Docket Nos. QO19010068 and QO20020184 – In the Matter of a Solar Successor Incentive Program Pursuant to P.L. 2018, C.17

Solar Energy Industries Association
Comments
March 20, 2020

EXECUTIVE SUMMARY

The Solar Energy Industries Association (SEIA) responds to the following questions posed by the New Jersey Board of Public Utilities (BPU or Board) Staff about the design of the successor incentive program. We appreciate the BPU Staff's continued engagement on these questions especially as responses to Corona virus are appropriately dominating policy makers' attention.

There are many important design questions that the Board must consider when making decisions about the successor. While the Board can rely on some of the work conducted to inform the Transitional Renewable Energy Credit (TREC) program, new design questions emerge when considering a long-term program.

In brief, to meet New Jersey's ambitious clean energy goals it's critical for the Board to get these answers right. Poor program design choices can create cascading problems and make policy makers' objectives harder to achieve.

The following presents a high-level summary of SEIA's successor program design preferences.

- New Jersey should establish a solar successor incentive program in line with meeting the goals of the State Energy Master Plan (EMP).
- SEIA recommends the BPU establish a 3 GW interim capacity goal for making progress toward the 12 GW 2030 goal set out in the EMP.
- New Jersey should establish a fixed "always on" incentive program that delivers the incentive value through the current TREC mechanism.
- Significantly sized blocks of capacity should be made available toward reaching the interim 3GW goal, providing the market forward visibility.
- Incentives should be differentiated by project type (currently known as factoring) to ensure projects are not over or under-compensated.
- The incentive value should be fixed for a specified period and could be of varying lengths, mostly likely 15 or 20 years.
- Initial incentive values should be set administratively by the BPU -- not established through an auction or competitive solicitation process.
- Incentive values should be periodically evaluated by the BPU and a third party to establish whether adjustments to levels should be made as the result of changing market conditions.
- Application maturity requirements should be enhanced so that only projects that are far along in the development process are able to reserve capacity in the new program.

- Regulations should be established to consider solar as an ecosystem resource and encourage solar development on agricultural operations.
- Standard conditions and permitting terms should be developed and encouraged for use by state agencies and localities with jurisdiction over siting.

We look forward to working with the BPU to establish the program and would be pleased to meet with Staff to discuss any of the recommendations contained in this paper.

Topic 1: Successor Program Incentive Design

B) Incentive Type / Incentive Delivery Mechanism

At the December 17, 2019 Stakeholder Workshop, Cadmus sought stakeholder feedback on a variety of "policy pathway design choices." These design choices included the incentive type, the payment structure, the price setting mechanism, the price adjusting mechanism, and the compensation structure.

From the stakeholder feedback received on December 17, 2019, Cadmus has focused their analysis on three general incentive program types:

i) Tariff-Based Incentive: eligible projects would receive a total compensation based on the MWh produced, in which the incentive would fill the gap between other value streams and the total compensation.

ii) Market-Based RECs: eligible projects would create RECs, the value of which would be determined via competitive supply and demand, similar to the Legacy SREC program.

iii) Performance-Based Incentive: eligible projects would receive a fixed incentive value based on the MWh produced, with the value of the incentive set to reflect specific environmental attributes.

Questions:

1. Please describe the advantages and disadvantages of the three incentive program types identified above.

There are two basic solar incentive program models - ones that provide fixed incentive values and ones that provide variable incentive values. The descriptions of the three general incentive program types do not necessarily fall in line with existing solar incentive program designs, even if the labels do. Therefore, the descriptions below try to provide additional context around the options listed above, explain program designs in other states, and make preliminary recommendations.

A. Performance-Based Incentive

SEIA assumes that this description reflects the program design of the upcoming TREC program, where the specific environmental attributes are embodied in the applicable Renewable Energy Credit (REC).

The fixed and known incentive value for a given project provides the greatest financial certainty and transparency to solar developers, and as a result, to potential solar customers. The greater transparency translates to lower investment risk and lower costs, allowing solar companies to offer greater savings to their customers. In the example of the TREC program, solar project investors can account for the full 15-year term of the TREC, and then monetize it. That is not the case in program models where the incentive is variable. The program may also be designed to have incentive levels change for new projects based on market dynamics. As long as the process for setting these levels is clear and transparent and the values are known to the market with sufficient notice (ideally 12 months for larger projects and 6 months for smaller projects), then this allows for an appropriate balance between the need for solar companies to make investment decisions in given projects and the need for the BPU to adjust incentive levels to reflect underlying solar costs. To clear up any confusion, the TREC is delivered to a project when the generation attribute (measured by the TREC) is purchased by the Program Administrator.

