market to set SREC prices with just enough supply to meet demand, and no entry possible, is extremely likely to result in SREC prices above levels that would preserve enough of the budget available under the RPS cap to meet the RPS goals through continued development of renewable energy.

Such a decision rule will necessarily include evaluating the number of unretired SRECs from previous vintages and determining how many more megawatts of new solar would be needed, together with these "banked" SRECs, to meet compliance requirements through the peak years of the solar mandate and beyond. Then the existing pipeline of projects should be evaluated for when it is likely to produce this number of installed megawatts. Only those projects that comprise this number of megawatts should be granted admittance to the SREC program. Others can be referred to the interim program. Any shortfall of SRECs needed for compliance could be made up by converting megawatt-hours generated through the interim program into SRECs.

2. Would closing the SREC program to new applications before there is an oversupply cause SREC prices to reach or exceed the Class 1 renewable cost cap (per the Clean Energy Act)? Would closing the SREC program to new applications after there is an oversupply cause SREC prices to drop significantly?

Yes. It is well-known that the traded SREC market has what is often referred to as "a vertical demand curve." This is because demand measures the marginal benefit of consumption to the buyer, and the marginal benefit of consumption to a compliance entity is simply avoiding the SACP. That means if there are not quite enough SRECs available to meet the aggregate compliance requirement, the market will clear at the SACP until the undersupply is relieved by new entry or falling demand.

Further, the SACP is far above the SREC price level that would consume all of the RPS budget simply for SREC payments until 2026 under reasonable assumptions for the RPS targets and RPS budget, as shown in Table 1. Table 1 simply divides the annual cost cap (assuming total retail dollar sales stay at current levels) by the SRECs required in that year to meet the solar mandate (assuming total retail kilowatt-hour sales stay at their same level). The amounts in column 5 of Table 1 show the resulting SREC prices that would consume the entire RPS budget. As shown, this level is below the new law's SACP for each year up to 2026. An undersupplied, closed SREC market could easily reach levels that would use up all of the budget available for new renewables, including new solar, needed to meet the RPS goals.

TABLE 1

Year	Total Class 1 GWH required	SRECs required (1000)	Class I Cost Cap ($MM)	SREC price that uses entire RPS budget	SACP
2020	15,750	3,675	$927.8	$252	$268
2021	16,875	3,825	$927.8	$243	$258
2022	19,875	3,825	$721.6	$189	$248
2023	22,125	3,825	$721.6	$189	$238
2024	24,375	3,675	$721.6	$196	$228
2025	26,250	3,600	$721.6	$200	$218
2026	28,875	3,375	$721.6	$214	$208
2027	31,125	3,263	$721.6	$221	$198
2028	32,625	2,805	$721.6	$257	$188
2029	36,000	2,303	$721.6	$313	$178

Any such shortage is likely to be structural and persistent in a market that is closed to all new entry. Since the traded SREC market, like all decentralized markets, trades on expectations of future supply and demand as well as current period conditions, any such expected structural shortage is likely to result in SREC prices too high to allow the RPS goals to be met.

Oversupply price dynamics are similar. As soon as the compliance entity has enough SRECs to avoid the SACP, the marginal benefit to that buyer of one more SREC falls dramatically, perhaps to the discounted future marginal benefit of avoiding the SACP in the future. When all compliance entities know that there are more than enough SRECs in the market to satisfy current and future demand, the marginal benefit of all SRECs will fall as far as the next alternative revenue stream, which is to sell the SREC in the REC market instead. Since the solar mandate falls each year after 2023, it would be especially easy for expectations to form that the SREC market will be oversupplied, unless the BPU makes its intentions and its decision rule for when to close the SREC market as clear and transparent in its details as possible.

One more point regarding SREC market dynamics is essential. Demand for SRECs is directly a function of total retail energy sales, since the solar mandate is expressed as a percentage of those sales. Thus

demand for SRECs can fluctuate unpredictably, making it impossible for the BPU to ensure any kind of "balanced market" or stable pricing in the closed SREC market. Instead, prices in such a market are likely to be highly volatile, with the risk of high prices crashing suddenly and for extended periods, and of low prices spiking suddenly and for extended periods. To avoid these risks, not only to the RPS goals but to SREC generators as well, the BPU should move from the SREC traded market to an administratively determined, sustainable SREC price path, upon the closing of the SREC program to new applications, and with full details transparently available well before then.

3. Explain your understanding of what constitutes an "orderly and transparent mechanism that will result in the closing of the existing SREC program on a date certain …"?

Our understanding is, first, that this requirement should be read together with and informed by the requirement in the next paragraph of the new law that calls for the BPU to "provide an orderly transition from the SREC program to a new or modified program." Thus it is not just the mechanism for closing the SREC program that must be orderly and transparent, but the entire transition from the closed program to a modified or new program must also be orderly.

To have such an orderly transition, the mechanism – that is, the details of the decision rule for when, how and on what basis – the BPU closes the SREC program to new applications must itself be clear, reasoned and workable, and able to be understood as such by solar market participants, as described in response to Question 1 above. But in addition, other key policy features needed for the entire transition to work also need to be transparent in detail, reasoning and workability, and need to be promulgated in combination with the decision rule for closing the SREC program. As discussed in our comments, these additional features that are needed to ensure an orderly transition are (i) a sustainable price path for SRECs after the SREC program – and the SREC trading market – are closed to new entry; and (ii) a practicable, sustainable interim program to ensure ongoing business continuity for solar companies between the time the SREC program is closed and the new incentives required by the statute are implemented.

4. How can the Board ensure SREC prices are sufficient to support an orderly and transparent closure of the SREC program, while providing enough money under the cost cap to fund new solar incentive programs and other Class 1 renewables to meet the 50% RPS requirement by 2030?

We strongly recommend the BPU go through an analytical exercise comparable to that described elsewhere in our comments to find an administratively determined SREC price path or paths that will achieve the above objectives. For reasons given in our response to question 2, we anticipate there is no other way to achieve these goals, due to the unstable and volatile fundamentals and structure of the SREC trading market, especially once it is closed to all new entry. An analytical approach comparable to the one we recommend will allow the BPU to allocate the budget created by the RPS cost cap among legacy solar SRECs, future solar investment, and other Class 1 renewable resources needed to meet the RPS goals. We believe that such an allocation of the budget can support adequate, fair compensation to legacy solar through administratively determined SREC prices, robust growth in new solar, and enough additional Class 1 renewables to meet the RPS goals. See Appendix 2 of these comments. In addition to determining such a price path, the BPU will need to develop and implement a transparent, workable and efficient way to exchange SRECs for the administrative prices and allow electric power suppliers and basic generation providers to receive the SRECs so exchanged to meet their compliance needs. We suggest that such an exchange system could be, to a significant extent, modeled on that being

developed for ORECs. For such a system to be transparent and workable, it should be developed with considerable stakeholder and market participant input.

5. What alternative approaches should be considered to allow for adequate compensation of existing solar projects while preserving enough money under the cost cap to fund new solar incentive programs and other Class 1 renewables to meet the 50% RPS requirement by 2030?

We do not see any better alternative to the administratively determined, sustainable SREC price paths. While we recommend a purely administrative transactional process for settlements, we are aware that some parties prefer modifying the current SREC market in ways that would ensure SREC prices stay within a relatively narrow zone of sustainable prices, and we encourage the board and other parties to consider such approaches carefully in terms of their effectiveness, workability and ease of implementation.

We do recommend several alternative policy features could be included in any approach to keep SREC prices sustainable, that would allow the BPU to achieve more future solar growth for a given SREC price path, a higher SREC price path for a given level of new solar, or some combination of these objectives. The key alternative policy features we recommend considering are:

(a) count retired SRECs towards the RPS goals, rather than viewing the solar mandate as in addition to the RPS mandate;

(b) find ways to further reduce the cost of wind RECs – for example, through power and REC purchase agreements to finance new, highly cost-effective wind development -- that are needed to fill up the RPS requirements within the RPS budget remaining after SREC purchases and new solar incentives; and

(c) consider making the cumulative RPS budget available by carrying forward any surplus in the budget (that is, expenses not incurred and not charged to ratepayers in one year) for use in subsequent years.

