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Agenda Item: 8C

STATE OF NEW JERSEY
Board of Public Utilities
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CLEAN ENERGY

IN THE MATTER OF COMPETITIVE SOLAR INCENTIVE)
("CSI") PROGRAM PURSUANT TO P.L. 2021, C.169)
)
) ORDER LAUNCHING THE
) CSI PROGRAM
)
) DOCKET NO. QO21101186

Parties of Record:

Brian O. Lipman, Esq., Director, New Jersey Division of Rate Counsel

BY THE BOARD:

Through this Order, in conjunction with several rulemakings in related dockets, the New Jersey Board of Public Utilities ("Board" or "BPU") establishes the Competitive Solar Incentive ("CSI") Program, and completes implementation of the Successor Solar Incentive ("SuSI") Program.¹ The CSI Program will be open to qualifying grid supply solar installations and non-residential net metered solar installations with a capacity greater than five (5) megawatts ("MW"), as well as to eligible grid supply solar installations in combination with energy storage.² This Order also establishes siting requirements for many solar facilities designed to ensure to affordably expand New Jersey's commitment to renewable energy while not compromising the State's commitment to preserving and protecting open space and farmland.

The Board is charged by Governor Murphy and the Legislature through a series of executive orders, policies, and through the enactment of a comprehensive new solar law ("Solar Act of 2021" or "Act"),³ with affordably growing the State's solar industry, increasing green jobs, and continuing New Jersey's commitment to making solar accessible for low-and moderate-income ("LMI") consumers. This Order is a key part of a multi-year effort to implement this mandate and continue the fight against climate change by increasing the supply of electricity that New Jersey consumers

¹ The Administratively Determined Incentive ("ADI") Program, which provides incentives to residential, community solar, and net metered non-residential projects of five (5) MW and less, opened to new registrations on August 28, 2021.

² All megawatt or MW values in this Order are in direct current, or "dc".

³ L. 2021, c. 169.

receive from clean solar energy and to bring down the costs of solar generation in the State.

The Board's solar programs are important contributors to jobs and to the high quality of life in New Jersey. The solar industry employs an estimated 6,237 New Jerseyans, supporting both the local and national solar industries.⁴ While the economic and environmental benefits of New Jersey's first 4 gigawatts ("GW") of solar have been significant, the combined effect of the SuSI Program is expected to have an even larger impact. The Solar Act of 2021 directed the Board to effectively double the growth of the Board's existing solar program and directs incentives targeting up to 3,750 MW of new solar generation by 2026.

As directed by the Act, the SuSI Program is divided into two (2) components: first, the ADI Program for net metered residential facilities, net metered non-residential facilities of five (5) MW or less, and community solar facilities; and second, the CSI Program for grid supply solar projects (i.e., those selling into the wholesale markets) and net metered non-residential projects above five (5) MW in size. The ADI Program was opened to new registrants on August 28, 2021, while the CSI Program is the subject of this Order. Both the ADI and CSI Programs will provide one (1) "New Jersey Solar Renewable Energy Certificate-II," or "NJ SREC-II," for each megawatt-hour ("MWh") of solar electricity produced from a qualifying facility. The value of each qualifying facility's NJ SREC-IIs is set administratively in the case of the ADI Program, and via a competitive process in the case of the CSI Program.

Once fully implemented, the Board's SuSI Program will be an important part of New Jersey's continued national leadership in the battle against climate change and cement the State of New Jersey as a magnet for green jobs.

⁴ Interstate Renewable Energy Council, National Solar Jobs Census 2021, irecusa.org at 17 (July 2022), <https://irecusa.org/wp-content/uploads/2022/10/National-Solar-Jobs-Census-2021.pdf>

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BACKGROUND AND PROCEDURAL HISTORY

The State of Solar in New Jersey

The state of solar in New Jersey is strong, with near-record levels of solar expected to be added to the New Jersey grid in 2022. New Jersey had the seventh largest installed solar capacity in the country including a total of almost 4,220 MW of installed solar capacity as of October 31, 2022 and over 740 MW in the pipeline. This is in keeping with New Jersey's long-standing position as a national leader in solar development, despite its relatively small size, population density, and relatively lower values of solar insolation compared to some of the western and southern states. The State's aggressive clean energy policies have resulted in over 157,000 residential solar installations, representing over 1,339 MW (as of October 31, 2022), and close to 8,600 non-residential net metered installations, representing over 2,045 MW (as of October 31, 2022). Grid supply solar, which is poised for additional growth under the competitive portion of the SuSI Program but has traditionally been disfavored by State statute, accounts for over 789 MW installed as of October 31, 2022, and the recent Community Solar Pilot Program ("Pilot Program") has resulted in almost 44 MW installed so far.