Recommendation: SEIA strongly recommends New Jersey adopt a fixed performance-based incentive modeled on the current TREC program, delivered via a generation attribute that is purchased by the Program Administrator or through a contract with the utility.

B. Tariff-based Incentive

A tariff-based incentive can take two basic forms: a fixed incentive over a term, which would look essentially like the Performance-Based Incentive described above, or a fixed total compensation for energy *and* incentive.

There is a major difference, because the energy revenue and the incentive revenue are separate and variable over time. This "contract for difference" is not conducive to behind the meter solar projects, and particularly to third-party financed behind the meter projects which is the dominant form of project financing in the solar industry today across residential and commercial market segments.

Solar energy pricing in power purchase agreements (PPAs) are proposed in order to provide the customer with energy bill savings over time, and proposals must assume a reasonable trend in retail electric rates, such as stable or increasing slightly over the life of the PPA. In a "contract for difference" situation, if retail rates rise then the incentive value declines. However, the PPA rate is set based on introductory level and escalator formula. That presents long-term risk for financing because if retail rates rise over the assumed levels at the point of sale, then that represents lost revenue. There are similar complications for the customer if retail rates increase slower than expected, or decline altogether because they cannot access the larger incentive value.

Since the value of the energy compensation fluctuates over time, it is administratively very difficult for the utility to determine the ever-changing incentive level in a contract-for-differences model. When Massachusetts explored the tariff-based option for behind the meter systems, they decided to set the incentive level upfront and have it float on top of the energy value for these projects.

The closest example to this tariff program description is Massachusetts and the Solar Massachusetts Renewable Target (SMART) program. The "contract for difference" model applies to solar projects that are not located behind a customer's meter, with the energy value set at a specific rate. For residential and on-site behind-the-meter commercial projects, the SMART

program locks in the incentive value for the full term. This modified tariff then acts much like a Performance-Based Incentive.

Recommendation: SEIA does not support combining energy and incentives in a single tariff, particularly for behind the meter projects.[1]

C. Market-based RECs

New Jersey has relied on the market-based REC model for over a decade with the SREC program. Market-based RECs created the foundation on which New Jersey's successful solar programs was built. The solar industry and the BPU is very familiar with its strengths and weaknesses. Its biggest strength is its ability for the market to adjust REC pricing based on a multitude of supply/demand forces and solar project economic realities (i.e. changes in costs).

However, this is the least-viable program design of the three listed. Solar developers cannot monetize the full value of RECs, because they must enter into forward contracts to make REC revenue "bankable" and typically accept discounted REC values from financial partners in exchange for the price certainty. Solar developers must also incur higher transactional costs for these contractual negotiations. The variability of REC value over time drives up financial risk and capital costs.

Market-based REC programs are less efficient than those with fixed pricing. A higher percentage of the REC price sold to compliance entities covers administrative and transactional costs instead of directly supporting solar project development. It is not the most efficient program design from the ratepayer perspective, nor from the solar developer perspective.

Recommendation: SEIA does not support establishing a new market-based REC incentive program.

2. How would you expect the incentive value (and the cost to ratepayers) to change based on the incentive program type?

In order to facilitate the development of equal amounts of solar, SEIA believes that market-based RECs would be the most expensive of the three program designs, followed by a tariff-based incentive, and then the performance-based incentive.

As stated above, market-based RECs lead to higher transactional costs and create a more complicated financing structure. Tariff-based incentives that only lock in the total compensation value have less uncertainty than the market-based RECs but by their nature are variable. That variability drives up risk and capital costs.

A fixed performance-based incentive would require the lowest incentive value of the three options in order to deploy an equal amount of solar capacity. The predictability and transparency in that program design translates to lower risk and greater efficiency. The fixed performance-based

[1] If the Board decides to move toward the tariff-based approach, a great deal of additional analysis and work would need to be done to establish the compensation value, or the "value of energy." We recommend the Board establishes the first segment of the successor program before starting new analysis and new work on this topic.

incentive can also be placed on a declining schedule, where after a certain amount of MWs deployed, the incentive value can step down by a reasonable level.

Recommendation: The BPU should establish a performance-based incentive program design for the successor.

3. Should the Board establish a differentiated incentive (i.e. different incentives for different project types), as was done for the Transition Incentive program? If yes, what should these different project types be?

Yes, the Board should establish a differentiated incentive similar to the TREC program. As the solar industry has matured, all market segments have seen dramatic cost reductions but those cost reductions have not been uniform.

Different market segments and installation types (i.e. rooftop versus ground mount) have different cost structures. There are different financing challenges for small commercial rooftop projects, such as low-income multifamily solar, versus residential solar. The latest generation of solar incentive programs in major Northeast solar markets has been to design incentives that tailor their values to best fit the needs of specific project types. This lowers overall program costs and increases the equity of the solar incentive program across all customer types.

