CS Energy

March 20, 2020

State of New Jersey
Board of Public Utilities
44 South Clinton Ave
Trenton, NJ 08625-0350
Via email: solar.transitions@bpu.nj.gov

Subject: Comments on "Successor Incentive Program Pursuant to P.L. 2018 C.17"

To Whom it May Concern,

Thank you very much for the opportunity to submit responses to questions published by the BPU regarding the Successor Incentive Program.

Headquartered in Edison, NJ, CS Energy has been an industry leader in NJ since 2007 having built over 235MW of projects in the State. Nationally, we will have built 1GW of solar by the end of 2020. Given our experience within NJ and other strong solar markets such as CA, MA, NY, RI, VT, VA, and TX we have depth of knowledge and operating history as a developer and EPC contractor to understand what factors shape a successful incentive program. We have drawn on this experience to provide the enclosed comments.

We are excited to work through this collaborative process with the NJBPU and look forward to participating in the Successor Program.

Best regards,

John Ervin
Manager, Business Development

CS Energy

**Topic 1: Successor Program Incentive Design**

Questions:

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

The market-based renewable energy credit structure has served New Jersey well in terms of achieving the desired buildout result over the last decade. The flexibility of this model in "automatically" adjusting to movements in costs, federal policy changes and other externalities is a very important program feature that is not reflected in either of the two other incentive policy alternatives. It is also important to note that the administrative costs associated with the market-based approach through private sector SREC trading and brokering firms has been of significant value in minimizing ratepayer costs and should be given due consideration as a least cost model in the development of the successor program.

It is clear, however, that lenders, investors, and developers are and have been moving toward a fixed price performance incentive as a means of further reducing uncertainty and potential market volatility concerns. The "certainty" of this incentive model payment is very attractive in spite of the fact that over time these payments remain fixed in spite of the fact that all other market parameters continue to move up and down independently.

The tariff-based incentive "Massachusetts Smart" incentive is also embraced by lenders, investors and developers; however, it is a far more complicated structure that would require a very significant amount of time and effort to develop the myriad of policies decisions necessary for its implementation.

We believe that a fixed incentive performance based (TREC type) “base” program, then supplemented with a variety of "adders" and other modest adjustments patterned after the Massachusetts Smart program would when taken together and administered in the most cost effective and least disruptive way be the best alternative platform for the Board to pursue at this time.

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

A fixed incentive program needs to be reevaluated on a regular basis. We think that a review process subject to an open administrative hearing process at least every three years would likely be sufficient to maintaining the appropriate balance and alignment between incentives and development costs under most normal circumstances. We would, however, also recommend that an ancillary process be developed to immediately open hearings should any exigent circumstance occur. For example, it is now fully expected that the Federal ITC will be reduced under a schedule already set. Clearly, the Board should have an appropriate process in place to make the modifications necessary on a prospective project basis to permit New Jersey to continue to advance toward its goals.

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, different project types have different build costs and operating expenses. If NJ wants to continue to encourage a diverse market, then different incentives should be offered to different types of projects. The main categories should be:

- Residential
- Commercial (<5MW)
- Community Solar (<5MW)
- Landfill / Brownfield
- Large Scale (>20MW)

It is important to create incentive levels that drive market growth within the sector. This means creating an incentive that reflects the costs to build in that sector. The factors could also be used to drive growth into preferred project types that are important to the state. For example, landfill solar is among the most expensive project types, but is preferred by the State, so the incentive level should be set such that developers are still interested in developing solar landfills. Once the base incentive level is set, the board could offer additional incentive for landfill community solar. However, project types in this example (landfill and community solar) should be able to stand within their own incentive structures.

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?

Naturally, the ongoing market provides the best and most up-to-date information available to setting incentive levels appropriately aligned with costs. The market-based model continuously reacts to build cost information, federal policy changes, and current financing considerations.