Our analysis suggests each of these approaches could substantially increase the budget available for allocating among legacy solar SRECs and new solar developments, while still attaining the RPS goals in 2030 and all prior years.

6. Consistent with the guidelines in the law, how can the BPU ensure continuity between the closure of the SREC program to new applications and the establishment of a new or modified set of solar programs?

Assuring business continuity is essential for an orderly transition, and will require an easy to implement, proven-to-work interim program whose costs fit within the overall RPS budget and the portion allocated to new solar for the one or two years the interim program would need to be in existence. Please see our general comments for additional detail on our recommended features and implementation of such a program.

7. Are there approaches or concepts the Board should consider for early implementation as it explores new or modified solar programs?

We recommend that the Board focus at this time on the key elements of the current stages of the solar transition, namely ensuring a sustainable SREC price path upon and after closing the SREC program to new applications, developing a transparent and workable decision rule for closing the SREC market

without a significant oversupply, and having a workable, transparent interim program available on the date the SREC program is closed. Beyond that, we support and would underscore the guidelines for new solar incentive programs in the Clean Energy Act, and look forward to participating in the processes required by that part of the Act.

8. As the Board begins to consider the structure of new or modified solar incentive programs, what goals or approaches are most important to assuring the long-term growth of a sustainable solar industry?

We note that the Clean Energy Act repeatedly calls for transparency, consultation with stakeholders and experts, and competitive processes for new and modified programs. We strongly support all of these as essential for the long-term growth of a sustainable industry. In addition, we recommend the Board look for durable policies that avoid boom and bust cycles or attract such strong political opposition that they are unlikely to be sustained from one administration to the next. Instead, policies that rely on fair competition, that can evolve gradually over time as clean technologies improve, and that face policy and market incentives to deliver maximum value to customers are most likely to support a sustainable clean energy industry and provide the continued growth needed to decarbonize the power sector and other energy-consuming sectors.

9. How can the Board best ensure that the new solar program will continually reduce the cost of achieving the State's solar energy goals, as required by the Clean Energy Act?

With renewable energy, flexible load and storage costs plummeting globally, we see new and promising approaches to cost reduction that we encourage the BPU to embrace. First, as noted above, competition has been proven to dramatically reduce costs around the world and across the US, and we encourage continued, fair competition be incorporated in all New Jersey's solar policies. Second, as renewables and their key enabling technologies of energy efficiency, flexible load, and storage reach scale in other US markets and globally, we see there are tremendous cost advantages in selected the right mix of these resources, in the right location, to best meet varying load levels reliably. The right mix of wind and solar, located in the right places for low delivered costs and production profiles that better match load, can be substantially less costly than building too much of either, or building both in places where its total delivered cost is excessive. Adding the right amounts and kinds of storage, efficiency and flexible load, all located in our key load centers, can further and dramatically improve the economics of clean energy portfolios. Doing this effectively requires both local and regional efforts. Locally, the BPU should build expertise in optimizing the mix of flexible load, storage and renewable energy in the state, while aggressively electrifying additional load to reduce total emissions. Regionally, the BPU should begin to explore the state of the art of identifying and supporting the regional components of such clean energy portfolios, and use the state's membership in the PJM regional grid as further leverage to lower the cost and improve the environment for all New Jersey residents, as well as recruiting additional states to make our entire region, like our state, 100% clean energy.

10. What alternate models in other states or localities should the Board evaluate as it considers the structure of a new or modified solar program?

A number of states have experimented with hybrid incentives that use competition to establish compensation levels by non-market means, such as power purchase agreements or tariffs, to compensate solar projects. The competitive pressure provides strong incentives for the projects to

maximize their non-incentive payment streams, such as from energy market sales, bilateral sales, or payments for customers for value rendered, such as reduced utility bills or increased resilience. Both the alternative revenue streams and the competition to be the best, most cost-effective provider can dramatically reduce the cost of the incentives, while maintaining or even improving solar company earnings and valuations. We recommend that the BPU explore such programs, including in Massachusetts, Hawaii, Colorado and Illinois. Hawaii and Colorado both also integrate competitive procurement of new solar, storage and other clean energy resources directly into their integrated resource planning process, which has two major benefits: first, it ensures the plans have realistic, up-to-date, and ready-to-execute prices and performance assumptions; and second, it saves a lot of time and cost in terms of managing separate planning and procurement processes. Such a competitive planning process could play a major role in helping New Jersey achieve the cost savings we discuss in our answer to question 9.

11. Please provide general comments on any issues not specifically addressed in the questions above.

Please see our general comments, above.

Appendix 2

Notes on identifying sustainable prices for SRECs and an interim program

1. Identifying sustainable SREC price paths. The RPS cost cap establishes an annual budget for the incentives for all Class 1 renewables, other than offshore wind. It is relatively straightforward to project an annual budget for each year in which the statute mandates a solar requirement as a share of total retail sales, based on reasonable assumptions regarding future energy prices and rates and total retail energy consumption. To find sustainable SREC prices, this annual budget needs to be allocated among SREC payments and incentives for new solar and other Class 1 renewables, other than offshore wind, needed to meet the RPS requirements.

For any given SREC price path, it is straightforward to calculate the dollars from the budget that would be spent on achieving compliance with the statute's annual solar mandate, by multiplying the required number of SRECs to be retired in each year by the assumed SREC price in that year. Subtracting this total SREC spending in each year from the projected annual budget in each year leaves the remaining budget to fund incentives needed in that year to achieve the RPS goals, including the annual cost of incentives for any new solar in the state. Because the RPS cost cap does not include offshore wind, the RPS goals that must be met within the budget for each year are the overall statutory RPS goals, minus any offshore wind renewable energy credits produced and retired in that same year.

This remaining share of the budget then needs to be allocated among three categories of incentive costs. The first category is incentive payments made in each year through multi-year incentive programs such as long-term contracts and declining block tariffs for new solar or other Class 1 renewable projects from prior years. For example, assuming ten-year contracts, a new solar project under a long-term contract in 2019 will receive incentive payments through 2028, and the cost of those payments needs to be within the RPS budget for all those years. The second category is new solar projects that are initiated in each year, which will incur incentive costs in that year and each subsequent year it is eligible for them. The third category is enough renewable energy credits (RECs) to meet the RPS goals for the year, net of current offshore wind energy production.

Our preferred approach to allocating the budget remaining after SRECs to these three categories is to maximize the amount of new solar that can be developed in the current year, after paying the incentives for new solar from previous years that is still eligible for incentives, subject to the constraint that enough money be set aside to buy enough RECs to meet the RPS goals for the current year. This approach maximizes the share of the RPS cost cap that can be spent on the combination of legacy and new solar, while spending as little as possible on less expensive wind RECs needed to meet the RPS goals. Further, with lower SREC prices, it ensures that as much as possible of the budget freed up by lower SREC prices is spent on new solar in the state as possible, while still meeting the RPS goals.

Once the analysis is set up in this manner, it is relatively straightforward to test a wide variety of SREC price paths to see how much new solar can be built each year while still achieving the RPS goals and without exceeding the RPS budget. While there is clearly a tradeoff between SREC prices and the maximum amount of new solar that can be built each year, under reasonable assumptions about future total retail sales, in kilowatt-hours and in dollars, the cost of new solar, market and other revenue streams available to help defray new solar costs, and the penetration of offshore wind, our version of the analysis described above suggests that SREC price paths that start in the $130 to $150 range and

decline at approximately 6% per year through 2033 (the end of the longest SREC eligibility period under current law) allow new solar construction of between 100 and 400 MW each year, while staying within the RPS budget and fully meeting the RPS goals.