The differentiated incentives should also be based on analysis and an assessment of market sector costs. Regulators should not attempt to drive market development of specific sectors by using factor.

Recommendation: The Board should establish a differentiated incentive similar to the TREC program.

4. How should the Board set the value of the incentive: via administrative modeling, a competitive solicitation, or an on-going market? What are the advantages and disadvantages of these three mechanisms?

SEIA does not support the use of auctions to set incentive levels because auctioning tends to create a "race to the bottom" where firms compete individually at the expense of the market as a whole. Auctions may be a way to discover prices for a few, comparable firms, but in an industry as diverse as ours which serves all different classes of customers, in different locations using different business models, auctions are not likely to produce representative results. For example, the economic realities of 5 MW ground mount systems do not translate to the economic realities of residential solar systems.

Furthermore, designing fair auctions and even transparent competitive solicitations is complicated and can result in perverse outcomes if not performed correctly. It is worth noting that Massachusetts used auctioning to help determine initial incentive levels in its SMART program but ended up administratively setting certain incentive levels because of concerns about the auction results and whether the bidding pool was sufficient to reflect the reality of the market.

Also, in auction settings, bids often reflect cost structures that projects anticipate they will face in the future when they are actually under construction – not the current market conditions for projects being developed and constructed today.

Instead, SEIA recommends administratively setting incentive levels with the assistance of a third-party consultant armed with regularly updated market data. Despite some criticism by parties during the development of the TREC program, SEIA argues that the process worked reasonably well.

Regulators thoughtfully considered feedback from affected industry participants and adjusted assumptions and incentive levels in response to critiques. This thoughtful, iterative process yielded reasonable results for most industry segments and will allow many solar projects in the pipeline to move ahead.

Recommendation: SEIA recommends administratively setting incentive levels with the assistance of a third-party consultant armed with regularly updated market data.

5. How should the Board establish and periodically revise the maximum incentive payment caps described in the Clean Energy Act?

While this referenced language of the Clean Energy Act is subject to interpretation, SEIA believes that a successor program design paying a fixed incentive price over a specific duration addresses the requirement of this section. Based on our plain reading of the text, this section appears to address potential structural modifications to the SREC program that establish the upper bound for an incentive in a tradeable market. In this case, the fixed price incentive would not fluctuate and would be paid as a set amount requiring no upper or lower limits.

6. What is the preferred incentive qualification life (10 vs. 15 years) based on typical project financing?

SEIA does not have a preferred incentive term to suggest because different market segments and different companies have different business models that could prefer performance-based incentive terms. SEIA would generally support terms from 15 to 20 years.

Whatever the incentive term is, the incentive value must be calibrated accordingly. If the Board is considering a 15-year term at a certain incentive value, then decides a 20-year term is preferable, that incentive value could be decreased in order to account for the longer period.

7. The Clean Energy Act requires that the Board "encourage and facilitate market-based cost recovery through long-term contracts and energy market sales." Please provide your assessment of various market-based cost recovery mechanisms, and their applicability to each of the three incentive program types developed by Cadmus.

SEIA requests that Board staff clarify this question and provide more detail regarding what the cost recovery mechanisms are, what costs are being recovered and by whom, and how/if markets are involved.

Topic 2: MW targets / Program Capacity

As stated above, the Clean Energy Act of 2018 requires, including other things, that the Board:

> - develop megawatt targets for grid connected and distribution systems, including residential and small commercial rooftop systems, community solar systems, and large scale behind the meter systems, as a share of the overall solar energy requirement, which targets the board may modify periodically based on the cost, feasibility, or social impacts of different types of projects;
>
> - establish and update market-based maximum incentive payment caps periodically for each of the above categories of solar electric power generation facilities

Questions:

8. What MW target project categories should be established?

Two sets of questions are presented here: 1) questions on the overall size of the solar incentive program itself, or in other words the capacity of the program needed to reach the state's clean energy goals, and 2) questions regarding the targets of the different market segments within the overall program.

1) Overall Program Size – Set Interim Milestones As Steps Toward Reaching the Master Plan Goal & Create an "Always On" Program

The Integrated Energy Plan ("IMP") modelling conducted to support the Energy Master Plan ("EMP") suggests "that New Jersey should install 5.2 GW of solar by 2025, 12.2 GW by 2030, and 17.2 GW by 2035."[2] If presented on an annual basis, the EMP also shows New Jersey needing to install more than 950 MW per year, or a threefold increase over installation rates during the previous five years.[3] Backed up by the IMP modeling, SEIA once again recommends establishing the next incentive program in 3 GW segments, with the goal of obtaining 6 GW of solar capacity by the year 2025.