Administratively set incentives should be based upon a transparent consensus-based set of assumptions then calculated from a singular database. This is arguably the best way keep both the industry and regulators aligned in the development of appropriate incentives for each market segment based purely upon demonstrated economic need. While administratively set incentives can also be used to create segment "policy" preferences, we believe that this muddies accurate cost analysis and creates confusion. Additionally, setting certain segment incentives unreasonably low to support policy objectives results in the economic "strangulation" of some market segment to the benefit of "preference markets." Market segment policy preferences once clearly articulated can be advanced through other market interventions far more effectively.

Competitive solicitations and "auctions" are clearly not applicable to the vast majority of projects inasmuch as the unique aspects of project development muddy economy of scale comparisons in all but massive projects (20 MWs or greater) as the Board has suggested in its questions. There is simply no benefit to undertaking this complicated and time-consuming process over thoughtful administratively set incentives by Board staff.

CS Energy favors administrative incentive modeling for all market segments, save projects in excess of 20 MW as has been suggested by Board staff.

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

As discussed in the answer to question #2, the Board should provide for an administrative hearing process every 36-months in order to review and update incentive payments for subsequently approved projects. In addition, the Board should also institute a hearing process to accommodate a review of emergent circumstances that would warrant immediate alteration of the incentive program for subsequently approved projects due to significant changes to the cost/incentive balance in either direction.

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

The longest term possible would reduce the cost of financing and therefore would require a lower incentive level. We believe 15 years will be best.

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.

At the public hearing on March 3rd, several presenters asked about the meaning of this question and requested clarification, which was not offered. Inasmuch as we are not sure as to what is being asked, we will differ comment until some additional clarification can be provided.

**Topic 2: MW targets / Program Capacity**

Questions:

8. What MW target project categories should be established?

A category should be created for community solar. Otherwise the categories will be adequate for the markets in NJ.

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

Source: https://www.njcleanenergy.com/renewable-energy/project-activity-eports/projectactivity-Reports

Beginning in energy year 2026 legacy projects will begin to roll off very significantly as these projects reach their respective eligibility periods. Therefore, setting overall targets of 400-500 MWs per year in the next four years to stay under the cost cap would appear realistic. Moving to even higher build rates in excess of 800-1000 MWs in subsequent years are also achievable if our state's EDCs can help expedite interconnection studies and work to mitigate interconnection costs.

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

New Jersey has set an aggressive renewable portfolio standard which requires ~9GW of solar to be built over the next 10 years. This would 3X the ~3GW of solar we have installed here in the last decade.

While the historical installed capacity shown in the table below is indicative of an overall successful incentive program in NJ to date, it is not representative of a market breakdown that will set the industry on a course to achieve the RPS goals. To meet the RPS, larger grid tied projects must be considered and adequately incentivized to encourage developers to invest the large amounts of capital needed to develop large scale, grid tied projects.

There is also the addition of community solar, which should be considered in the MW targets. Community Solar provides access to all types of residential and commercial customers that otherwise could not receive the benefits from behind the meter generation. Community solar projects will primarily serve residential customers and will be more cost effective than traditional residential solar construction.

Therefore, the board should increase the amount of grid supply projects and the new community solar capacity should be carved out of the sectors that it is intended to serve – with the majority coming from residential BTM and with some mixed size commercial BTM for anchor customers.

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

It is important that development and construction of new projects is encouraged, and a strong pipeline of projects is created, but the pipeline should be filled with quality prospects that have high likelihood of being built.

Therefore, a first come first serve basis will work provided that a bar is set that requires projects to demonstrate their viability and development progress to ensure that all projects receiving incentives will actually be successful.

Additionally, we believe that annual MW targets should be set aggressively to encourage development and thoughtfully so that the cost caps are not exceeded. i.e. it would not be responsible to open 3GW of capacity upon initiation of the Successor Program. We need to build and aggressive build rate that creates a long-term market in NJ, discourages underdeveloped projects to be entered into the program, and accomplishes RPS goals.

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.

As mentioned in our answer to #11, we think it is important the queue is not burdened with projects that may not be built.

