New Jersey Solar Transition Draft Capstone Report

Comments of the Solar Energy Industries Association

I. Introduction & Overview Comments

The Solar Energy Industries Association ("SEIA") is pleased to submit the following comments on New Jersey Solar Transition Draft Capstone Report ("Capstone Report") prepared for the New Jersey Board of Public Utilities ("BPU" or "Board") on the solar successor incentive program ("Successor").

In brief, the Capstone Report is an excellent first step toward designing an incentive program that will help New Jersey reach its aggressive clean energy goals. The Capstone Report's recommendations regarding overall program design are generally on target. SEIA looks forward to working with the BPU to finalize this program and to continue to help encourage the growth of solar in the Garden State.

A. The Capstone Report's Successor Program Design Recommendations Are Sound

SEIA supports the Capstone Report's recommendations to:

- Establish an "always on" incentive program that uses a fixed incentive at first and then investigate more complex designs such as a total compensation model over time.
- Develop a fixed incentive for some projects, with values set administratively and develop incentives for other projects with values set by competitive solicitations.
- Establish an incentive program appropriately sized to meet the goals of the 2018 Clean Energy Act and State Energy Master Plan ("EMP") with differentiated incentives to reflect the needs of different industry market segments.
- Design a storage adder for paired storage and solar projects taking into consideration the independent development of incentives for stand-alone storage already underway at the BPU.
- Develop independent solar project cost modeling, with regular input from solar firms, for use by the BPU in ongoing discussions. Relatedly, this modeling should be used to inform yearly "quick look" assessments of the program and a full-scale triennial program review to reset incentives, if necessary, based on changing market conditions.

B. About SEIA

SEIA is leading the transformation to a clean energy economy, creating the framework for solar to achieve 20% of U.S. electricity generation by 2030. SEIA works with its 1,000 member companies and other strategic partners to fight for policies that create jobs in every community and shape fair market rules that promote competition and the growth of reliable, low-cost solar power. Founded in 1974, SEIA is a national trade association building a comprehensive vision for the Solar+ Decade through research, education, and advocacy. SEIA has more than 45 member companies located in New Jersey with many more national firms also conducting business in the state. Member companies range from panel manufacturers; residential;

community solar, and utility-scale solar developers; installers; construction firms; investment firms; and everything in between.

SEIA appreciates the opportunity to comment. These comments are organized with an opening narrative section explaining our positions followed by specific answers to the questions posed by the BPU. These answers are designated using blue text. Unless otherwise specified, failure to comment on any specific question should be interpreted to mean that SEIA does not take a position on the matter at this time.

II. Incentive Structure Design – Topic 1

A. Establish a Fixed Incentive Structure During the Early Years of the Successor

SEIA strongly supports the Capstone Report's recommendation to develop a fixed incentive for the program's initial years. Given its similarity to the Transition Incentive ("TI" or "TREC") establishing a fixed incentive that sits on top of energy compensation is the least complicated way to replace the TI program.

The TI program and the corresponding fixed incentive program is now well-understood by the solar market and also has the support of firms that finance solar projects. Eventually, regulators should consider moving toward a total compensation method or implementing compensation that pays a solar project for the actual value it brings to the grid and to society more broadly, but in the early stages of the successor a fixed incentive program is preferred and would allow regulators to implement a program under the implementation timeline the BPU has established.

B. Set Incentives for Smaller Projects Administratively & Set Incentives for Larger Projects Using Competitive Solicitations

SEIA supports the recommendation to develop administratively set fixed incentives for smaller, distributed projects and incentives based on competitive solicitations for larger, stand-alone projects feeding into the wholesale grid (a.k.a. the two-tiered system). This two-tiered approach is consistent with New York's incentive programs for distributed projects and large-scale renewables and is familiar to the industry throughout the region. Based on economies of scale, larger projects are better able to bid competitively for support and smaller projects are not. Furthermore, given the wide variety of project configurations to serve a very diverse set of solar customers, it is very difficult to design competitive solicitations for distributed projects that produce results on an apples-to-apples basis. Even within the non-residential project classes, project economics varies considerably by the size of the project, whether it is located on a rooftop or not, or based on customer needs. Utility scale projects on the other hand simply feed into the wholesale grid itself and share similar characteristics.