SEIA recommends the Board establishes a target for the solar program that is not defined as percentage of retail sales for the successor program. Instead, simply setting a MW target takes complexity and uncertainty out of the process because regulators and solar firms will know what target they are trying to hit. With load forecasts continuing to fall, setting a straight MW target is also a more stable mechanism and eliminates calculations where one of the values is unknown.

[2] New Jersey Energy Master Plan, January 2020. At 124.

[3] In previously filed comments SEIA recommended setting a goal of installing 10GW of solar by 2030 and establishing interim targets to reach that goal. Based on the analytic work conducted in the IMP we have realigned our estimate with the figures presented in the plan.

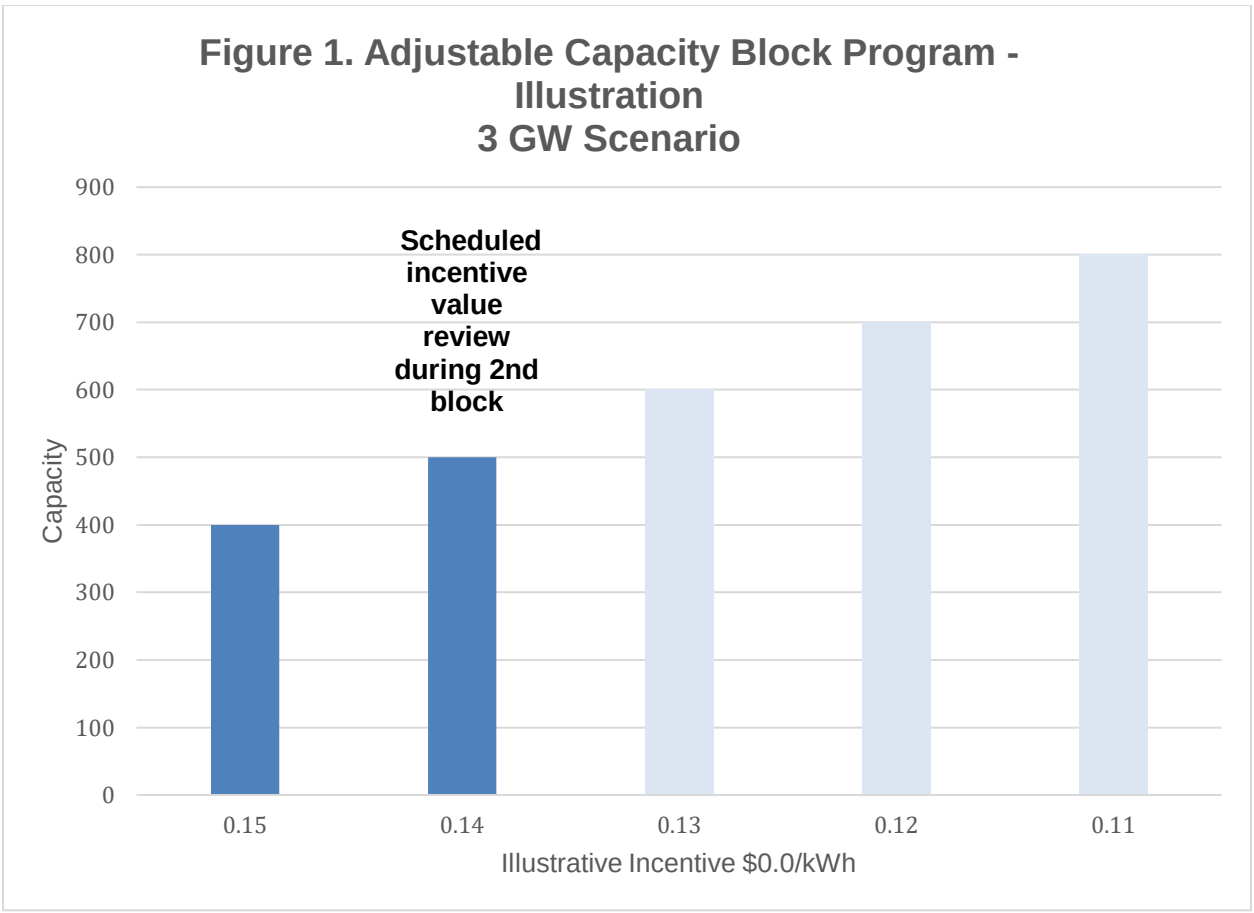
In addition, segments of 3 GW would provide the solar industry insight into future incentive levels and allow development of a range of different projects for customers. Furthermore, the program should be designed with a built-in period of programmatic review – potentially after reaching a predetermined threshold of reserved capacity -- to make incentive rate adjustments before beginning the next segment.