Any such SREC price paths, provided the BPU finds they provide fair and adequate compensation for legacy solar projects, would be sustainable. That is, they would fairly compensate legacy solar, be consistent with the overall RPS budget, leave enough of that budget to meet the overall RPS goals, and would ensure continued future growth for solar in the state.

Importantly, our analysis suggests that more solar could be built each year at a given SREC price, within the budget and while meeting the RPS goals, under a variety of new policy approaches. Specifically, counting retired SRECs towards the RPS goals, instead of treating them as above and beyond the RPS goals, would allow significantly more solar to be built each year, for any given SREC price path. Similarly, under some scenarios there is a significant surplus under the annual budget in early years. To the extent this budget is not needed to address some of the issues identified in item #2 of this appendix, allowing unused portions of the RPS budget to be tapped in future years could allow significantly more solar to be built each year.

We recommend the BPU and interested parties explore such an approach to identifying sustainable SREC price paths, with the objective of finding a sustainable path or an aggregate of several paths for solar projects of different types and vintages, that is itself sustainable. Ideally, such explorations and increased consensus around their key features would take place prior to the issuance of a proposed rule and would inform that rule to ensure its ultimate fairness and workability. Of particular importance is additional insight into, and ideally consensus on, levels of SREC pricing that provide adequate compensation to legacy projects, while still supporting acceptable amounts of new solar within the state, without compromising the achievement of the RPS goals.

2. Additional critical issues for stakeholder input. Current settlement, purchasing, hedging and compliance mechanisms for unretired SRECs, whether from newly eligible solar projects or from prior vintages, may also need to be modified to work efficiently with an administrative SREC price. Any such modifications should be carefully considered to ensure they are fair, non-discriminatory, and practicable, and to minimize their placing unsustainable demands on the RPS budget. All these critical details should be informed and improved by a collaborative or stakeholder process prior to the issuance of a proposed rule. Special attention may be warranted for the treatment of unretired SRECs from earlier vintages, which may be held by a variety of parties under a variety of contractual arrangements. These issues could implicate whether or not there will be a substantial budget surplus in the early years of the RPS program, and thereby impact the identification of an optimal sustainable SREC price path, as discussed above.

3. Ensuring sustainable prices for the interim program. The same analytical process that can establish a maximum annual budget for new solar, for a given SREC price path, should be followed to set up a maximum annual budget for the interim program. Setting such a budget will ensure that the interim program will not eat up current and future budgets needed to support continued solar growth and meet the RPS.

The interim program should be designed to not only address the gap between the SREC program and new solar incentive programs, but to preserve as much money as possible for those new solar programs,

thus ensuring both business continuity and faster future growth rates for solar. One such approach is to build on the competitive bidding and procurement process used in the NJ SREC II program, which ended in 2018. This approach has the added benefit of building on a pre-existing program, which could make it implementable upon the closing of the SREC program to new applications, even if the BPU chooses an early closing to avoid the problems of an oversupply of SRECs in a closed market. Similar to the approach to finding and implementing sustainable SREC prices, the design and scope of the interim program would benefit from further technical discussions and stakeholder input prior to the issuance of a proposed rule.

4. Examples of potential sustainable SREC price paths.

The following table shows the results of our analysis, using the methodology described above, of six SREC price paths in two different policy cases.

Table 1

Case 1: Impact of initial SREC price and price path over time

Key variables & output	A	B	C	D	E	F
Initial SREC price	$150	$150	$135	$135	$120	$120
SREC price decline rate/yr	6%	10%	6%	10%	6%	10%
Initial LCOE	$150	$150	$150	$150	$150	$150
Legacy IN or OUT	out	out	out	out	out	out
Wind PPA or REC	REC	REC	REC	REC	REC	REC
Max New Solar MW/yr	**88**	**209**	**187**	**296**	**261**	**317**
% spent on legacy solar	41%	34%	37%	31%	33%	27%
% spent on new solar	11%	25%	23%	36%	32%	38%
% spent on wind RECs	23%	22%	22%	21%	21%	21%
'19 to'33 budget surplus ($B)	$2.574	$1.689	$1.646	$0.850	$1.073	$0.928

Case 2: Legacy solar in or out of RPS

Key variables & output	A	B	C	D	E	F
Initial SREC price	$150	$150	$135	$135	$120	$120
SREC price decline rate/yr	6%	10%	6%	10%	6%	10%
Initial LCOE	$150	$150	$150	$150	$150	$150
Legacy IN or OUT	in	in	in	in	in	in
Wind PPA or REC	REC	REC	REC	REC	REC	REC
Max New Solar MW/yr	**169**	**290**	**254**	**319**	**290**	**321**
% spent on legacy solar	41%	34%	37%	31%	33%	27%
% spent on new solar	20%	35%	31%	39%	35%	39%
% spent on wind RECs	19%	18%	18%	17%	18%	17%
'19 to'33 budget surplus ($B)	$1.830	$0.945	$1.104	$0.920	$1.052	$1.275

Each column labeled A through F in the table contains a different price path, with the same price path in the same column in each case. There are two price paths with initial SREC prices of $150 (columns A, B) two with initial prices of $135 (columns C, D) and two with initial prices of $120 (columns E, F). In each of these pairs, prices decline by 6% per year in the first path, and by 10% per year in the second path. The only difference between Case 1 and Case 2 is that SRECs are assumed to not count towards the RPS goal in the first case and to count towards it in the second case. This allows direct comparison of the

impact of this one change in policy.[10] Comparing the maximum amount of new solar that can be built within the budget in the same scenario (i.e., column) in the two different cases shows that this one policy change could dramatically increase the amount of new solar that can be built each year, especially at higher SREC price paths.

By reading across the scenarios horizontally, Table 1 clearly illustrates the basic tradeoff that faces the BPU and the solar industry -- higher SREC prices for legacy solar mean reduced funds available under the RPS cost cap for new solar development in the future. But the results in Table 1 go beyond simple tradeoffs and suggest that there could be a variety of sustainable SREC price paths for the BPU to use to help ensure a successful solar market transition.

For example, if the BPU were to find, after additional input and technical discussion with affected parties and experts, that an SREC price path that started, for example, at $135 and declined at an annual rate of 10% offered fair and adequate revenue, including protection from excessively low SREC prices, to legacy solar, there would be enough funds left in the annual RPS budget to fund incentives needed to develop roughly 300 MW of new solar every year from 2019 to 2033 (see Scenario D in Case 1 and Case 2) – under the relatively conservative assumptions in our analysis, including those for new solar costs in the future. Somewhat more solar could be developed each year, under those same SREC price paths, if the BPU can find a way to reduce the cost of wind RECs needed to fill up the remainder of the RPS requirements, since the less these wind RECs cost, the more of the budget is available to pay for new solar incentives. For example, replacing spot market wind REC purchases with long term contracts for bundled energy plus RECs from new wind development could result in materially lower financing and hedging costs for wind developers, with the savings reflected in significantly lower REC prices and thus more money left in the RPS budget for new solar incentives.

Table 1 also shows how much of the cumulative RPS budget for this entire period is not spent in each scenario, due to the analytical assumption that the annual budget is binding and surpluses cannot be carried forward. Much of this surplus is due to the higher RPS budget of 9% of total retail dollar sales in 2019, 2020 and 2021, and if it is not spent then or carried forward, accrues as customer savings relative to the total budgeted amount. The BPU may decide to use some of this surplus to help address issues associated with unretired SRECs from earlier vintages, which would otherwise inhibit an orderly transition from the SREC program to modified or new programs. However, to the extent there is any substantial surplus, if the BPU were to allow that surplus to be credited against future year's RPS expenditures, even more new solar could be built at a given SREC price path.