SEIA recommends that non-net metered, grid connected projects should be subject to competitive solicitations. All remaining net metered and community solar projects should be subject to administratively set incentives. While many states have used a 5 megawatts ("MW")$_{ac}$ dividing line to mark the distinction between small and large scale or utility scale projects, New Jersey is somewhat unique in that there is no arbitrary upper limit for the size of net metered systems. Solar systems serving customers can be sized to load. Therefore, whether or not the system is net metered should be the dividing line between projects subject to competitive solicitations.

SEIA also recommends that as regulators develop the straw proposal that both distributed and large-scale projects should be subject to improved project maturity requirements to ensure that only advanced-staged projects would be eligible for solar incentives.

C. Out of State Solar Should Be Eligible for Class I RECS

SEIA strongly supports the recommendation to allow out-of-state solar delivering into the NJ market the opportunity to sell Class I Renewable Energy Credits ("RECs"). For far too long, the out-of-state wind developers have provided clean energy to New Jersey while out-of-state solar firms have been prohibited from doing so.

This prohibition may have made sense in the early days of New Jersey's solar program but has outlived its usefulness. With a mature in-state industry sector now established, and given the state's aggressive clean energy goals, the EMP modeling showed that out-of-state solar would be an important part of the low-cost pathway to reaching the targets set by the 2018 Clean Energy Act. To reach their compliance obligations, the state's electric distribution companies ("EDCs") should be able to purchase RECs from out of state solar resources.

However, SEIA members are not seeking an additional incentive for out-of-state solar at this time as the Capstone Report proposed. As we have stated before, no further incentive support would be needed beyond authorizing the ability to sell Class I RECs. By way of balance, the BPU should set a target for the amount of out-of-state RECs that can be sold to satisfy Class I obligations, as well as how much should come from in-state resources.

D. Competitive Solicitations for In-State Large Scale Projects

Similar to New York, SEIA recommends that New Jersey holds at least annual solicitations for large-scale projects for an established number of MW per year from in-state solar projects. As part of the large-scale solar program, a rolling five-year schedule of MW procurements should be published. Under pending legislation (S.2605) supported by SEIA, companies would bid for bundled RECs, energy and capacity, ensuring savings for ratepayers. Upon selection, the firm would receive the "as bid" price. Furthermore, we recommend the BPU should evaluate bids against pre-established criteria, with price being the major driver for project selection, but also taking into consideration the in-state economic development impacts of the project, the bidding firm's experience in building similar projects, and whether the project has reached major development milestones. As part of its large-scale Renewable Energy Standard program, NYSERDA's selection criteria for projects are a good starting point.

E. Incentive Levels Should Be Differentiated by Project Types & Eventually By Utility Territory

As we have stated in several different rounds of comments to the BPU, SEIA strongly supports establishing differentiated incentives for different project types and moving away from the "one size fits all" approach of the SREC program.[1] This approach ensures that different projects receive the amount of project support they need and does not result in excessive costs to ratepayers. New York and Massachusetts have used this approach effectively to promote market growth across all segments of the solar industry.

1) Simplify the Categories & Establish "Base Rates" & Adders

[1] See Comments of the Solar Energy Industries Association, March 20, 2020. Docket Nos. Docket Nos. QO19010068 and QO20020184 – In the Matter of a Solar Successor Incentive Program Pursuant to P.L. 2018, C.17.

That said, the Capstone Report identifies discrete minimum incentive levels for nearly 20 types of project designs. This level of differentiation may swing too far in the other direction. We encourage the BPU to look to Massachusetts as an example for simplification.

Regulators at the Massachusetts Department of Energy Resources established a base rate incentive for all distributed projects, multipliers based on system sizes, and incentive adders for project configurations that meet public policy objectives. This program was a first-of-its-kind solar incentive program, and New Jersey could improve upon it by applying the principles of the MA program while simplifying program administration and design.

- First, establish separate base REC values for each of the four major categories currently contained in the New Jersey Clean Energy reports (residential, non-residential, community solar[2], and grid supply).
- For non-residential and community solar projects, establish size multipliers for different capacity ranges (i.e. the Clean Energy Program monthly installation reports): under 100 kW, 100 – 1000 kW, and over 1000 kW. For example, non-residential projects under 100 kW could receive a 150% multiplier on the base REC value.
- For all participating solar projects, establish adders (in $/MW) to the base REC value for different types of solar projects, based on location, off-taker, or some other criteria. See Table 1 for potential adder categories.

Table 1. Possible Categories for Adders

Other	Location	Offtaker
Tracker (dual/single axis)	Brownfield/Landfill	Public[3]
Pollinator-friendly	Floating solar	Low to moderate income
	Canopy/Carport	
	Agricultural	

SEIA supports the BPU creating a storage incentive for solar projects that include energy storage. At this time, we do not take a position whether this incentive should rest within the successor solar program or be a complimentary but separate program. We do note that if the energy storage incentive is a separate program, its costs would not count towards total RPS compliance costs.