To be clear, the program should be capacity driven, not by driven by timing. In other words, capacity should be made available at certain incentive rates, with built-in step-downs in incentive amounts. Enough capacity should be added to the program to give the solar market visibility into future rates to allow long-term project development. This “always on” model – a program not limited by annual targets or capacity caps – would give the industry the best pathway for developing new projects.

SEIA also recommends aligning the start of the long-term solar successor program with the start of the permanent community solar program. Although the current community solar program contemplates a three-year pilot phase, the start of the successor program is the ideal time to end the pilot phases and include community solar into the planning for a permanent program.

A simple illustration of our preferred program design is provided as Figure 1.

Recommendation: SEIA recommends establishing the next incentive program in 3 GW segments.



2) Targets for Market Sector Development

Similar to solar incentive programs in other states,[4] SEIA recommends creating a large open pool of incentives for access by all sectors - residential, commercial and industrial projects, community solar, and brownfield and landfill projects -- with a minimum threshold for smaller projects with shorter development cycles, such as residential and small commercial projects.

A generally similar structure has been established in both New York and Massachusetts solar incentive programs. Limited differentiation of market sector targets can prevent administrative headaches and problems related to potential stranding program capacity for a market sector that can only be addressed by further regulatory actions.

On this topic, other states provide valuable lessons on the problems of establishing rigid set-asides. New York's incentive program, for example, separates incentives by region and by project type, with New York metropolitan region incentives set at different levels than upstate. While the regional variation is sound based on the significant difference in upstate and downstate project development costs, downstate solar incentives have not been able to overcome other significant market barriers based on New York City's difficult development environment.

[4] New York and Massachusetts.

As a result, program capacity in the downstate region remains underutilized, while capacity in the rest of state barely keep pace with demand. Although New York regulators are expanding their program to help meet upstate demand, dealing with stranded capacity or oversubscribed capacity for various market segments can create difficult management challenges.

Instead, New Jersey should adopt a mechanism similar to the Massachusetts SMART program. SMART establishes a minimum and maximum threshold of at least 20% and at most 35% of the capacity for residential solar projects and leaves the remaining incentives in a large pool for access by all market segments.[5] Similarly, New York established separate blocks for its incentive program targeting residential customers but we recommend the minimum/maximum threshold approach.

Recommendation: SEIA recommends creating a large open pool of incentives for access by all sectors, with a minimum threshold for smaller projects with shorter development cycles, such as residential and small commercial projects.

9. How should the Board set the capacity for each MW target, in compliance with the incentive cap and cost cap requirements? Please consider: 1) how the Board should set the overall capacity to be made available on an annual basis for the Solar Successor Program; and 2) the relative breakdown of the total annual capacity between MW target project categories.

For reference, the breakdown of installed capacity by solar installation type as of January 2020 is as follows:

Residential	30%
Non-Residential < = 100 kW	4%
Non-Residential > 100 to < 1000 kW	24%
Non-Residential > = 1000 kW	21%
Grid Supply	21%

ource: https://www.njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports

10. Should the historical breakdown of actual MW installations serve as the basis for future targets?

[5] Note that the 20% minimum/35% maximum set aside for the residential sector is appropriate under the proposed program size and structure (always on, not an annual capacity cap). The amount of MWs deployed in the residential sector cannot ramp up or down (without significant economic disruption and job loss) quickly in response to changing policy like the larger project segments can.

The historical breakdown of New Jersey solar projects listed in the report should be used only to roughly inform only the minimum/maximum threshold for smaller projects, as described in SEIA's answer to Question 8. SEIA recommends establishing a minimum threshold of 20% of program capacity to be set aside for residential projects with a maximum of 35% percent.

Once again, SEIA recommends creating only one "set aside" because this will be significantly easier to administer than having several different set-asides and market segment caps to consider.

11. How should the Board administer these MW targets? Should projects be allowed to participate on a first-come, first-served basis?

Generally, provided that the applicant meets pre-established eligibility requirements, the Board should accept applications for incentives on a first-come, first-served basis to reserve capacity in the incentive program.

The Massachusetts Department of Energy Resources has published guidance on its reservation program and we recommend the NJ BPU adopts similar practices.[6]

Specifically, the Board should establish clear rules or guidance on:

1. Specifying how long the reservation period lasts before projects must reach permission to operate.
2. Creating a process that allows developers to fix problems in their reservation application before applications are rejected.
3. Allowing for extensions of the reservation period for certain circumstances, such as extended utility delays related to receiving final approval to interconnect, legal challenges that arise for a local permit, or delays related to supply chain problems as the result of the Corona virus.
4. Providing for other extensions for reservation periods based on appeals to the BPU based on good cause.

Recommendation: The Board should establish eligibility requirements, accepts projects on a first-come, first-served basis and issue capacity reservation program guidelines.