The challenge is balancing stricter application requirements, which would lead to more mature projects being submitted into the Successor Incentive, with the amount of at-risk development capital that the developer will deploy without a clear understanding of what the project revenue will be. This is of particular concern with declining incentive structures.

Therefore, we believe that a program with high barriers for entry – maturity requirements, filing fees, or otherwise – should be paired with a stable incentive structure that provides revenue certainty and high acceptance rate into the program, provided that the entry requirements are met. This will provide developer assurance that the money spent on interconnection, site control, engineering, survey, etc. will be rewarded and ensure that the Successor queue is not bogged down with false projects.

We are not in favor of declining block structures like those we've seen in NY, IL, and MA. These structures create a frenzy of developers trying to get their projects into earlier blocks and prioritizes speed over quality and in turn leads to projects 'queue sitting'. These structures can also miscalculate the rate of the declining incentive – too fast or too slow. Instead, we believe the incentive should be fixed and reevaluated periodically

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

Yes

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

We believe that all suitable sites within the State should have the opportunity to participate in the Successor Program and renewable energy is brought to the region.

We are uncertain if the scenario discussed in question #14 would be viewed as a penalty to municipal utilities (e.g. net metering / community solar) or a free pass to renewable energy (e.g. grid tied solar). In either case, it is important that it is considered and addressed if developing projects in municipal utilities.

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?

The requirement to maintain the eligibility requirement of "connected to a New Jersey distribution system" must be maintained in order to protect New Jersey jobs and the New Jersey solar development market. New Jersey ratepayers currently fund 90% of their Class I spend (nearly $100 million annually)

to promote out-of-state renewable projects and out of state jobs. New Jersey will come to rely more heavily on the Class I market to achieve its goals in the future, however, until those out-of-state programs mature and come closer to more equitably sharing the cost of climate change, New Jersey's first priority must be to protect its own industry and jobs.

**Topic 3: Grid Supply Solar**

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 subsection (r.) and Subsection (t.) applications will play an important role in meeting the goals of the Energy Master Plan.

We believe that the processes for subsection (r) and (t) are adequate and easily adjusted to include additional maturity requirements if the board chooses to do so. Having gone through both processes, we would just add that a specification or guidance document be part of the process. e.g. the application requires the applicant to show a proximity map of "x", the Board expects the map to include "y" features and look like this (and provide example map)

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)?

A competitive solicitation process would likely be the best fit for incentive evaluation for large grid projects of scale of 20MW or more where economies of scale would become an important cost consideration.

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?

No. There should not be a size limit for that participate in the Successor Incentive. As mentioned throughout our responses, in order to achieve the RPS goals and keep costs to ratepayers low, large scale projects must become an important part of the overall portfolio.

As indicated in our answer to #17, the lower costs to build large scale projects and the resulting incentive gap for projects over 20MW requires that these types of projects be competitively procured.

These types of grid tied projects will drastically reduce the incentive program cost to ratepayers and take meaningful steps toward the RPS goals.

The idea that grid connected projects will "drown out" other sectors is unrealistic. These projects take years to develop and with the aggressive RPS goal there will be MWs available in all sectors. As shown

in the table below, there is a significant gap between historical market build rates and the rate which the RPS demands:

| | |
|---|---|
| MW needed between 2020-2030 per RPS | 9000 |
| MW per year | 900 |

| | Historical Market Share | Successor Program Yearly MW | Greatest Installed Capacity in 1 Year* | Average Annual Capacity Installed (2009-2019)* |
|---|---|---|---|---|
| Residential | 30% | 270 | 180 (2016) | 85 |
| Non-Residential <= 100kw | 4% | 36 | 27 (2011) | 12 |
| Non-Residential > 100 to <1000kW | 24% | 216 | 136 (2011) | 66 |
| Non-Residential >= 1000kw | 21% | 189 | 135 (2019) | 60 |
| Grid Supply | 21% | 189 | 138 (2011) | 60 |

**source: NJ Clean Energy Solar Installation Report February 2020*

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?