SEIA does not support differentiation between direct-owned and third party owned solar systems. While the economics for direct-owned and third-party owned systems may be somewhat different, many solar firms offer both options and creating different incentives for the two types of programs adds needless complexity to the program. This may be an area to revisit in later program reviews and regulators could return to this as the program evolves.

[2] SEIA also reiterates its request from comments submitted to BPU on August 10, 2020 to clarify that projects awarded under year two community solar pilot would be eligible for TRECs, not the to-be-determined successor program under consideration in this paper.

[3] Public sector projects can be considerably more expensive based on public procurement processes. An adder, similar to the MA program, can help offset these costs and provide clean energy benefits to municipal customers.

2) Begin with Statewide Incentive Rates

At least initially, and to help finalize a program quickly, SEIA recommends using an averaged statewide base incentive rate for each the categories described above. This will support simple program administration and make it easier for solar companies to engage it. Later stages of the successor program, or a later solar program, could be better suited with incentive rates tailored to each utility territory. Tailored incentives based on each service territory would more accurately reflect the economics in each region.

III. Incentive Values/Modelling – Topic 2

A. Modeling to Support Minimum Project Economics & Modeling To Support Reaching the State's Goals

As an overarching comment, SEIA appreciates the consultant's bottom up modeling approach that informs the Capstone Report recommendations as well the use of an open source tool to reproduce the SAM cases. However, regulators must take into consideration achieving the overall state's clean energy objectives when designing a program. With this in mind, solar incentives should not be designed to ensure that 50% of the proposed projects move forward as proposed in the report. Instead incentives should be designed to reach the program goals and build markets.

B. Specific Modelling Input Critiques

SEIA provides the following critiques of the SAM model inputs that were used to provide the various representative cases:

1. System Design

a. The Capstone Report assumes capacity factors ranging from 14.2% to 16.5% depending the SAM case. Verified data – from monitored residential systems in NJ – shows that systems generate 1150 kWh/kW/yr or a 13.1% capacity factor. Overall, with the exception of the ground mount installations, the capacity factors listed in Table 15 appear to be one percent higher than industry estimates for each remaining project type.[4]

2. System Costs

a. In the residential case, member firms report inverter and module costs are $0.05 - $0.10/W higher than the levels included in the modeling for these components.

b. With regard to commercial cases, member firms report multiple differences with the modeling input.

1. Interconnection costs will be increasing over time, and the SAM model should be prospective and in line with the interconnection cost increases seen in other states.

2. Insurance costs are now higher due to COVID, and the SAM model should include an updated survey.

[4] See draft Capstone Report, Table 15, p 37.

3. For solar carports, balance of system costs are reported by member companies to have increased, due in part to higher current steel costs.

c. With regard to community solar projects, member firms believe that the modeling should account for a higher risk profile due to the need to obtain and replace subscribers over time.

3. Financial Parameters

a. Generally, the solar industry calculates project internal rate of return ("IRR") on an unlevered basis. The updated IRR modeling should reflect and unlevered rate of return of between 7.5% and 8% instead of the 9.7% levered IRR proposed in the report.

b. Using 15% discount estimate for customers to derive the PPA rate is not in line with the current market.[5] Residential discounts should be modeled between 20% to 25% and commercial and industrial ("C&I") discounts should be modeled at 25%.

c. Furthermore, based on the Capstone Report, it was unclear whether and how prevailing wage requirements for projects greater than 1 MW in size were handled in the SAM cases.

4. Incentives

a. The consultants assume a considerable amount of "safe-harboring" of the federal investment tax credit ("ITC") at the 26% level. Although the debate over delaying the ITC step-down is still underway in Congress, that outcome is uncertain and SEIA recommends the ITC input assumption should be set at 22% and aggressive safe harboring should not be assumed.

C. Modeling Output Critique

1) Approximate Target Level Incentives

The following is based on limited SEIA member responses:

i) target minimum incentive values for residential projects appears to be low and should be approximately $95/MWh - $105/MWh.

ii) target minimum incentive levels for carports also appears to be low based on higher steel costs, and certain other costs related to environmental compliance not included in the modeling.

ii) as a general comment, the minimum levels proposed for community solar projects for all three project types appears to be very low, especially the base case for ground mount projects and when considering the analysis that informed the TREC program.