12. What measure should the Board implement to prevent "queue sitting"? Please include in your response a discussion of a) maturity requirements, b) filing fees, and c) alternative suggestions.

One way to prevent queue sitting - or projects simply reserving capacity at an incentive rate at the expense of other projects - would be to establish strong project maturity requirements for reserving capacity in the program.

[6] https://www.mass.gov/doc/statement-of-qualification-reservation-period-guideline-november-2019/download

In addition, all projects should be required to submit a modest filing fee based on $/kW to be set by the Board to help defray the cost of program administration, but also to ensure there is a pool of real projects ready to move toward completion.[7]

For example for projects larger than 25kW in size, the BPU should require projects to have:

- An executed interconnection service agreement with a deposit made as part of the contract terms;
- Confirmation from the town that the appropriate permit applications have been submitted or received; and
- A modest fee to be paid to the program administrator.

For projects less than 25kW in size, applicants should have:

- A contract between the primary installer and the customer of record; and
- A modest fee paid to the program administrator.

Additionally, the BPU should maintain milestone and project completion requirements as it has in the SRP program.

Recommendation: Establish project maturity requirements, a modest application fee to ensure a pool of viable projects, and appropriate milestone and project completion timeline requirements.

13. Should excess annual capacity be reallocated if not used (e.g. if a project drops out of the pipeline)?

SEIA recommends against annual capacity requirements. Rather the BPU should maintain an 'always on' program where blocks open automatically once the previous one closes.

With regards to reallocation of capacity, SEIA again recommends the Massachusetts approach. In the event that a project does not come to fruition within the specified timeframe and their reservation is revoked, then the previously reserved capacity should be assigned to the *currently open* capacity block.

Making the capacity available at the previous available rates would be difficult to administer. For example, given the availability of new capacity regulators could change the applicant's capacity allocations given the changed circumstances. SEIA does not recommend this approach. Firms would have projected customer savings based on their awarded reservation.

Changes in the reservation status would not only create problems in communicating with customers, but also ensuring enough capacity was available to support projects. A firm

[7] Massachusetts set its fee at $25/kW however many small installers argued was far too high for their projects.

relinquishing a 500kW capacity allocation would not be enough to support a 1 MW commercial project which would be next in line.

Recommendation: Given all these challenges, relinquished capacity should be made added to the next available block.

14. Should projects located in municipal utilities that do not pay into the RPS be eligible to receive Successor Program incentives?

If the RPS collection mechanism is the principal source of funding for the incentive, SEIA does not support communities not paying into the RPS receiving incentive funds. However, if a separate collection mechanism is used and applied to all customers, including municipal customers, then SEIA would support incentives flowing to those communities. As a general rule, utilities not participating in state-wide programs should not receive the benefits of those programs.

15. How can the State most efficiently progress towards the goals set in the Energy Master Plan, while balancing ratepayer costs for solar development in- and out-of-state?

Given the size of the state's goal, SEIA strongly recommends the BPU create incentives to support a large in-state solar industry but also revisit its decision to prohibit out-of-state solar from eligibility from Class I RECs. The prohibition on out-of-state solar located in PJM from the New Jersey Class I market made sense in the early days of the nascent distributed solar market policy makers were trying to create. But given the size of the state goals, the BPU should authorize eligibility for some out-of-state-solar.

The participation of these low-cost resources would help lessen the overall cost impact on New Jersey ratepayers and provide more diversity to the energy system. Furthermore, as part of the modelling conducted for the integrated energy plan, out-of-state solar was an important part of the low-cost pathway to keep New Jersey on track for meeting its clean energy objectives.

Recommendation: Authorize out-of-state solar for New Jersey Class I RECs.

Topic 3: Grid Supply
Solar

In the Legacy SREC program, grid supply project could be eligible for SRECs if they met the requirements defined at N.J.A.C. 14:8-2.4. These projects are known as subsection (t) and subsection (r) projects.

Questions:

16. Should the Board maintain the current subsection (t) and subsection (r) processes for determining incentive eligibility for grid supply projects?
    - If yes, what conditions should be maintained?
    - If no, how should the Board treat grid supply projects?

The current subsection "r" processes for determining incentive eligibility should not be maintained for grid supply projects. As part of the Murphy Administration's Energy Master Plan goal of 17 GW solar deployed by 2035, all forms of solar development should be encouraged to help decarbonize New Jersey's electricity sector.

Below lays out SEIA's recommendation for ground-mount grid supply projects. Grid supply projects in the built environment (rooftop, carport, etc…) are addressed in Question 19.

SEIA recommends that the Board provide more transparency and opportunity for ground mounted grid supply projects that currently follow subsection (r) requirements. Instead of no ground mounted grid supply projects being eligible for the Successor Program unless approved by the Board, the Board could establish an annual schedule of solar capacity that is automatically eligible for the successor program's incentive.

