Stakeholder Comments: Solar Successor Program Meeting 1

Submitted: 3/20/2020

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I. Topic 1: Successor Program Incentive Design

a. Cadmus Modeling Assumptions
   i. *No Comments*

b. Incentive Type / Incentive Delivery Mechanism
   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.
      1. Advantages:
         a. *Sets a specific rate that developers can count on receiving for their project. This makes financing easier.*
         b. *For offtakers (i.e., community solar) - it means their expected savings are consistent and bankable.*
         c. *It makes the economics more predictable, and ratepayers will experience less fluctuation pricing.*
      2. Disadvantages:
         a. *It doesn't fully encompass the social and environmental value of energy produced.*
         b. *If electricity rates drop dramatically, both offtakers and ratepayers suffer the loss.*
         c. *If not set high enough, the incentive doesn't work to entice developers.*
   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.
      1. Advantages:
         a. *If executed will with proper compliance standards, can be a good incentive to development of solar projects.*
         b. *Usually higher rates for developers.*
         c. *Higher rates for developers mean greater savings for offtakers.*
      2. Disadvantages:
         a. *A market-based REC program is only as strong as the mandatory renewable/solar portfolio standard. It works well if the necessity for RECs is kept elevated and gradually stepped down as compliance marks are reached. But, it drops off completely when compliance standards are met.*
         b. *Does not incentivize development past whatever bar is set.*
         c. *More volatile incentive makes financing difficult for developers.*
         d. *More volatile savings figures for offtakers.*

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.
    1. Advantages:
        a. *Promotes well designed, efficient projects.*
        b. *Good for development of larger, community projects (economies of scale)*
    2. Disadvantages:
        a. *A bad year for weather can sink a project.*
        b. *Harder to finance as payment is based on performance assumptions – these are uncertain and based on uncertain variables.*
        c. *Hard to determine the actual program costs to the ratepayer as performance is variable across project designs.*

iv. How would you expect the incentive value (and the cost to ratepayers) to change based on the incentive program type?
    1. *Incentive Blocks seem to be the most efficient way to step down incentives. These have been implemented successfully in several other programs in the Northeast.*
    2. *Consider Adder/Subtractor Tranches to add incentives for more complex projects or subtract incentives for less desirable projects.*
    3. *Think about including grid stabilization measure in your rules.*
        a. *Require utilities to provide developers with circuit saturation information*
        b. *Incentivize projects in locations where more load is necessary*

v. 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?
    1. *Yes – Implementation of Base Rates based on size and Adder/Subtractor Rates based on desirability*
        a. *Standard Base Rate Blocks for different sized projects (smaller projects are more difficult and expensive to develop and construct)*
            i. *Under 250kW*
            ii. *251kW – 500 kW*
            iii. *501kW to 1,000kW*
            iv. *1,001kW to 5,000kW*
            v. *5,001kW to 10,000kW*
        b. *Adders/Subtractors for Project type and desirability*
            i. *Rooftop / Building Mounted (Adder)*
            ii. *Canopy / Parking Structure (Adder)*
            iii. *Ground Mount – Brownfields, Landfills, etc. (Adder)*
            iv. *Low/Moderate Income (Adder)*
            v. *Low/Moderate Income Community (Adder)*
            vi. *Community (Adder)*
            vii. *Municipal / Government (Adder)*
            viii. *Agricultural / Dual-use Systems (Adder)*
            ix. *Greenfield (Subtractor)*

vi. 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?
    1. *Program should be set by administrative modelling combined with stakeholder input. Competitive solicitation always hurts the program and starts it off at too low a rate. Large, national developers bid in at unrealistic pricing just to be the*

first with projects. Smaller developers can't compete with their bids, and are essentially priced out. This means the program never really takes off past the first bid. On-going market is a good way to assess the program, but not necessarily to set the standard, especially when you are creating a brand-new incentive program that looks toward the future. Whatever method is chosen should include feedback from stakeholders to ensure the departments, utilities, developers, and ratepayers are all working together towards the same end.