2) Modelling Incentive Levels & Expected Deployment

SEIA also believes that the modeling output should be prospective as well as retrospective. If the Energy Master Plan and its 17 GW of solar goal by 2035 will be the main policy influence in creating a new solar incentive program, the modeling output should include

[5] See draft Capstone Report, p 45.

industry-wide inputs as well as project-level variables. For instance, incentive levels directly influence the percentage discount solar developers offer residential and C&I customers. Greater savings results in higher solar adoption (which aligns with how purchasing decisions occur generally).

We recommend that the Capstone Report model scenarios where the incentive levels are set in order to increase solar installation rates by differing magnitudes. To meet the EMP goal, solar adoption will need to increase to roughly 1 GW per year, more than double the most aggressive solar adoption year on record (2019).

IV. Other Issues

A. Annual Capacity Targets & Program Design

SEIA appreciates that the Capstone Report references the EMP overall 2025, 2030 and 2035 solar program targets which equates to considerably more solar from all market segments coming online to reach the state's clean energy goals.[6]

Other than several statements about the need for steady solar growth, and the need to conduct a "market potential study" however, the Capstone Report is much less clear on establishing year-by-year program capacity targets and how that capacity will be allocated among industry sectors[7] or be made available on a first-come, first- served basis. Once again, the BPU can look to other states for guidance. Both Massachusetts and New York created minimum set-asides for the residential and small commercial sectors to allow the development of a diverse industry.

Furthermore, the Capstone Report is also silent on how much capacity would be made available for large scale projects – or projects subject to competitive solicitations – or smaller scale projects that would take advantaged of fixed incentives. The BPU's Straw proposal should clearly spell out these design elements and at minimum must be clear on the amount of capacity allocated to large scale and smaller scale projects.

B. Cost cap

Although SEIA understands that the cost cap is currently under review by the BPU it remains a potentially limiting factor in program design and as the report states, the successor program and the cost cap "proceedings intertwine strongly."[8] We strongly encourage the BPU to release a straw proposal related to its cost cap review at the same time as the straw proposal on the successor program.

C. Annual & A Full Scale Triennial Reviews

SEIA supports the Capstone Report's recommendation to review incentive levels based on changing market conditions. SEIA recommends a full-scale review to be conducted every three years. In addition, the BPU should also review the incentive program once a year to ensure progress is being made toward state goals. This "quick look" would afford the BPU staff an opportunity to recommend adjustments to incentives based on unforeseen factors – such

[6] See draft Capstone Report, p. 80. Figure 14 shows the more than 1 GW of solar need per year using the Bottom Up Forecast.
[7] See draft Capstone Report, p. 79. Figure 13.
[8] See draft Capstone Report, p. 84.

as COVID 19. Any decrease in incentive levels that would result from such review should also be implemented at least 6 months from a decision to allow the market time to respond.

D. Establishing Permanent Community Solar Program Alongside Successor

SEIA recommends the Board moves to finalize the permanent community solar program rules at the same time, or within a few months of finalizing the solar successor program rules. The Board already has the authority from the 2018 Clean Energy Act to issue the permanent program rules now instead of waiting until after PY3.

The Board and Board Staff can use the solar successor program policy discussions to finalize key details about the i) incentive amount for community solar ii) duration of the incentive and iii) any additional factors or adders to encourage community solar installations. These design details are the foundation of the permanent community solar program.

The primary benefit of establishing the permanent community solar program now is establishing policy certainty and creating a stable environment for project development. With a complete picture of the multi-year roadmap for the solar successor incentive and community solar program design details, solar firms can pursue projects and sites, work to sign up subscribers and generally submit projects for approval that are more mature.

F. Conclusion

Thank you for your consideration of these responses. We look forward to workshopping many of the subjects discussed in these comments. Any questions should be directed to:

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PART II – Answers to Specific BPU Questions

Request for Comments

Cadmus has put forth a number of program design suggestions, policy considerations, and overall recommendations. Staff has identified a number of specific questions below but encourages stakeholders to additionally share their assessment of these program and policy recommendations beyond the focus of these questions.

Topic 1: Recommended Incentive Structure Design

Based on stakeholder engagement to date, Cadmus presents three incentive "types" in the draft
Capstone Report that could be used to inform the design of the Successor Program (see section
3.3, p. 16 – 25):

- Total Compensation: similar to a contract-for-differences model, a total compensation incentive structure calculates all the revenue streams generated by a representative project to arrive at a complementary performance-based incentive amount that may change over time as revenues change to achieve an administratively determined investment target. The incentive value is added onto these revenues to reach a total fixed compensation value.