[10] Other key assumptions, not listed in the table, are that: total retail kWh and dollar sales remain at current levels throughout the period analyze (2019 through 2033); new solar incentives are equal to the assumed LCOE minus assumed PJM energy and capacity revenues of $45 per MWH; the initial solar LCOE declines by 1% per year; wind RECs initially cost $12 and decline by 1% per year; that the full 3500 MW target of offshore wind is deployed in tranches of 500 to 600 MW between 2023 and 2030; and that the RPS budget is applied on an annual basis with no carry-forward of any surplus in the early years for use in later years. We view these assumptions as generally conservative. For example, increasing utility rates over the next decade are probably more likely than flat or declining rates, and would tend to result in a larger RPS budget. Similarly, significant energy efficiency gains, outrunning the pace of electrification in the early years of the next decade, would lead to smaller RPS MWH targets than assumed, making it easier to stay within the available RPS budget.

Philip J. Passanante
Assistant General Counsel

92DC42
PO Box 6066
Newark, DE 19714-6066

500 N. Wakefield Drive
Newark, DE 19702

302.429.3105 - Telephone
302.429.3801 - Facsimile
philip.passanante@pepcoholdings.com

atlanticcityelectric.com

atlantic city electric
An Exelon Company

November 2, 2018

VIA FEDERAL EXPRESS and
ELECTRONIC MAIL
rule.comments@bpu.nj.gov

Aida Camacho-Welch
Secretary of the Board
Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
P.O. Box 350
Trenton, New Jersey 08625-0350

RE: New Jersey's Solar Market Transition

In the Matter of Modification of the Solar Renewable Portfolio Standard ("RPS") and Solar Alternative Compliance Payment Schedules and the Reduction of the Qualification Life for Solar Renewable Energy Certificates Solar Facilities
BPU Docket No. QO18070698

Dear Secretary Camacho-Welch:

Atlantic City Electric Company ("ACE" or the "Company") appreciates the opportunity to submit comments to the New Jersey Board of Public Utilities (the "Board" or "BPU") on a number of issues surrounding the transition of the New Jersey Solar Renewable Energy Certificate ("SREC") Program pursuant to the Clean Energy Act of 2018, P.L. 2018, c. 17. The Company reserves the right to modify or supplement these responses as the proceeding develops.

Request for Comments

Stakeholders have been invited to submit general comments on the issues below. ACE's response is noted beneath each question:

1. How should the BPU identify, determine, and calculate the "attainment of 5.1 percent of the kilowatt-hours sold in the State by each electric power supplier and each basic generation provider from solar electric power generators connected to the distribution system"?

ACE Response:

Attainment of the 5.1 percent should be measured by the combination of existing solar capacity plus the proposed solar capacity that has obtained Permission to Operate ("PTO") from the electric distribution company ("EDC"). ACE believes it is necessary to include a cut-off for proposed projects that will be included in the 5.1 percent attainment calculation to support market confidence. The PTO date serves as a reasonable milestone along the project development continuum by which to measure the likelihood that a project will deliver capacity into the distribution system.

2. Would closing the SREC program to new applications before there is an oversupply cause SREC prices to reach or exceed the Class I renewables cost cap (per the Clean Energy Act)? Would closing the SREC program to new applications after there is an oversupply cause SREC prices to drop significantly? Please explain your analysis.

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

3. Explain your understanding of what constitutes an "orderly and transparent mechanism that will result in the closing of the existing SREC program on a date certain but no later than June 1, 2021." How much notice is needed, and what specific information should be published?

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

4. How can the Board ensure SREC prices are sufficient to support an orderly and transparent closure of the SREC program, while providing enough money under the cost cap to fund new solar incentive programs and other Class I renewables to meet the 50 percent RPS requirement by 2030?

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

5. What alternative approaches should be considered to allow for adequate compensation of existing solar projects while preserving enough money under the cost cap to support continued growth in solar and other Class I renewables?

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

6. Consistent with the guidelines in the law, how can the BPU ensure continuity between the closure of the SREC program to new applications and the establishment of a new or modified set of solar programs?

ACE Response:

Simply stated, the BPU can ensure continuity by developing a process for the orderly phase out of the existing program and proper phase in of the new program. The Board should involve the EDCs and other stakeholders in the process and the timeline of how the phasing between the two programs will be accomplished.

7. Are there approaches or concepts the Board should consider for early implementation as it explores new or modified solar incentive programs?

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

8. As the Board begins to consider the structure of new or modified solar incentive programs, what goals or approaches are most important to assuring the long-term growth of a sustainable solar industry?

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

9. The Clean Energy Act requires the Board, when conducting a study on how to modify or replace the current SREC program, to ensure that the program will continually reduce, where feasible, the cost of achieving the solar energy goals set forth in the act. How can the Board best ensure that the new program will continually reduce the cost of the achieving the State's solar energy goals?

ACE Response:

ACE respectfully suggests that the Board permit utilities to develop, own, and/or operate utility scale and community solar projects. Large scale projects will be less costly, and the utility could insure that community solar is installed in locations where it provides the most benefit to the grid and to all customers.

10. What alternate models in other states or localities should the Board evaluate as it considers the structure of a new or modified solar program?

ACE Response:

Although ACE has no comments at this time, the Company reserves the right to offer input as the proceeding develops.

11. Please provide general comments on any issues not specifically addressed in the questions above. Please do not reiterate previously made comments, and kindly keep these comments succinct.

ACE Response:

The Company respectfully submits that the Board create a regulatory construct that enables a smooth market transition while also maintaining investor confidence. In addition to the policy questions listed above, ACE recommends that the Board consider the impact of net metering and the cost recovery mechanism associated with upgrading constrained circuits.

Concerning the net meter incentive, it is important that solar customers contribute their fair share to maintain the transmission and distribution grids. The net metering subsidy is particularly relevant to the solar market proceedings because all customers obtain benefits from the grid whether they have a solar installation on premises or not. Non-solar customers must be made whole and the utility tariff structure needs to ensure that the utility is made whole as well.

In addition, to help enable further growth in solar, ACE respectfully submits that a cost recovery mechanism is needed to pay for system upgrades where the aggregate impact of multiple solar installations is creating a capacity constraint on the circuit that no single project can afford to pay. In this specific scenario, the utility could complete any needed upgrades while recouping the costs – and customers would be able to interconnect solar projects on circuits that would not otherwise have been possible.

ACE appreciates the opportunity to provide its Comments and would welcome the opportunity to further elaborate in future proceedings related to the transition of New Jersey's solar market.

Respectfully submitted,

/jpr
Philip J. Passanante
An Attorney at Law of the
State of New Jersey

Flett Exchange, LLC

November 1, 2018

State of New Jersey Board of Public Utilities

New Jersey's Solar Market Transition

Request for Comments:

1. The BPU should calculate the "attainment of 5.1 percent" by the following:
    a. Obtain the official amount of retail electric sales sold in energy year 2019. Multiply it by 5.1% and divide it by 1.2. This will determine the amount of solar installed statewide that is eligible to earn SRECs in order to achieve 5.1% of the electricity is produced by solar.
        1. (example: ry 2016 retail electric sales according to www.eia.gov = 75,359,371 megawatthours, *.051/1.2=3,202,773 installed capacity (kW)
2.
    a. YES: Closing the SREC program before or at the point where the amount of solar installed will produce 5.1% or less of statewide electricity will cause the cost of Class 1 (Class 1 is the combination of Class 1 and SREC since SREC is defined as a Class 1 rec) to reach and exceed the Class 1 renewables cost cap. When this cap will be hit depends largely on three variables. The three variables are: 1. The price of SRECs 2. the prices of Class 1 recs and 3. the retail price of electricity as reported by the EIA (assuming that EIA retail price is the input chosen by the BPU to calculate the cost cap).
        i. SRECS: If there is a shortage of SRECs comparted to the requirement SRECs are expected to trade at 95% of the SACP. This is backed up by past performance in a short SREC market in the past.
        ii. Class 1: IF Class 1 recs move up the cost cap will be hit sooner. Class 1 recs trade in the $7 range now. Class 1 RECs have an ACP (cap) of $50 so there is room for cost increases.
        iii. Retail Electric Prices: IF the retail price of electricity falls the price cap will be hit sooner. The retail price as reported by the EIA in 2016 was 13.38 cents/kWh.