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

1. *Set caps for program iterations. Once a cap is met, re-evaluate and adjust the incentives accordingly. By doing this, you prevent "rule changes" mid development which can cripple projects. An example of this is the Massachusetts SMART Program 400MW Review. They set a mechanism to review and change the rules a quarter way through the program. Now projects and the program have been stalled for almost a year waiting for the DOER to release rules. You can learn from this mistake. You can implement an assessment midway through your program, but any changes wouldn't take effect until the next program iteration.*
2. *For example: Set a program cap of 1600MW in Solar Program 1. Once you have reached 800MW capacity, start the assessment and stakeholder feedback process to determine adjustments and rule changes. These adjustments would be implemented in Solar Program 2, after the First Program is full. The idea is to avoid stalls in development and facilitate steady solar growth within the state.*

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

1. *Typical Project financing is 20-35 years. Therefore, the incentive life should match that. NYSERDA currently has a 25-year program that is very successful.*

II. MW targets / Program Capacity

a. What MW target project categories should be established?

i. *Standard Base Rate Blocks for different sized projects (smaller projects are more difficult and expensive to develop and construct)*

1. *Under 250kW*
2. *251 kW – 500 kW*
3. *501 kW to 1,000 kW*
4. *1,001 kW to 5,000 kW*
5. *5,001 kW to 10,000 kW*
6. *10,001 kW to 20,000 kW*

ii. *Adders/Subtractors Tranches for Project type and desirability*

1. *Rooftop / Building Mounted (Adder)*
2. *Canopy / Parking Structure (Adder)*
3. *Ground Mount – Brownfields, Landfills, etc. (Adder)*
4. *Low/Moderate Income (Adder)*
5. *Low/Moderate Income Community (Adder)*
6. *Community (Adder)*
7. *Municipal / Government (Adder)*
8. *Agricultural / Dual-use Systems (Adder)*
9. *Greenfield (Subtractor)*

b. How should the Board set the capacity for each MW target, in compliance with the incentive cap and cost cap requirements? Please consider:
    i. how the Board should set the overall capacity to be made available on an annual basis for the Solar Successor Program; and
        1. *Capacity needs to reflect the energy goals set for in your RPS. If you are trying to reach 100% renewable energy by 2050, those capacities need to be aggressive. 3,200 MW per year is a good start. This number can be reassessed as I described Section I(b)(vi).*
    ii. the relative breakdown of the total annual capacity between MW target project categories.
        1. *This is dependent on the types of projects you want to see developed. If you want building mounted solar, allocate more capacity to that category AND incentivize it heavily. If you want to focus on areas where demand is straining the system, incentivize projects in those regions. If you want to address environmental justice, block off and incentivize community and low/moderate income – have utilities to handle subscription, billing, and collection on these types of projects. Developers will go where the rules direct them.*

c. Should the historical breakdown of actual MW installations serve as the basis for future targets?
    i. *No. They can serve a variable in the determination. But ultimately you are trying to design a program and grid for the future. Part of the Master Energy Plan is energy efficiency and electrification of transportation. Those are going to change how people use the electric grid and energy dramatically. You need develop a breakdown based on the necessary steps to your future goals, not on the picture of a grid set up 100 years ago.*

d. How should the Board administer these MW targets? Should projects be allowed to participate on a first-come, first-served basis?
    i. *It should be a first-come, first-served basis, but only for "real" projects. That means instituting requirements that a project is well into development and feasible.*

e. 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.
    i. *Requirements to include:*
        1. *Interconnection Service Agreement*
        2. *Ministerial Permits, and*
        3. *Site Control*
    ii. *These documents would need submitted and verified through and application process. This would be paid for with an application fee based on a per kilowatt rate.*
    iii. *Upon Application approval, you can give the project a certificate holding their place in the program. A refundable program fee can be charged at this point – again on a per kilowatt rate basis.*
    iv. *The certificate would require adherence to a construction timeline, with reasonable extensions for project delays (financing, interconnection, etc), also will help keep the targets on track.*
        1. *For example:*
            a. *Based on 12 months after the schedule provided by the utility in the Interconnection Service Agreement. Timeline Adjusts based on utility timeline changes. If developers can build within the utility schedule, development costs naturally decrease in tandem with incentive rate decreases.*
                i. *Per Kilowatt fee extension. Available 1 time only and extends the timeline 9 months.*
                ii. *Indefinite extension for utility interconnection. A common problem for developers is finishing a project then waiting as*