The amount of solar installed in New Jersey has continued to grow at near-record levels in 2021 and 2022, despite the significant regulatory changes involved in the transition from the Solar Renewable Energy Certificate ("SREC") Program to the Transition Incentive ("TI") Program and subsequent ADI Program, and the enormous challenges caused by the COVID-19 global pandemic. Despite these challenges, more solar is scheduled to come online in the next 12 months than in almost any year on record. Concurrently, solar incentive levels have declined by amounts ranging from 30% to 70% for new projects (depending on the value of the Solar Renewable Energy Certificate-II ("SREC-II")), demonstrating significant progress toward the goal of controlling ratepayer costs.

Based on data through October 31, 2022:

- Solar employment in NJ grew from 5,384 in December 2020 to 6,237 in December 2021.⁵
- There are over 13,000 projects in the pipeline to be constructed, representing a total of 741 MW.
- There is 102 MW of grid supply capacity currently in the pipeline. There are also 369 MW of subsection (t) applications currently pending review by the Board that are not yet reflected in the TI Program pipeline data. This means that there are currently 471 MW of grid supply projects currently in some stage of development which, if all reach commercial operation, would increase the total amount of grid supply solar installed in the State by almost 60%.
- Year to date installations in 2022, measured on a nameplate capacity basis, are 357 MW; compared to 338 MW over the full year 2021, and up 30% over the same period.

Further, New Jersey's Pilot Program, which has been a national model for ensuring that LMI customers have access to the benefits of solar, continues to out-perform estimates. Staff now

⁵ Ibid.

anticipates that most of New Jersey's first round of community solar projects, which were awarded in December 2019 and total more than 70 MW, will reach commercial operation by the end of 2022. In the second year of the Pilot Program, the Board again received far more applications than there was availability in the program and awarded projects for a total capacity of 165 MW, doubling the previous year. The Program Year 2 projects are mostly expected to reach commercial operation in 2023.

The Board has elected to forego the optional third year of the Pilot Program, and will instead establish a permanent community solar program, which is expected to be implemented in early 2023.

History of New Jersey's Solar Incentives: SRECs

New Jersey has a long history of encouraging the development of solar energy production in the State. The Electric Discount and Energy Competition Act, N.J.S.A. 48:3-49 et seq. ("EDECA"), enacted in 1999, first established the Renewable Portfolio Standards ("RPS") by mandating that increasing percentages of Class I renewable energy sources be included in all retail electricity sold by Board-regulated Third Party Electricity Suppliers ("TPS") and Basic Generation Service ("BGS") providers (collectively, "TPS/BGS providers"). The Clean Energy Act of 2018 ("Clean Energy Act" or "CEA") sets the RPS requirement at 21% by January 2020, 35% by January 2025, and 50% by January 2030. Additionally, EDECA mandated retail electric power suppliers to offer net metering of wind and solar to all residential and small commercial customers. Initially, EDECA set the State's RPS goal for NJ Class I renewables at 4.0% of kilowatt-hours ("kWh") sold by January 1, 2012; that goal has increased over time.

The Board's RPS regulations, N.J.A.C. 14:8-2.1 et seq., implement the statutory RPS provisions. The rules specify separate minimum percentages for solar electric generation, Class I renewable energy, and Class II renewable energy as each of these categories of renewable energy is defined by N.J.A.C. 14:8-1.2. The rules provide that compliance may be achieved through the retirement of Renewable Energy Certificates ("RECs"); one REC represents the environmental attributes of one (1) megawatt-hour of renewable energy. To comply with the solar electric generation portion of the RPS, TPS/BGS providers obtain and retire SRECs, Transition Renewable Energy Certificates ("TRECs"), and since August 28, 2021, SREC-IIs. An SREC, TREC, or SREC-II represents the environmental benefits or attributes of one (1) megawatt-hour of solar electric generation. N.J.A.C. 14:8-2.2. A supplier or provider who holds too few SRECs to meet the RPS can make up for the shortfall by paying a Solar Alternative Compliance Payment ("SACP"). N.J.A.C. 14:8-2.3(e); N.J.A.C. 14:8-2.10.