    IF N.J. retail electric sales are 75GWH AND the SREC price is 95% of the SACP and Class 1 recs trade $7 the following is the calculation of how much $ and when the cap is hit/exceeded:

EY	cap	under/over
2019	$ 907,477,545.58	$ (4,649,673.19)
2020	$ 907,477,545.58	$ 82,136,439.23
2021	$ 907,477,545.58	$ 108,788,787.98
2022	$ 705,815,868.79	$ 273,938,849.52
2023	$ 705,815,868.79	$ 204,781,554.76
2024	$ 705,815,868.79	$ 154,094,841.82
2025	$ 705,815,868.79	$ 148,910,117.10
2026	$ 705,815,868.79	$ (25,056,990.86)

b. Allowing more capacity than 5.1% will mathematically guarantee that the current SREC program would trade to Zero. The forward prices (more than 3 years forward) will go to zero in the short term – under 1 year. The spot prices will go to zero between 1 and 3 years depending upon the degree of how much more capacity is allowed to be developed above and beyond the 5.1%. If the BPU allows applications for solar installations to earn SRECs above and beyond the 5.1% it is counter to the legislative intent of the law. The intent of the law was to allow up to enough, but no more installed solar, to produce 5.1% of annual electricity demand in the state.

3. An "orderly and transparent mechanism that will result in the closing of the existing SREC program on the date certain but no later than June 1, 2021" requires the following:
    a. Systems energized before the installed Mw solar capacity reaches .051 % of energy year 2019 retail electric sales divided by 1.2 HAVE THE OPTION TO BE eligible for the current SREC program. (example 76 Gwh *.051 / 1.2= 3,230 installed Mw). All systems energized after this calculated capacity will not earn SRECs)
    b. The BPU should not create a queue because it will be gamed by installers and any gaming will be at the detriment of the ratepayer. Closing the ability to participate by those systems already in the "pipeline" creates winner projects in the pipeline and inhibits competition.
    c. The board needs to establish what the successor SREC program will be as soon as possible so that as the time approaches to close the current program investors can make informed decisions.
4. It is impossible for the Board to "ensure SREC prices are sufficient to support an orderly and transparent closure of the SREC program, while providing enough money under the cost cap to fund new solar incentive programs and other Class 1 renewables to meet the 50% RPS requirement by 2050". (see attached blog article published by Flett Exchange, LLC commenting on the flaws in The Clean Energy Act) The Clean Energy Act failed to adjust the SACP for solar in a meaningful way and was designed to "pin" the SACP levels. This approach maximized payments to current solar owners at the detriment of the ratepayer and for all future solar development in the State. It is mathematically impossible to maximize developer and solar owner profits, continue to give sufficient future subsidies to new solar development and keep those costs under the 9% and 7% caps. However, the new section added to The Clean Energy Act stating: "The board shall take any steps necessary to prevent the exceedance of the cap on the cost to customers including, but not limited to, adjusting the Class I renewable energy requirement" appears to give the BPU latitude to make adjustments to any part of the law that will reduce cost outside of the newly protected offshore wind component. However, it needs to be noted, any reduction in demand for the SREC program after it is "closed" and by sequestering it outside of incentivizing future development of solar creates a situation in which a reduction in demand will cause a collapse of SREC prices. The preferred lever to reduce costs would be a lower SACP level. However, one of the underlying aspects of the New Jersey Solar market for the last decade lies in the investor confidence that once

established by law the BPU can only increase the SACP, NEVER reduce the SACP as per the following excerpt of the Clean Energy Act: "The board may initiate subsequent proceedings and adopt, after appropriate notice and opportunity for public comment and public hearing, an increase in solar alternative compliance payments, provided that the board shall not reduce previously established levels of solar alternative compliance payments, nor shall the board provide relief from the obligation of payment of the SACP by the electric power suppliers or basic generation service providers in any form.". It is widely understood in investor circles of New Jersey solar that only the legislature has the power to reduce an SACP. The added cost cap language of the Clean Energy Act runs counter to that. Unfortunately, the BPU will have to decide which lever to pull in keeping below the cost cap. Lower the SACP and it jeopardizes investor confidence built up over a decade or reduce SREC buying requirements and collapse the SREC market to zero.

5. There are no alternatives to "allow for adequate compensation of existing solar projects while preserving enough money under the cost cap to support continued growth in solar and other Class 1 renewables" to reach The Clean Energy Act goals if the costs for solar development are to be paid by the ratepayer. The only alternative is to report back to the legislature that the cost caps are too low and the SACP for current solar are too high if the money to pay is paid by the ratepayer. A separate tax outside of the ratepayer would need to be implemented on New Jersey taxpayers to achieve the goals of The Clean Energy Act or all solar development in New Jersey starting in 2021 will have to stop immediately. One alternative would be to redirect all RGGI funds to new solar development since it is not qualified as Class 1 and may sit outside of the 9% t0 7% cap. It is still paid for by the ratepayer but would allow for circumvention of the cost cap as defined in the legislation.
6. Under the guidelines of the law the BPU can decrease the SREC requirement once the cost cap is hit. This will create an over-supply of SRECs and collapse the SREC market to zero. Since The Clean Energy Act calls for a new SREC program that can potentially "unlink" future development from past investors it is no longer a competitive market with a built-in growth curve. Once the market is oversupplied there is no chance for it to ever recover as opposed to the original SREC program. This will wipe out all past investors in solar and bring the cost to ratepayers down about 900 million a year in which can be earmarked for new solar development. This flies in the face of the legislative intent but can be argued that the phrase "The board shall take any steps necessary to…… " gives it the latitude to do so. The BPU needs to report back to the legislature that the only way to retain continuity is to retain the current SREC program with lower SACPs and an aggressive long term increase in the solar carve-out of the RPS.
7. Flett Exchange stresses that modified solar incentive programs be the following:
    a. Competitive- allow for open access and competition for the development of solar. This is the only way to contain costs for ratepayers
    b. Consistant- Solar investors want consistency. The competitive SREC program has over a decade of success. All approaches should include the current structure while reducing costs – SACP. This was successful in 2012
    c. Fair to Ratepayers with ability for ratepayer incentives to decrease as solar prices decrease: Solar infrastructure costs have consistently decreased at a pace quicker than modeled during the duration of the solar incentive market in New Jersey. Estimates for decreasing costs were built into the decreasing SACP schedule each time it was

adjusted. Originally the estimate was a decrease of 2 to 2.5% a year. Actual installation price decreases were much more. If there was a fixed rate long term contract market instead of the flexible, open and competitive SREC market New Jersey Ratepayers would have been locked into paying for high priced installations for 15 years after they were installed. The BPU did EDC programs over the years and all of them saddled the ratepayers with long term contracts of which some are hundreds of dollars above the active SREC market.

8. When the board considers modifying the structure of the solar incentive program the most important aspect is to allow for open and competitive access to investors while at the same time allowing for the ratepayer to benefit from lower costs of solar. Moving to fixed rate long-term contracts/tariff model hurts competition and guarantees profits to solar developers at the expense of the ratepayer.
9. The best way to modify the current program to reduce costs while achieving solar energy goals is to reduce the SACP to realistic levels for all past and future solar installations while at the same time allowing for open competition as with the current SREC program and discontinue any mandatory long-term contracting locking ratepayers into contracts with developers and investors.
10. The board should look to the failures of feed-in-tarrifs in Spain in which long term contracts backed by utilities guaranteeing profits for power developers created an economic disaster which had to be assumed by the Spanish government (taxpayers). Some of the highest power costs and created 'Energy poverty' in Spain which became an election issue. An open and competitive incentive market like the current SREC program in New Jersey would have prevented this.