- Fixed Incentive: a fixed incentive structure is one in which the value of the performance- based incentive is fixed over time, similar to the current Transition Incentive Program.

- Market-Based RECs with Floor: a market-based REC is an incentive that varies over time above a pre-defined floor price, based on the supply of RECs produced by eligible solar projects, and the demand set by the RPS.

1) The draft Capstone Report recommends the implementation of a bifurcated incentive structure, with a competitive solicitation for utility-scale projects and fixed, administratively- set incentives for smaller projects.

    a. Do you agree with this recommendation? Why or why not?

SEIA supports the recommendation to develop administratively set fixed incentives for smaller, distributed projects and incentives based on competitive solicitations for larger, stand-alone projects feeding into the wholesale grid (a.k.a. the two-tiered system). This two-tiered approach is consistent with New York's incentive programs for distributed projects and large-scale renewables and is familiar to the industry throughout the region. Based on economies of scale, larger projects are better able to bid competitively for support and smaller projects are not. Furthermore, given the wide variety of project configurations to serve a very diverse set of solar customers, it is very difficult to design competitive solicitations for distributed projects that produce results on an apples to apples basis. Even with the non-residential project classes, projects economics varies considerably by the size of the project, whether it is located on a rooftop, or the specific customer

needs. Utility scale projects on the other hand simply feed into the wholesale grid itself and share similar characteristics.

b. If you agree with this recommendation, how should NJBPU divide market segments between those projects eligible for the competitive solicitation and those projects eligible to receive the administratively set incentives?

SEIA recommends that non-net metered, grid connected projects should be subject to competitive solicitations. All remaining, net metered and community solar projects should be subject to administratively set incentives. While many states have used a 5 MW_{ac} dividing line to mark the distinction between small and large scale or utility scale programs, New Jersey is somewhat unique in that there is no arbitrary upper limit for the size of net metered systems. Solar systems serving customers can be sized to load. Therefore, whether or not the system is net metered should be the dividing line between projects subject to competitive solicitations. (See II B. in the above comments).

i. Do you view project size as the appropriate means of differentiating between competitive solicitations and administratively-set incentives? If so, please identify what NJBPU should consider to be the size limit between a utility-scale and small-scale project.

All net metered and community solar projects should be subject to administratively set incentives.

ii. If project size is used to differentiate incentive-types, how should NJBPU develop a competitive solicitation for utility scale projects that takes into account the different revenues that net metered projects earn compared to those that sell at wholesale?

By using net metering as the diving line, the BPU would not need to wrestle with the question of separating out wholesale and retail values.

iii. Alternatively, should all net metered projects rely on administratively-set incentives instead?

Yes.

iv. If you recommend a different option for establishing criteria to distinguish projects that qualify for competitive solicitations versus fixed incentives, please elaborate on your recommendation.

Not applicable.

v. How should projects that meet the requirements of the Solar Act subsection (t) (i.e., grid-supply projects located on landfills and brownfields) be treated?

Grid supply projects located on landfills and brownfields should be able to take advantage of the adders proposed earlier in this document.

c. If you disagree with the concept of a bifurcated competitive solicitation and fixed, administratively-set incentive approach, what would you suggest as an alternative incentive structure? Please be as specific as possible.

Not applicable.

2) If NJBPU were to implement administratively-set incentives:

a. How often should the incentive value be re-evaluated and potentially reset? Please comment on the mechanism by which NJBPU should consider modeling and analysis to inform future deliberations regarding incentive values.

SEIA supports the Capstone Report's recommendation to review incentive levels based on changing market conditions. SEIA recommends a full-scale review of incentive levels and market conditions to be conducted every three years. In addition, the BPU should also review the incentive program once a year to ensure progress is being made toward state goals and to be able to respond to major events. This "quick look" would afford the BPU staff an opportunity to recommend adjustments to incentives based on unforeseen factors – such as COVID 19 or the establishment of new solar import tariffs by trade officials in Washington DC. Any decrease in incentive levels that would result from such review should also be implemented at least 6 months from a decision to allow the market time to respond. (See IV.C.)

b. Should NJBPU differentiate the incentive value (similar to the TREC factors)? If so, on what basis? Please discuss whether NJBPU should differentiate based on the following: (i) customer classes; (ii) installation type / project location; (iii) EDC service territory; (iv) project size; or (v) other.

c. How is an administratively-set incentive consistent with NJBPU's goal for continually reducing the cost of solar development for ratepayers, in line with the reductions in the cost of solar development?