For example, 50 MW of ground mounted grid supply projects could be automatically eligible for incentives in the first year, and projects that qualify would be accepted on a first-come, first-serve basis. We would recommend that the Board maintains its flexibility to approve additional ground mount grid supply projects beyond 50 MW at its discretion. In addition, SEIA recommends the Board publish a forward schedule covering at least three program years on a rolling basis, and create a waitlist to exist that spans beyond a single program year. To be clear, SEIA recommends this solar capacity schedule described above would be separate from the residential, commercial, built environment and subsection (t) grid supply and community solar program capacities included in the main program.

SEIA recommends that subsection (t) projects continue to receive automatic eligibility into the successor solar program. Additionally, SEIA recommends that program rules adapt to the added difficulties and remediation steps for subsection (t) projects in order for projects to secure an incentive reservation earlier in their development process.

Recommendation: The Board should establish a separate mechanism for determining subsection r incentives on a going forward basis with visibility into available capacity for the future.

17. Should the Board set a dedicated incentive value for grid supply projects? If yes, how can the Board best determine the appropriate incentive value (i.e. incentive gap modeling vs. bid process)?

SEIA recommends that a factor be applied to grid supply projects that accounts for project costs and revenue based on the wholesale power market. The TREC sets the ground mounted subsection "r" factor at 0.6 from the base TREC value of $152/MWH over 15 years. SEIA recommends that the Board staff fully review solar project cost data for ground mount grid supply projects, and all solar market segments, including the analysis done by the third-party consultants during the TREC stakeholder process.

18. Should the Board establish a maximum system size to be eligible for a Successor

Incentive? If not, how should economies of scale and the lower incentive gap be accounted for solar electric generation facilities over 20 MW?

SEIA recommends that the Board establish a maximum system size of 5 MW (alternating current) for the successor program. If the Board wishes to incentivize the development of solar projects larger than 5 MW, that it be done through a separate program.

19. What is the best means to motivate investment in rooftop grid supply solar facilities where insufficient electricity loads preclude net metering and the wholesale value of electricity generated increases the incentive gap relative to rooftop net metered projects?

The needs of rooftop grid supply projects are distinct from ground mount grid supply projects. While the TREC program is a good first step at developing the rooftop grid supply market, two major impediments to this market exist – access to the TREC program and the need to apply for interconnection through PJM rather than the EDCs.

To facilitate this market, SEIA recommends that the BPU establish a develop a subsection (r) process whereby rooftop systems are automatically eligible for the successor program, just as subsection (t) projects are. Secondly, SEIA recommends that the BPU explore ways to enable these projects to use the EDC interconnection process rather than the PJM interconnection process.

SEIA also believes that parking canopy projects should be included in this question since canopies can cover the built environment, such as open surface parking lots, that are not connected to large electric load. In order to qualify for the higher factor, which would need to be higher than the factor for net metered rooftop and canopy projects, there would need to be certain criteria that are agnostic to building type. There would need to be a minimum customer electric load to solar system generation load ratio. The project would have to be sited on a rooftop, surface parking lot, or parking garage with on-site load. If a project switched to being a net metered project, the system would need to decrease in size, and no longer be eligible for the higher factor.

Recommendation: To facilitate this market, SEIA recommends that the BPU establish a develop a subsection (r) process whereby rooftop systems are automatically eligible for the successor program, just as subsection (t) projects are today.

Topic 4: Solar Siting

SEIA believes that "land use" and the siting of solar facilities is among the most important issues facing the industry today and appreciates Staff's efforts to address some aspects of land use in Questions 20-22. We believe that there is benefit in taking a more holistic view of the impacts and benefits of solar installations on the land that hosts them, and suggest that the BPU should closely consider both Ecosystem Services in the context of protecting New Jersey's valuable natural capital and the diversity of dual-use agricultural solar installation types.

Solar arrays on agricultural land can provide a variety of Ecosystem Services that benefit not only the hosting farm but also the surrounding community. Natural capital and Ecosystem Services are concepts that have grown in prevalence over the last several decades, having gained popularity since the publication of the UN's Millennium Ecosystem Assessment of 2005 and its various working groups and follow-up studies. Ecosystem Services are defined as "the many and varied benefits to humans gifted by the environment", and fall under several categories including Provisioning Services which include things like Clean Water and Pollination, Regulating Services such as Carbon Storage, Clean Air and Flood Control and Supporting Services such as Biodiversity, Habitat and Soil Formation. In order to adequately compensate solar projects for all of the benefits that they provide, Ecosystem Services need to be assessed and properly accounted for.