Jersey Central Power & Light
A FirstEnergy Company

300 Madison Avenue
P.O. Box 1911
Morristown, NJ 07962-1911

November 2, 2018

VIA ELECTRONIC MAIL

Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor
Suite 314
Trenton, New Jersey 08625
Rule.Comments@bpu.nj.gov

Dear Secretary Camacho-Welch:

Jersey Central Power & Light Company ("JCP&L" or the "Company") is pleased to submit comments on the Board of Public Utilities (the "Board") Staff's request for comments regarding the issues to inform the development and transition of the New Jersey Solar Renewable Energy Certificate ("SREC") Program. JCP&L thanks the Board for the opportunity to provide these comments and looks forward to working with Staff further to ensure successful implementation of any successor solar program.

The Clean Energy Act signed into law on May 23, 2018 requires that the Board, no later than 24 months after the date of enactment of P.L. 2018, c.17, complete a study that evaluates how to modify or replace the SREC program to encourage the continued efficient and orderly development of solar renewable energy generating sources throughout the State. Modifications for any successor program are to be designed to, among other things, reduce the cost of achieving the solar energy goals, develop megawatt targets for segments of the solar market, and establish and update market-based incentives and payment caps. Please find below JCP&L's comments in response to Staff's request.

The Company agrees that any transition to a new replacement or successor solar program needs to proceed on an orderly basis and in transparent fashion, with the input of industry experts, the public electric utilities and regional grid operators. Caution must be exercised so as not to severely impact the market by implementing drastic, large scale program changes.

Some of the States' electric distribution companies ("EDC") currently manage a number of contracts to purchase SRECs under the SREC-Based Financing Programs ("SREC I" and "SREC II"), which offered contracts to purchase SRECs from new solar projects through a competitive solicitation process for 10-year terms at a fixed price per SREC. The purchased SRECs are sold via an auction process. In SREC I, all program costs and expenses are netted against SREC sales proceeds, with any remaining under-recovery of EDC costs charged to customers.

Under SREC II, the SREC purchase and sales costs are again netted, with under-recovery charged to customers and any excess of sales value over purchase cost returned to customers. However, the EDC's administrative costs, which include Company labor and the Program Solicitation Manager fees, are recovered from SREC II program participants. These administrative costs are recovered from the participants by retaining a fixed portion of the SREC contract price as an administrative fee upon payment to the contract holders for SRECs they have provided to the EDCs. Program recovery is dependent upon a sufficient number of active program participants selling their SRECs under the purchase and sales agreements with the EDCs.

SREC values have declined, particularly since the SREC I contracts were executed, resulting in most SRECs being sold at "a loss" relative to purchase cost. Any further reductions in the value of SRECs will increase the amount of costs to be recovered from customers. Hence, disruption to the SREC market should be minimized as much as possible.

The solar market in New Jersey has benefitted from non-market mechanisms, supported by legislative and regulatory policy, including rebates, net metering, renewable portfolio standards and tax credits/incentives. As the market transitions, and the cost of solar declines, the focus should shift toward continued liquid, transparent market operation, with less reliance on subsidies. Beyond efforts to jump-start adoption and nurture a fledgling industry, lucrative subsidies function to distort market signals and stifle efficiencies that are borne out of competition in the marketplace.

The Company believes it appropriate to include consideration of the net metering construct in efforts to transition the solar program. Net metered solar customers benefit from the use of the distribution grid through the delivery of electricity and the export of excess generation. If you couple the banking provisions for any excess monthly kilowatt-hour generation and the full retail credit value applied against billings, solar participants do not pay their fair share of distribution costs, resulting in a subsidy to participants and a cost shift onto other customers for grid services provided by the electric distribution company. A phased approach to alter existing net metering provisions, such as the ability to bank kilowatt-hours, the full retail credit, and alternative tariff charges to net metering customers should all be considered as possibilities to level the playing field for all customers. Reducing the monthly retail credit to a value based upon generation or wholesale energy rates (as grossed up by loss factors) would ensure that net metering customers pay for their use of the distribution system, as they still require the use of the distribution system for electric supply, both when they have a need for electricity because solar generation is inadequate to meet internal requirements, and for when excess solar generation is being exported to the grid.

Solar is an important component in meeting the State's overall clean energy objectives, however, New Jersians cannot afford to meet these objectives "at any cost". Cost must be carefully factored into energy policy decisions and utilities must have full recovery of costs incurred to meet the policy directives. There must be a balanced, multi-faceted approach to ensure available, affordable solar that neither imposes unreasonable costs on the State's residents and customers that have not installed solar nor impacts the financial performance and/or credit

quality of the New Jersey EDCs from the erosion of revenue due to non-cost-based net metering subsidies.

JCP&L again thanks the Board for the opportunity to provide comments on this important issue. If you have any questions or would like to further discuss any of JCP&L's above comments, please do not hesitate to contact me.

Very truly yours,

Thomas R. Donadio

Thomas R. Donadio

Conti Solar
2045 LINCOLN HIGHWAY • EDISON • NJ 08817-3334
t 732.860.4660
www.contisolar.com

November 2, 2018

The Honorable Aida Camacho-Welch
Secretary of the Board of Public Utilities
44 South Clinton Avenue,
3rd Floor, Suite 314, CN 350
Trenton, NJ 08625
Rule.comments@bpu.nj.gov

RE: New Jersey's Solar Market Transition

Dear Secretary Camacho-Welch:

Conti Solar, LLC ("Conti") respectfully submits these comments in response to the questions posed by the Board of Public Utilities (the "Board") regarding the transition of the Solar Renewable Energy Credit ("SREC") market, which were published on October 6, 2018.

Based in Edison, New Jersey, Conti has over 90 full-time employees and is extremely active in the New Jersey solar market, as well as other domestic solar markets. Additionally, Conti hires significant amounts of craft labor and subcontractors, annually employing over 500 craft personnel to execute its rapidly growing business. New Jersey's market has made it possible for Conti to found, sustain, and grow its business, which has repeatedly been ranked as a top provider of Solar Engineering, Procurement, and Construction services in the United States.

Conti has installed 150 MW in New Jersey and is slated to install an additional 50 MW in New Jersey in the imminent future. Conti also currently owns 10 MW of generating solar assets in New Jersey, and has 60 MW of projects under development in the state. Conti looks forward to continuing to participate in New Jersey's solar market, and, both independently and through its membership in the New Jersey Solar Energy Coalition ("NJSEC"), is pleased to take part in this stakeholder proceeding.

Conti generally supports the testimony proffered and comments filed by NJSEC as they promote balance among continued growth in the solar market, stability and predictability for investors, and healthy competition that minimizes costs to ratepayers. Conti believes that the recommendations therein comprise a balanced solution that will allow for the state to meet the 50% Renewable Portfolio Standard ("RPS") requirement by 2030 in a cost-effective manner.

Like NJSEC, Conti is especially concerned with the 7% cost cap in the legislation, which bodes dire consequences to both the robust state of solar employment in New Jersey, as well as private investment in New Jersey solar projects. Unless the cost cap is significantly increased or removed, the Board cannot ensure SREC prices are sufficient to support legacy projects while providing enough money to fund new solar incentive programs, which are necessary to achieve the RPS requirement. Maintaining

current levels of support for legacy projects is necessary, however, to signal to the investment community that New Jersey will be fair and transparent on an ongoing basis. These projects represent significant investments from project stakeholders who have relied upon the Board's solar program. If New Jersey were to retroactively reduce incentives for legacy projects, the market would crash destroying much of the private investment that has been employed in New Jersey.

Moreover, the resulting regulatory uncertainty would from drive away future private investment in New Jersey solar projects, as investors would flock to other states with less risk. Rather than drive investment elsewhere, New Jersey should be incentivizing the build of significant in-state renewable energy resources, which drives employment and economic growth in New Jersey.

Along with other NJSEC members, Conti supports the ultimate development of a solar market design for New Jersey that is modelled on a new and less costly platform. Along those lines, Conti believes the Board should design a permanent program that supports private financing, such as long-term fixed price contracts or a feed in tariff.