By reviewing the incentive levels and compensation every three years, regulators would be able to adjust incentives based on changing market conditions and respond to the areas of uncertainty identified in the Capstone Report.

d. In the draft Capstone Report, Cadmus used a 15-year Qualification Life (i.e., incentive term) as the base case, with the exception of residential net metered direct-owned projects, for which the incentive term was set at 10 years based on project payback period. Please comment on these respective proposals regarding length of qualification life, including what changes you would suggest, if any, and why.

SEIA support the 15-year qualification life and this should be set as a standard for all administratively set incentives.

3) If NJBPU were to implement incentives based on a competitive solicitation:

a. How should the competitive solicitation be designed? What evaluation criteria should NJBPU implement in administering the solicitation? Should project selection be based exclusively on price (i.e., value of the incentive), or should it include consideration of other criteria (and if so, which ones)?

Similar to New York, SEIA recommends that New Jersey holds at least annual solicitations for large scale projects for an established number of MW per year. As part of the large-scale solar program, a rolling five-year schedule of MW procurements should be published. Similar to pending legislation (S.2605), companies would bid for RECs, energy and capacity and upon selection the firm would receive the "as bid" price. Furthermore, the BPU would evaluate bids against pre-established criteria, with price being the major driver for project selection, but also taking into considering the in-state economic development impacts of the project, the proposing firms experience in building similar projects, and whether the project has reached major development milestones. (See II D in the above comments).

b. Cadmus studied incentive structures for the environmental attributes of a given project (i.e., unbundled the environmental attribute, with projects remaining merchant on energy and capacity values). Please discuss project finance-ability of this incentive structure, as opposed to a bundled incentive structure, addressing the implications to price and risk to ratepayers.

A bundled contract (RECs, energy and capacity) drives down the cost of the project and generally improves the financing for solar projects, decreasing the impact on ratepayers when compared to other procurement options. Analysis conducted by the New York State Energy Research and Development Authority in 2015 showed considerable cost reductions with this kind of approach.[9]

c. How would NJBPU set the incentive value using a competitive solicitation? In particular, please discuss the pros and cons of a pay-as-bid system or a single-clearing price system.

On the one hand, a single clearing price mechanism protects market participants against gaming behavior by bidders and protects against low-ball bids entered simply to win awards. On the other hand, single clearing prices set for the last MW that clears an auction paid to all bidders can also result in windfalls to developers that have considerably lower costs. On balance, and given the cost cap restrictions, a pay-as-bid system coupled with very strong project maturity requirements for bidders should avoid over-payment to bidders, avoid windfall profits and ensure projects reach completion.

d. Should NJBPU implement a minimum and/or maximum bid value in order to prevent overly aggressive or overly high bids?

e. How often should NJBPU hold solicitations? How can NJBPU mitigate the risk of "stop and start" development cycles due to the nature of punctual solicitations? For example, should NJBPU consider implementing an "always on" incentive program in the context of a competitive solicitation? How would such an incentive be implemented?

[9] See "Large-Scale Renewable Energy Development in New York: Options and Assessment" New York State Energy Research and Development Authority, June 2015. Available at: https://www.nyserda.ny.gov/-/media/Files/Publications/PPSER/NYSERDA/Large-Scale-Renewable-Energy-Development.pdf

SEIA recommends that New Jersey holds at least annual solicitation for large scale projects for an established number of MW per year.

f. Should NJBPU account for differences in project cost for different project types (e.g., project type or site, in-state vs. out-of-state)? If so, how?
A simple approach would be to allow out-of-state solar to sell RECs into the market and provide a more robust incentive for in-state resources along the lines we have described.

g. In the draft Capstone Report, Cadmus used a 15-year Qualification Life (i.e., incentive term) as the base case. Is this the appropriate term for incentives determined via a competitive solicitation?

Yes.

h. New Jersey's solar incentive programs have historically been delivered via a program established by NJBPU. Should NJBPU consider instead delivering the incentives through project-specific contracts with the EDCs? Would this approach reduce financing costs for developers? Please discuss the pros and cons of both approaches, including the potential benefits of a contract filed with the Federal Energy Regulatory Commission and imputed debt considerations.

For the competitively bid grid scale projects, we strongly recommend firms submit bids of RECs, energy and capacity and execute those agreements directly with the EDCs. This approach has proven to provide low cost power to utilities and would be a prudent cost saving approach given the cost caps.