Dual-Use Ag can take many forms, but each installation type falls under one of three categories, as outlined in the National Renewable Energy Laboratory's 2013 technical report, *Overview of Opportunities for Co-Location of Solar Energy Technologies and Vegetation*: 1) Vegetation-Centric Co-Location, which is characterized by actions that serve to maximize biomass production and minimize changes to existing vegetation management activities; 2) Energy-Centric Co-Location, which is characterized by actions that serve to maximize solar energy output while also promoting vegetation growth under and around the solar installation; or 3) Integrated Vegetation-Energy-Centric Co-Location which seeks to integrate both energy output and vegetation production goals[8].

Recommendation: SEIA believes that the Board should recognize all three of these types of dual-use agricultural installations and should consider developing project criteria for use in future discussions about compensation.

The 2019 Energy Master Plan states that, "in order to enhance smart siting of solar, the state should better define areas that are considered marginalized, such that they have constrained economic or social value." This includes a commitment that "NJDEP and NJBPU will coordinate land use policy for solar siting with the New Jersey Department of Agriculture to identify sites that could be used to expand New Jersey's commitment to renewable energy while still protecting the state's farmland and open spaces." (EMP Goal 2.1.8)

Questions:

> 20. How should the Successor Program incentive structure be designed to address the state policy preference for solar located on rooftops, landfills and brownfields versus open space and farmland?

Providing increased compensation though factors to certain projects should be enough incentive to steer development toward rooftop, landfill and other preferred sites. Modelled on other states, the TREC program already employs factors for different projects. This approach should be

[8] NREL: Overview of Opportunities for Co-Location of Solar Energy Technologies and Vegetation, pp. 5-8

replicated in the successor program although the factors themselves should be supported by further analysis and stakeholder discussion.

21. What land use restrictions and limitations should apply to the Successor program incentive to reflect the siting of solar projects in New Jersey? Please include a specific discussion of solar on farmland and open space, consistent with all applicable New Jersey statutes and regulations.

An important but far too-often overlooked distinction that must be made when discussing land use in the solar industry is the impermanent nature of solar installations. Oftentimes, stakeholders will conflate all non-agricultural uses of farmland or open spaces failing to make this distinction and to appreciate the fact that land which hosts a solar array can retain its fundamental character and after 2-3 decades of producing clean, carbon-free energy can be returned to future agricultural use. There is no such possibility when it comes to farmland or open spaces which have been converted to other forms of development

SEIA believes that it is critical that we recognize that in agricultural areas, the choice is not between farms and solar arrays – the choice is between solar arrays and subdivisions, or strip malls. It is a choice between permanently transforming the land to a non-agricultural use, or choosing to contract with a Solar company which will drill holes in less than 1% of the footprint of their arrays to drive temporary posts on which the panels will sit for several decades while preserving the land underneath for future agricultural use.

To encourage the growth of community solar in New Jersey, SEIA supports authorizing farm operations to co-locate solar on their property while still maintaining agricultural production. SEIA recently issued a short report on the ways in which community solar is helping to save farms across the country.[9] Given the fluctuation in prices for many farm products, farms across the country have been using portions of their land to host community solar operations. Lease revenues to the farms can help provide stability to a farm operation and help keep farms under family control. Authorizing farms to install community solar can also play a role in preserving farmland.

Finally, SEIA points out that in many ways, solar *can help reach* conservation objectives. In fact, as the 2019 report entitled the *Natural Capital Value of Solar* states: "short of setting-aside land for conservation, land use change for solar parks arguably offers more potential than any other land use change to deliver much needed Natural Capital and Ecosystem Service benefits."[10]

22. Aside from the various types of net metered projects and grandfathering a defined set of projects on farmland, the Solar Act of 2012 limited eligibility for SRECs to solar electric generation facilities which demonstrated no adverse impact on open space or those located on properly closed sanitary landfills and brownfields as defined in the Spill

[9] https://www.seia.org/research-resources/how-community-solar-supports-american-farmers
[10] Natural Capital Value of Solar, p. 11

Compensation and Control Act. Should the criteria for Successor Program incentives retain these limitations as contained in the statute or be refined to broaden eligibility beyond the footprint of a landfill cap or limits of the brownfield site?

Further to the answer above, SEIA recommends the BPU should undertake an holistic review of the impacts of solar development on New Jersey's open spaces and agricultural land and that both Dual Use solar and agricultural operations and solar arrays which can provide Ecosystems Services to land (e.g., soil formation on non-preserved farmland), should be eligible for successor incentives.

Recommendation: Working with the New Jersey Department of Agriculture, the BPU should develop a set of standard terms and conditions that would authorize the various types of dual-use solar development on agricultural land. This authorization could be on a trial basis first with a wider rollout considered on a longer-term basis informed by experience with projects.

Thank you for your consideration of these recommendations.
For additional information, please contact:

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