The Board authorized the creation of SRECs for rebated solar projects in 2004. Starting with a pilot SREC-only registration program in 2007⁶ that became a permanent program and was codified in rules in 2012,⁷ the Board used the SREC Registration Program ("SRP" or "SREC Program") as the mechanism for qualifying project incentive eligibility for solar owners, developers, and installers. The SRP required that, in addition to any statutory or other regulatory

⁶ In re Renewable Portfolio Standard - Recommendations For Alternative Compliance Payments And Solar Alternative Compliance Payments For Energy Year 2008, A Stakeholder Process Regarding Alternative Compliance Payment And Solar Alternative Compliance Payment Levels For Energy Years 2009 And 2010 Or Longer, And a Solar REC-Only Pilot, BPU No. EO06100774, final decision, (Jan. 19, 2007).

⁷ 44 N.J.R. 1703(a) (June 4, 2012).

requirements, solar projects be registered in a timely manner and fulfill all requirements of that program to receive a New Jersey Certification Number and become eligible to create SRECs on the basis of the solar electricity generated. The SRP, a market-based incentive program, is generally recognized as having been very successful in stimulating the development of solar generation in New Jersey but was ultimately determined to be too costly to ratepayers to continue. As discussed further below, the Board closed the SREC Program to new entrants in May 2020, pursuant to a legislative directive.

Clean Energy Act of 2018

Governor Phil Murphy signed the Clean Energy Act into law on May 23, 2018. Among other mandates, the Clean Energy Act directed the Board to fundamentally reshape New Jersey's solar incentive programs, culminating in the creation of a long-term, durable solar incentive program that puts the State on a path toward meeting its goal of 100% clean energy by 2050. As noted above, the CEA implements that goal in large part by significantly increasing the RPS requirements: it mandates that, by January 1, 2020, 21% of kWh sold in the State be from Class I renewable energy sources and increases this percentage to 35% by January 1, 2025, and to 50% by January 1, 2030.

The CEA directed the Board to adopt rules and regulations to close the SRP to new applications once the Board determined that 5.1 percent of the kWh sold in the State by TPS/BGS providers had been generated by solar electric power generators connected to the distribution system ("5.1% Milestone"). In addition, the CEA directs the Board to complete a study that evaluates how to modify or replace the SREC Program to encourage the continued efficient and orderly development of solar renewable energy generating sources throughout the State. The Board fulfilled this requirement in a report submitted to the Legislature in January 2021, discussed more fully below.

Furthermore, the CEA codified the priority that ratepayer funds be used prudently and efficiently by setting a limit on the expenditures that may be made to incentivize renewable energy. The CEA established a statutory Cost Cap ("Cost Cap") at N.J.S.A. 48:3-87(d), that prohibits the cost of the Class I renewable energy requirement (excluding the cost of offshore wind renewable energy certificates, or "ORECs") from amounting to more than 9% of the total paid for electricity by customers in the State during Energy Years 2019, 2020, and 2021 and to more than 7% of that cost during subsequent Energy Years. The Cost Cap was amended in January 2020 to provide the Board with more flexibility in its implementation.⁸ The statute was further amended as part of the Solar Act of 2021 to include new directives on how to calculate the costs and associated benefits of the portions of the Class I renewable energy requirement covered by the Cost Cap,⁹ and to specifically exclude projects awarded under a competitive procurement from counting towards the Cost Cap.¹⁰

⁸ See L. 2019, c. 448.

⁹ See N.J.S.A. 48:3-87(d)(2)

¹⁰ See N.J.S.A. 48: 3-117(h)

New Jersey's 2019 Energy Master Plan

New Jersey's 2019 Energy Master Plan ("EMP"),¹¹ which has the subtitle "Pathway to 2050," includes a pathways analysis to reach 100% clean energy by 2050, and includes projections of associated costs. The analysis identified a target for 32 GW of total solar installed by 2050. Modeling from New Jersey's Integrated Energy Plan, completed as part of the larger EMP, suggests that New Jersey should seek to install 5.2 GW of solar by 2025, 12.2 GW by 2030, and 17.2 GW by 2035 to put New Jersey on a least-cost path to 100% clean energy by 2050. The solar development undertaken as the State works to meet these goals provides solar installers and companies more opportunities than ever before.