During the development process which should take some time pursuant to the statutory mandate, the Board must maintain the current level of employment and investment in New Jersey's solar industry if it is truly dedicated to New Jersey's renewable energy goals and most importantly to maintaining those jobs that already exist. Therefore, any transitional program should not pose fundamental changes to the current program, but simply tweak the program to protect ratepayers in the manner suggested by NJSEC.

Conti appreciates the opportunity to participate in this stakeholder process and urges the Board to follow the recommendations proffered by NJSEC to support the maintenance of the solar industry and workforce.

Please do not hesitate to contact me should you have any questions.

Very truly yours,

Elizabeth McKeever

Elizabeth McKeever
Corporate Counsel

MERCER COUNTY IMPROVEMENT AUTHORITY

Brian M. Hughes, County Executive
Phillip S. Miller, Executive Director
John P. Thurber, Chairman
80 Hamilton Avenue • 2nd Floor • Trenton, NJ 08611
609.278.8100 • f 609.695.1452 • www.mcianj.org

VIA EMAIL AND REGULAR MAIL

October 30, 2018

Ms. Aida Camacho, Secretary
New Jersey Board of Public Utilities
44 South Clinton Avenue
3rd Floor
Suite 314, CN350
Trenton, New Jersey 08625

RE: Response to October 5, 2018 BPU Request for Comments on New Jersey's Solar Market Transition

Dear Ms. Camacho,

In accordance with the Notice dated October 5th, 2018, the purpose of this letter is to provide the Board of Public Utilities (BPU) with comments relative to the above matter, particularly questions 1 through 4, which relate to determining the appropriate process and time frame for the termination of the current SREC Program. As a local public authority in New Jersey who is committed to maintaining stability in property taxes and providing needed services to the residents and businesses of Mercer County, the Mercer County Improvement Authority (MCIA) has a special and strong interest in assuring a fair and reliable process for closing the SREC Registration Program (SRP), which is the clearing house for SREC applications. The MCIA and the County of Mercer have made substantial investments to develop solar projects to the benefit of our constituents, and, as such, are relying on the BPU to implement a process that respects these investments. **Specifically, it is critical that BPU enact rules and policies that do NOT injure the financial foundation of these projects by allowing the SREC market available to existing (legacy) projects to be over-supplied with SRECs, thereby reducing SREC prices and harming local units and taxpayers.**

The MCIA is also cognizant of the fact that there are some stakeholders to the BPU process who are asking the BPU to take direct action to reduce SREC values for existing solar projects to meet the rate cap provisions of the Clean Energy Act. The MCIA and the County of Mercer undertook these solar investments to provide lower cost, clean energy to local units and to further the State's energy policy. **It would be highly unfair, unreasonable, and contrary to state law and policy for the BPU to act in a manner that did not provide a stable investment climate, and to respect and support the decisions made by county and municipal officials.** Accordingly, the BPU should reject any proposal that would reduce SREC prices and devalue these investments to the detriment of New Jersey residents and taxpayers.

The rate caps do not exist in a vacuum and New Jersey's interest in stabilizing property taxes and providing a stable investment climate should be respected by the BPU in its decisions in this matter. Not only would existing projects and local units be harmed by any BPU action to reduce SREC prices for legacy projects, but the development of energy polices and projects in the future will be more challenging (and costly) if investors cannot have confidence in the State and the BPU to provide a stable long-term investment climate. Instead, the BPU should commit itself to stability in the legacy SREC market and work to assure supply-demand balance to protect both investors and ratepayers.

In accordance with this position, it is recommended that the BPU adopt the process described in Attachment 1 to these comments to close the SREC application process. This will help to prevent investments by local units from being stranded as the result of BPU action.

The MCIA appreciates your attention to this matter of great importance to the Mercer County Improvement Authority. Please feel free to contact me should you have any further questions or concerns.

Sincerely,

MERCER COUNTY IMPROVEMENT AUTHORITY

Phillip S. Miller
Executive Director

Attachment 1

1. The BPU should add approved projects in the SRP pipeline plus completed applications not yet approved ("pipeline projects") and apply a "scrub rate" (the historic percentage of projects that apply to the program but do not result in operating projects) to derive the level of projected pipeline capacity. A performance ratio (MWH per MW) should be applied to this total to derive an estimated annual production amount.

2. This amount should be added to the current amount of operating capacity multiplied by the performance ratio (MWH per MW) based on the vintage of projects by in-service year (as project performance declines over time and some of the projects are up to fifteen years old).

3. This sum should be divided by retail sales for the four Electric Distribution Companies (EDCs) based on the most recent Energy Year data available.

4. When this calculation equals or exceeds 5.1% the BPU should stop accepting applications and notify stakeholders. Any projects that applied between a) the last day for which the above data was used in the above calculations, and b) the day at which the BPU closed the application window should be placed on a "waiting list" so that they can be allowed in the SREC program only if, upon receipt of actual data, the 5.1% has not been achieved. This will prevent the market from going short and prevent prices from increasing to the solar alternative compliance payment (SACP).

5. The BPU should provide the market with online reporting of progress towards the 5.1% target. No less than weekly the BPU should publish the estimated solar renewable portfolio standard (RPS) percentage based on installed plus pipeline projects and based on scrub rate and performance assumptions. Online tracking can be supplemented with periodic email status updates to the Office of Clean Energy (OCE) solar Listserv.

6. Finally, and importantly, the BPU should make clear its intent to keep the SREC market in balance for legacy projects over the remaining SREC life of up to fifteen years for these legacy projects.

Response to October 5, 2018 BPU Request for Comments On New Jersey's Solar Market Transition on Behalf of the Morris County Improvement Authority, the Somerset County Improvement Authority, and the Union County Improvement Authority

In accordance with the Notice dated October 5th, 2018, the purpose of this submission is to provide the Board of Public Utilities (BPU) with comments relative to the above matter, particularly questions 1 through 4, which relate to determining the appropriate process and time frame for the termination of the current SREC Program. As local public units in New Jersey who are committed to maintaining stability in property taxes and providing needed services to the residents and businesses in our counties, we have a special and strong interest in assuring a fair and reliable process for closing the SREC Registration Program (SRP), which is the clearing house for SREC applications. The undersigned are county authorities that have made substantial investments to develop solar projects to the benefit of our constituents, and, as such, are relying on the BPU to implement a process that respects our investments. **Specifically, it is critical that BPU enact rules and policies that do NOT injure the financial foundation of our projects by allowing the SREC market available to existing (legacy) projects to be over-supplied with SRECs, thereby reducing SREC prices and harming local units and taxpayers.**

We are also cognizant of the fact that there are some stakeholders to the BPU process who are asking the BPU to take direct action to reduce SREC values for existing solar projects to meet the rate cap provisions of the Clean Energy Act. As public entities, we undertook solar investments to provide lower cost, clean energy to local units and to further the State's energy policy. **It would be highly unfair, unreasonable, and contrary to state law and policy for the BPU to act in a manner that did not provide a stable investment climate; instead the BPU should respect and support the decisions made by county officials.** Accordingly, the BPU should reject any proposal that would reduce SREC prices and devalue our investment to the detriment of New Jersey residents and taxpayers.

The rate caps do not exist in a vacuum and New Jersey's interest in stabilizing property taxes and providing a stable investment climate should be respected by the BPU in its decisions in this matter. Not only would existing projects and local units be harmed by any BPU action to reduce SREC prices for legacy projects, but the development of energy polices and projects in the future will be more challenging (and costly) if investors cannot have confidence in the State and the BPU to provide a stable long-term investment climate. Instead, the BPU should commit itself to stability in the legacy SREC market and work to assure supply-demand balance to protect both investors and ratepayers.

In accord with this position, it is recommended that the BPU adopt the process described in Attachment 1 to these comments to close the SREC application process. This will help to prevent investments by local units from being stranded as the result of BPU action.

We appreciate your attention to this matter of great importance to the local unit signatories below.