long a year and a half for the utility to hook it up. This extension wouldn't punish developers for the utility's negligence. Require developers to provide documentation showing all work is complete and they are only waiting on permission to operate from the utility.

iii. *Good Cause Extension – at the board/administrator's discretion.*

f. Should excess annual capacity be reallocated if not used (e.g. if a project drops out of the pipeline)?
   i. *Yes, allocate it to the next block.*

g. Should projects located in municipal utilities that do not pay into the RPS be eligible to receive Successor Program incentives?
   i. *Yes. If you want even distribution of resources, you need projects in municipal utilities. It's also unfair to those ratepayers living in areas under municipal utility jurisdiction not to be able to participate in community or low/moderate income programs.*

III. Topic 3: Grid Supply Solar

a. Should the Board maintain the current subsection (t) and subsection (r) processes for determining incentive eligibility for grid supply projects?
   i. *No. Currently, these rules hinder grid supply development. Grid supply solar is extremely important in achieving the goals set forth in the Master Energy Plan and need contemplated as part of this successor program.*

b. 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)?
   i. *Grid supply projects up to 20MW should be incentivized I have suggested in the previous sections. Incentivize blocks using base rates derived from system size (smaller projects lack economies of scale and need more incentives than larger systems). Then, create adders and subtractors that dictate how and where you would like to see projects developed.*
   ii. *Examples:*
      1. *Add incentives for building mounted/rooftop systems,*
      2. *Use subtractors to prevent large scale projects on greenfields*
      3. *Use adders to incentive dual-use agricultural systems that allow for farming/agricultural practices as well as energy production*
      4. *Adders for areas with high demand that need more energy supply*

c. 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?
   i. *The maximum size for a project in the program should be 20MW. This is the point were project span into utility scale and usually act as merchant plants.*

d. 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?
   i. *You can motivate rooftop grid supply development by incentivizing rooftops. As I mentioned above in Section II(a), Set your Base compensation rates on size (smaller projects need a higher compensation rate) then include an adder that incentivizes rooftops.*

IV. Topic 4: Solar Siting

a. 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?
    i. *Per my comments in Section II(a) and throughout is document, you can utilize added and subtractors to entice developers to go to areas where solar best fits the state's goals. Significantly incentivize rooftops, landfills, and brownfields to move solar to those areas. They are very expensive areas to develop and often the incentives allotted aren't near enough to persuade developers to go there over greenfields.*

b. 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.
    i. *Serious consideration should be given to breakthroughs in dual-use agricultural systems. These are systems that allow farmers and solar to work together and benefit from the land. Today, many small farmers are finding themselves falling behind in the current economy. They are partnering with solar to lease their land – ensuring a steady income, but also maintaining their farming practice on the same land. Essentially this is dual income for the farmer: Lease payments from the solar and whatever income they make from their land use. Plus, it has the added benefit of providing clean, renewable energy to the grid. Systems designed specifically for this purpose allow farmers to plant crops, graze livestock, and raise bees on the same parcel the solar is using. New panels with clear backing and correct spacing ensure crops get the amount of sunlight they need to grow. These systems allow the farmer to access and work the land underneath and between rows as needed. These partnerships combine the push toward supplying our future energy needs, while also supporting the farmers that feed us. I encourage you to speak with the farming community about these options. They are already being implemented to great success in the US and internationally.*

c. 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?
    i. *Broadening eligibility is always good for growth. Especially in an industry that is changing daily. There are many new solutions that make more complex areas systems. Or, that allow dual uses that benefit more than just the solar program.*