We believe the best way to promote investment in rooftop solar grid supply is to encourage more community solar. These projects are well suited for community solar projects because they would, in most cases, bring the solar project to a more industrialized area, which brings generation closer to electric loads. Secondly, they are better suited for community solar for the same reasons they are not well suited for traditional grid supply projects, explained below.

We are not supportive of rooftop grid supply as a priority. While it is an effective use of space, the costs to build compared to ground mount grid supply is considerably more and, unlike a behind the meter solar / building owner relationship, the "solar tenant" relationship with the building owner are not adequately aligned. This is because the building owner indirectly benefits from the solar generation via rent paid by the solar project. This could be in the form of a lease or, a more favorable, kwh-based rent structure. However, the building operations take priority over the solar performance and unreasonable removal and solar interruption requirements written into the roof lease.

To overcome this issue, the building owner must be highly incentivized to not disrupt the solar generation, which leads to above market rent consideration, which compound over on the higher build costs of rooftop and translates to higher program costs for ratepayers for the grid tied sector.

**Topic 4: Solar Siting**

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?

The area around the landfill should be allowed to participate in subsection (t) as well, not just the landfill mound.

Greater utilization of brownfields, underutilized industrial land, historic fill, should be considered.

The incentive should be aligned with State Policy preference for underutilized land, but it should not be used as a disincentive for greenfield projects that will be required to meet program goals. Large-scale greenfield projects will be an important part of achieving the RPS targets from in-state solar. We recommend that large scale projects should be permitted on certain agricultural land within the state.

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.

In order for NJ to meet the goals outlined in the Energy Master Plan, greenfield development will be required.

In addition to being the most cost effective way to deploy solar projects, large scale grid tied projects are also the most efficient in terms of solar production (greater kwh for each kwdc installed) which increases the environmental benefits for the residents of NJ for the lowest cost.

If we assume that grid supply sector is increased to 30% of the RPS demand, up from the 21% historical, and given the more efficient production, MW target for the RPS, and available land in NJ a compelling argument can be made to allow large development on farmland. See figures below:

| 2030 MW RPS Goal | Current MW Installed | MW needed by 2030 | Grid Tied Market | Grid Tied MW RPS Target |
|---|---|---|---|---|
| 12,000 | 3,000 | 9,000 | 30% | 2,700 |

| NJ Farmland Acres* |
|---|
| 734,084 |

| Acres / MW | Acres needed to meet RPS | % of farmland acres |
|---|---|---|
| 5 | 13,500 | 1.84% |

*source – USDA 2017 Census of Agriculture

This hypothetical example is to illustrate the amount of farmland need to satisfy 100% of the grid tied market sector and the farmland available in NJ that could be used to deploy efficient and cost-effective solar projects. It doesn't include underutilized land or forested lands and also does not consider that a portion of the grid supply projects will be satisfied by projects built on landfills, brownfields, rooftops, and carports

The point to be made here is that NJ land available for solar development and a **fraction** of that land being made available for solar development would make significant strides towards the RPS goals at the lowest possible cost to ratepayers, which are two of the guiding Successor Program principles. NJ farmland is valuable, particularly preserved farmland, open spaces, parks, and wildlife management areas are also value resources to the environment and residents of NJ. However, that does not mean every farm parcel or forested land in NJ is of equal value – some farms become fallow or underutilized for example, and there is a lot to be gained by redeveloping a small percentage of NJ's land for renewable energy projects.

One consideration that is often not discussed when evaluating whether farmland projects should be included in the successor program is local zoning requirements. Farmland is protected on the State level, but local jurisdictions also have ordinances and laws that restrict the types of development on land within their jurisdiction. To think that if the Successor Program allows greenfield development that all of the farms in the State will suddenly have solar on them is unrealistic. Yes, projects will be developed but it will still be a challenging process for developers.

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 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?

Yes, this is discussed in our answer to 20. It should be expanded to beyond the landfill cap or limits of the brownfield on the site.



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