Respectfully,

The Morris County Improvement Authority
The Somerset County Improvement Authority
The Union County Improvement Authority

Attachment 1

1. The BPU should add approved projects in the SRP pipeline plus completed applications not yet approved ("pipeline projects") and apply a "scrub rate" (the historic percentage of projects that apply to the program but do not result in operating projects) to derive the level of projected pipeline capacity. A performance ratio (MWH per MW) should be applied to this total to derive an estimated annual production amount.

2. This amount should be added to the current amount of operating capacity multiplied by the performance ratio (MWH per MW) based on the vintage of projects by in-service year (as project performance declines over time and some of the projects are up to fifteen years old).

3. This sum should be divided by retail sales for the four Electric Distribution Companies (EDCs) based on the most recent Energy Year data available.

4. When this calculation equals or exceeds 5.1% the BPU should stop accepting applications and notify stakeholders. Any projects that applied between a) the last day for which the above data was used in the above calculations, and b) the day at which the BPU closed the application window should be placed on a "waiting list" so that they can be allowed in the SREC program only if, upon receipt of actual data, the 5.1% has not been achieved. This will prevent the market from going short and prevent prices from increasing to the solar alternative compliance payment (SACP).

5. The BPU should provide the market with online reporting of progress towards the 5.1% target. No less than weekly the BPU should publish the estimated solar renewable portfolio standard (RPS) percentage based on installed plus pipeline projects and based on scrub rate and performance assumptions. Online tracking can be supplemented with periodic email status updates to the Office of Clean Energy (OCE) solar Listserv.

6. Finally and importantly, the BPU should make clear its intent to keep the SREC market in balance for legacy projects over the remaining SREC life of up to fifteen years for these legacy projects.

SRECTrade
201 California Street, Suite 630, San Francisco, CA 94111
www.srectrade.com | 415.763.7732

October 30, 2018

SENT VIA ELETRONIC SUMBISSION

Secretary Aida Camacho
New Jersey Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314, CN 350,
Trenton, New Jersey 08625

RE: New Jersey's Solar Market Transition

Dear Secretary Camacho,

SRECTrade, Inc. ("SRECTrade") would like to offer its thoughts and recommendations for the implementation of a transition Solar Renewable Energy Credit ("SREC") program to bridge the gap between the current and potential successor SREC programs.

SRECTrade was founded in 2008 on the mission of providing liquidity and transparency to the newly formed SREC markets. In line with this objective, SRECTrade has become a market leader in publicly-available market research and analysis, helping ease the informational disparities that exist in the SREC markets. The Company's mission is to accelerate the adoption of renewable energy by providing services and technology that minimize the time, cost, and risk associated with achieving benefits and compliance in clean energy markets. SRECTrade provides agency management and technology solutions to 1.5 Gigawatts (GW) of renewable energy assets across more than 136,000 projects. The Company's clients cover a variety of market participants including electricity suppliers and energy utilities, clean energy project developers, installation companies, and individual commercial and residential asset owners.

As such, SRECTrade believes it is in a unique position to provide comments to the New Jersey Board of Public Utilities ("BPU") in its development and implementation of a temporary SREC program that maintains market liquidity and mitigates disruption across the solar industry during this transitional period.

Close of Current SREC Program

The most immediate issue that needs to be addressed relates to the interpretation of the "attainment of 5.1 percent of the kilowatt-hours sold in the State by each electric power supplier and each basic generation provider from solar electric power generators connected to the distribution system". As per solar activity reports recently provided by the New Jersey Clean Energy Program ("NJCEP"), 2.6 GW and 538 MW of solar capacity are currently operational and in the pipeline, respectively. The legislative language defining market closure can be interpreted in two fundamental ways.

1. ***Market closure will be reached based upon a calculation derived from the sum of the installed capacity and all pipeline projects with SRPs.*** Under this market closure interpretation, assuming constant build rates and a stable electric load served, the market will close in the next 6-10 months or close to the end of the 2019 Energy Year. A grace

period would be necessary following the attainment of the 5.1% market cap to allow systems in the process of receiving SRPs to be included in the program. If the BPU decides to interpret the language in this manner, there will need to be a transition program in place *before* the close of the current program to mitigate regulatory risk and assure industry investors, developers, and market participants, that investment returns will remain stable. Otherwise, the state risks a massive disruption and irreparable harm of the solar industry, which will include significant job loss and negatively impact the efficacy of any successor program.

2. ***Market closure will be reached based upon a calculation derived solely from the installed capacity that has received Permission to Operate (PTO).*** This interpretation would extend the longevity of the current program, allowing for further deliberation and development of a successor program. However, this market closure calculation method would either leave all SRP-certified systems yet to receive PTO, without an SREC program to participate in, or, would create a harmful glut in the market as pipeline projects at the time of market closure would push the market above the 5.1% cap. If the BPU decides to interpret the language in the latter manner, there will need to be an adjustment in the solar RPS cap to account for the additional pipeline capacity that will come online after the market closes. Otherwise, the market would close in a state of structural oversupply, leading to a positive feedback loop of banked SRECs and substantial declines in SREC prices. Other PJM SREC markets such as Pennsylvania and Maryland have experienced this precipitous price decline.

Tradable vs. Fixed Price

In the BPU's consideration for a successor and transition SREC program, SRECTrade would like to stress the importance of maintaining the SREC as a tradable commodity as opposed to transitioning to a fixed-price structure. Through a tradable commodity model, the New Jersey SREC market has flourished since its inception over 10 years ago, creating 7,000+ jobs and over $10 billion in investment. The fundamental benefits associated with a tradable commodity market are as follows:

- Regulatory flexibility and control
- Predictable uptake in solar growth based on supply and demand levers
- Creates a dynamic and varied eco-system of market participants
- Many entities and individuals can access solar investment opportunities as opposed to only a few, successful firms

As an example of the shortcomings of a fixed-price structure, the impending Illinois Adjustable Block Program ("ABP"), a fixed-price SREC program that has garnered significant interest from solar investors due to its high value and upfront payment schedule, has shown deficiencies before the program has even begun. The legislative process to develop the ABP program has taken a better part of three years, a luxury that the New Jersey market does not have given the market closure time constraints. In attempt to try and create a more attractive form of this fixed-price program, Illinois has utilized an upfront-payment structure. This inherently carries

significant risk due to the misalignment of monetary incentive and SREC delivery requirements. This ultimately makes the attainment of the RPS one-sided, putting lopsided risk on market service providers and RPS compliance entities. An equal amount of risk needs to be distributed to all participants including asset owners and generators.

In an effort to mitigate rate payer exposure while still maintaining a healthy rate of return for solar investors, the BPU should develop a policy structure under one of two umbrellas:

- Shorter eligibility time frame with a higher SACP schedule
- Longer eligibility time frame with a lower SACP schedule

While this decision to the discretion of the BPU, the return on investment in both scenarios should be attractive enough to retain solar growth and an inflow of investment into New Jersey's solar industry. To determine this, SRECTrade strongly recommends conducting financial, data-driven analysis to ensure that any value reduction from the SREC Program does not create a negative or unreasonable Internal Rate of Return (IRR) for the average solar asset owner.

SRECTrade strongly suggests implementing a transition program structured similarly to the existing SREC program, to avoid market disruption and any significant investment of financial or human capital. The existing traded REC market infrastructure is readily available to be emulated and leveraged. Additionally, the mechanics of the current market framework are time tested and trusted. Transition to any other type of market structure could take years of time and ultimately result in unknown outcomes. Transitioning to a continued REC market with reduced valuations allows regulators and participants to understand the framework and outcomes well and can continue to help the Garden State achieve substantial economic and environmental benefits from the proliferation of solar energy.

Respectfully,

Yaniv Lewis

Yaniv Lewis, Client Solutions & Markets Associate
SRECTrade, Inc.
201 California Street Suite 630
San Francisco, CA 94111
628-246-0755
yaniv.lewis@srectrade.com

Steven Eisenberg

Steven Eisenberg, CEO
SRECTrade, Inc.
201 California Street Suite 630
San Francisco, CA 94111
415-702-0863
steven.eisenberg@srectrade.com