4) How can NJBPU prevent queue siting or speculative project bids? In other words, what maturity requirements should NJBPU implement? Please consider, for example, minimum bidding requirements, escrow payments, etc. Should NJBPU require different maturity requirements for projects entering the competitive solicitation process versus the administratively-set incentive levels?

5) The draft Capstone Report recommends that NJBPU maintain flexibility in program design, in order to respond to changing marketwic circumstances and enable the integration of emerging technologies and new solar business models.

For all three of these questions, our previous responses apply. SEIA supports the Capstone Report's recommendation to review incentive levels based on changing market conditions. SEIA recommends a full-scale review of incentive levels and market conditions to be conducted every three years. In addition, the BPU should also review the incentive program once a year to ensure progress is being made toward state goals and to be able to respond to major events. This "quick look" would afford the BPU staff an opportunity to recommend adjustments to incentives based on unforeseen factors – such as COVID 19 or the establishment of new solar import tariffs by trade officials in Washington DC. Any decrease in incentive levels that would result from such review should also be implemented at least 6 months from a decision to allow the market time to respond. (See IV.C.)

a. Generally, how can this flexibility be incorporated into the design of the Successor Program?

b. How should changes in the federal Investment Tax Credit or carbon-pricing policies be incorporated into future incentive level resets?

c. How should NJBPU account for potential changes to the PJM and FERC regulatory structures and capacity markets?

6) The draft Capstone Report includes a SAM case for out-of-state utility-scale solar. Should NJBPU provide incentives to out-of-state utility solar through the Successor Program? If so, how, and under what conditions?

SEIA strongly supports the recommendation to allow out-of-state solar delivering into the NJ market the opportunity to sell Class I Renewable Energy Credits ("RECs"). For far too long, the out-of-state wind developers have provided clean energy to New Jersey while out-of-state solar firms have been prohibited from doing so.

This prohibition may have made sense in the early days of New Jersey's solar program but has outlived its usefulness. With a mature in-state industry sector now established, and given the state's aggressive clean energy goals, the state Energy Master Plan ("EMP") modeling showed that out-of-state solar would be an important part of the low-cost pathway to reaching the targets set by the Clean Energy Act. To reach their compliance obligations, the state's electric distribution companies ("EDCs") should be able to purchase RECs from out of state solar resources.

However, SEIA members are not seeking an additional incentive for out-of-state solar at this time as the Capstone Report proposed. As we have stated before, no further incentive support would be needed beyond authorizing the ability to sell Class I RECs. By way of balance, the BPU should set a target for the amount of out-of-state RECs that can be sold to satisfy Class I obligations and how much should come from in-state resources. (See II.C.)

a. The Energy Master Plan found that out-of-state utility scale resources deliverable to New Jersey are part of the least-cost path to reaching 100% clean energy. Do you agree or disagree that such projects should be eligible to participate in New Jersey's solar program?

b. Please address any commerce clause or other legal issues associated with restricting the ability of out-of-state utility-scale projects to compete in the competitive solicitation.

c. Should NJBPU require that such projects respect transmission limits into New Jersey? If so, how should such a requirement be designed?

d. Should NJBPU require that such projects sell their energy into New Jersey (i.e., deliver into a New Jersey EDC service territory)? If so, how should such a requirement be designed?

Topic 2: Modeling

The modeling conducted by Cadmus and described in the draft Capstone Report was largely informed by the assumptions used in the Transition Incentive program modeling, updated cost data from projects in the SRP, and subsequent stakeholder engagement such as the March 2020 Successor Program cost survey. Staff is interested in stakeholder feedback on Cadmus' assumptions and modeling choices. Staff has identified a number of

specific questions below, but encourages stakeholders to share their assessment of the model and modeling assumptions beyond the focus of these questions.

1. System Design

a. The Capstone Report assumes capacity factors ranging from 14.2% to 16.5% depending the SAM case. Verified data – from monitored residential systems in NJ – shows that systems generate 1150 kWh/kW/yr or a 13.1% capacity factor. Overall, with the exception of the ground mount installations, the capacity factors listed in Table 15[10] appear to be one percent higher than industry estimates for each remaining project type.

2. System Costs

a. In the residential case, member firms report inverter and module costs are $0.05 - $0.10/W higher than the levels included in the modeling for these components.

b. With regard to commercial cases, member firms report multiple differences with the modeling input.

1. Interconnection costs will be increasing over time, and the SAM model should be prospective and in line with the interconnection cost increases seen in other states.