Transition Incentive Program

On December 6, 2019, the Board approved New Jersey's TI Program, intended to provide a "transition" between the SREC Program and a successor incentive program.¹² The closure of the SREC market was mandated by the Clean Energy Act, which required the Board to adopt rules and regulations to close the SREC program to new entrants once solar generation reached 5.1 percent of total retail sales. The Board found that solar generation reached the target level on April 30, 2020, and the SREC market was closed to new entrants as of that date.

The key feature of the TI Program was the creation of a new solar incentive, the TREC. A qualifying project receives one (1) TREC for each MWh of qualified solar production for 15 years. The TRECs are purchased and retired by the electric distribution companies ("EDCs") on behalf of TPS/BGS providers as a part of New Jersey's RPS. While the program established a "base" TREC value of \$152/MWh of eligible solar generated, the value of the TREC assigned to an individual project varies, based on the type of project and the "factor" assigned to that project class by the Board's implementing orders and subsequent rules. The value of each TREC is calculated by multiplying the base compensation rate of \$152/MWh by the project's assigned factor, where all factors are smaller than or equal to 1.

The TI Program was designed to be a temporary program that would remain in effect only until the Board opened the new Successor Program. The Board did so, as described below, through the SuSI Order and its companion orders.¹³

2021 Solar Laws: SREC-IIs and Dual-Use Solar

On June 9, 2021, Governor Murphy signed the Solar Act of 2021. The Act directed the Board to establish a program to incent the development of 3,750 MW of solar by 2026, by establishing a new program for incentivizing solar in New Jersey through the mechanism of SREC-IIs, representing the value of the environmental attributes produced by the solar electric power generation facility. The Act directs the Board to create a small solar facilities program with administratively set incentive values, and a solicitation process for awarding contracts for grid supply solar facilities and net metered solar facilities greater than five megawatts. The Solar Act

¹¹ 2019 New Jersey Energy Master Plan: Pathway to 2050, nj.gov, https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf.

¹² *In re a New Jersey Solar Transition Pursuant to P.L. 2018, c. 17*, 2019 N.J. PUC LEXIS 471 (Dec. 6, 2019). <https://www.bpu.state.nj.us/bpu/pdf/boardorders/2019/20191206/12-6-19-8B.pdf>

¹³ *In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C.17, 2021 N.J. PUC LEXIS 300* (July 28, 2021). ("SuSI Order").

of 2021 further changed the calculation method for the Class I renewable energy requirement Cost Cap and exempted the cost of the solicitation, including any resulting incentives, from inclusion in the Cost Cap.

Section 6 of the Act (C.48:3-119) directs the Board, in consultation with the New Jersey Department of Environmental Protection (“NJDEP”) and the Secretary of the New Jersey Department of Agriculture, to establish solar siting rules that will apply to projects eligible to participate in the CSI Program. The siting criteria reflect where it is permissible for solar projects to be located, where solar construction is subject to restrictions, and where it is prohibited. For some prohibited locations, the Act allows the Board to grant a waiver if it deems, after consultation with NJDEP or the Secretary of Agriculture as appropriate, the project to be in the public interest.¹⁴

Section 6 of the Act further directs the Board to establish a method to “track and record the Statewide area of prime agricultural soils or soils of Statewide importance, which are located in Agricultural Development Areas certified by the State Agricultural Development Committee” (in this Order hereafter referred to as “covered agricultural lands”), used for CSI-eligible facilities.

Specific requirements of the Solar Act of 2021 are discussed in more detail below in the description of the CSI Program, which implement section 4 of the Act, and the siting requirements, which implement section 6 of the Act.

Also on June 9, 2021, the Governor signed a bill directing the Board to develop a pilot program for Dual-Use Solar facilities (also known as “agrivoltaics”) that locate solar on productive farmlands (“Dual-Use Act”).¹⁵ The Solar Act of 2021 and the Dual-Use Act both build on the Clean Energy Act of 2018 and continue the focus on transitioning New Jersey to a clean energy future.