2. Insurance costs are now higher due to COVID, and the SAM model should include an updated survey.

3. For solar carports, balance of system costs are reported by member companies to have increased, due in part to higher current steel costs.

c. With regard to community solar projects, member firms believe that the modeling should account for a higher risk profile due to the need to obtain and replace subscribers over time.

3. Financial Parameters

a. Generally, the solar industry calculates project internal rate of return ("IRR") on an unlevered basis. The updated IRR modeling should reflect and unlevered rate of return of between 7.5% and 8% instead of the 9.7% levered IRR proposed in the report.

b. Using 15% discount estimate for customers to derive the PPA rate is not in line with the current market.[11] Residential discounts should be modeled between 20% to 25% and commercial and industrial ("C&I") discounts should be modeled at 25%.

c. Furthermore, based on the Capstone Report, it was unclear whether and how prevailing wage requirements for projects greater than 1 MW in size were handled in the SAM cases.

4. Incentives

a. The consultants assume a considerable amount of "safe-harboring" of the federal investment tax credit ("ITC") at the 26% level. Although the discussion over delaying the ITC

[10] See draft Capstone Report, Table 15, p 37.
[11] See draft Capstone Report, p 45.

step-down is still under discussion in Congress, that outcome is uncertain and SEIA recommends the ITC input assumption should be set at 22% and aggressive safe harboring should not be assumed.

7) Is Cadmus' breakdown of SAM cases, as identified in Table 12 (p. 32), appropriate? Why or why not?

8) Please provide feedback on Cadmus' SAM model inputs, as identified in the draft Capstone Report and the supplemental modeling spreadsheet. In particular, please provide feedback on the following assumptions:

   a. Modeled system size (Table 13, p. 34). For example, how could the adoption of the 2018 building codes and subsequent changes to residential systems setback requirements impact system size?

   b. Installed costs (Table 17, p. 39). What are factors that could impact installed costs moving forward? Has Cadmus correctly identified installed cost assumptions for the out-of-state solar and community solar SAM cases?

   c. Financial parameters, including interest rates and loan terms (Tables 19 and 20, p. 43).

   d. Revenue assumptions. In particular, please comment on the ability to quantify projects' demand charge reduction (see Cadmus' modeling note on p. 45).

   e. Specific energy production and energy degradation rate (see Cadmus' modeling note on p. 61).

   f. Investment Tax Credit ("ITC"). Should NJBPU assume that non-residential projects are able to safe harbor under the 2020 ITC at 26% (similar to the approach adopted in 2019 for the Transition Incentive Program)?

9) Do you agree with Cadmus' derivation of wholesale and energy prices, as presented in Table 21 (p. 46)? If not, how would you recommend modifying Cadmus' approach?

10) Cadmus provided different approaches to modeling the MW targets (see section 4.3, p.50 - 56). How should NJBPU set the MW targets, while maintaining compliance with the legislative cost caps?

Other than several statements about the need for steady solar growth, and the need to conduct a "market potential study" however, the Capstone Report is much less clear on establishing year-by-year program capacity targets and how that capacity will be allocated among industry sectors[12] or be made available on a first-come, first- served basis. Once again, the BPU can look to other states for guidance. Both Massachusetts and New York

[12] See draft Capstone Report, p79. Figure 13.

created minimum set-asides for the residential and small commercial sectors to allow the development of a diverse industry.

Furthermore, the Capstone Report is also silent on how much capacity would be made available for large scale projects – or projects subject to competitive solicitations – or smaller scale projects that would take advantaged of fixed incentives. The BPU's Straw proposal should clearly spell out these design elements and at minimum must be clear on the amount of capacity allocated to large scale and smaller scale projects.

11) Cadmus recommends that NJBPU consider whether to differentiate treatment between direct-owned ("DO") projects and third-party owned ("TPO") projects. Please comment.

SEIA does not support differentiation between direct-owned and third party owned solar systems. While the economics for direct-owned and third-party owned systems may be somewhat different, many solar firms offer both options and creating different incentives for the two types of programs adds needless complexity to the program. This may be an area to revisit in later program reviews and regulators could return to this as the program evolves.

12) Please comment on the transparency and replicability of Cadmus' incentive modeling: if NJBPU were to implement an administratively determined incentive, could this model serve as the basis for setting the incentive value going forward? If not, what changes would need to be made to make it suitable?

13) Please provide general feedback on Cadmus's modeling inputs, methodology, and assumptions not already addressed in a previous question.