Successor Solar Incentive and Administratively Determined Incentive Programs

The Board took a major step forward to implementing the Solar Act of 2021 with the creation of the SuSI Program in July 2021. The SuSI Program will set the State on a path to double its solar capacity by 2026 with the installation of 3,750 MW of new capacity. Like the Act itself, the SuSI Program is divided into an administrative “small solar facilities” program, and a competitive procurement: the ADI and CSI Programs. Following the structure of the TI Program, the ADI Program provides incentives in the form of SREC-IIs with a fixed value, which has been set administratively, following comprehensive modeling of costs and multiple rounds of stakeholder involvement. Incentive values vary by market segment; in some cases, they vary according to project size and siting. The ADI Program has been open to new registrations since August 28, 2021, and provides incentives for all residential solar installations, as well as non-residential net metered installations with a capacity of five (5) MW or less.

Additionally, the ADI Program has so far included an interim incentive for projects participating in the Board’s subsection (t) program, which covers solar projects on brownfields, areas of historic fill, and properly closed sanitary landfills (“subsection (t) Program”) in order to provide a bridge for these projects until the CSI Program would be opened. Registrations for the interim incentive will close on the effective date of this order.

¹⁴ See L. 2021 c. 169 § 6(f)

¹⁵ See L. 2021, c.170.

Since the opening of the ADI Program, over 257 MW of solar has registered in the Program.

Stakeholder Process: 2018 - 2021

The complete SuSI Program represents the culmination of four (4) years of extensive stakeholder engagement.

Staff has placed special emphasis on conducting a thorough and multi-faceted outreach to stakeholders.¹⁶ Since December 2018, this has included consultant-led workshops to discuss various options for solar incentive program structures, stakeholder meetings led by Board Staff (“Staff”) on specific topics relating to the solar transition, cost surveys to inform modeling assumptions, focus groups with representative stakeholders, and robust discussions on the New Jersey Solar Transition Capstone Report (“Capstone Report”). The Capstone Report provided a comprehensive analysis of policy design options for the Successor Program. A draft Capstone Report was published for stakeholder feedback on August 11, 2020 and the final Capstone Report was presented to the Board and subsequently submitted to the Legislature on January 7, 2021.

Staff issued a Straw Proposal for design of the SuSI Program in May 2021 and conducted a series of five (5) stakeholder workshops prior to launch of the SuSI and ADI Program.¹⁷

CSI Program and Solar Siting Stakeholder Proceedings

CSI Straw

Staff posted public notice of a November 30, 2021 stakeholder meeting regarding the CSI Program. Included with the notice was a list of six (6) questions on which Staff sought feedback from stakeholders. The questions covered topics such as the designation and treatment of project categories, adequate maturity requirements and financial assurances, and other aspects of program design. One hundred and thirty-three stakeholders registered to attend the session, with 14 providing verbal comments during the session. Stakeholder representation included a large number of developers, the New Jersey Division of Rate Counsel (“Rate Counsel”), representatives of environmental organizations, and others.

Stakeholders were also invited to provide written comments following the meeting; 12 stakeholders provided comments in written form following the session.

¹⁶ A full summary of the stakeholder engagement is provided by the New Jersey Clean Energy Program, Clean Energy Act Solar Transition Stakeholder Process, available at <https://njcleanenergy.com/renewable-energy/program-updates-and-background-information/solar-proceedings>.

¹⁷ Board of Public Utilities, Notice: New Jersey 2019/2020 Solar Transition, Solar Successor Program: Staff Straw Proposal, BPU No. QO20020184 (May 5, 2021),

<https://www.nj.gov/bpu/pdf/publicnotice/Solar%20Successor%20Program%20Notice%20and%20Straw%20Proposal.pdf>.

Subsequently Staff, working with Daymark, developed a Straw proposal for further stakeholder discussion (“CSI Straw”). The CSI Straw was posted to Docket Number QO21101186 on April 26, 2022, along with a notice of three (3) stakeholder meetings to discuss the CSI Straw and solicit stakeholder feedback:

- May 26, 2022 Topics: Solicitation tranches, implementation of the “Grid Supply Solar Paired with Storage” tranche, auction procedure, and procurement frequency
- June 1, 2022 Topics: Project pre-qualification, bid participation fees, and commercial operation date requirements
- June 6, 2022 Topics: Auction price result, SREC-II payment structure

Each of the stakeholder meetings involved specific discussion topics, a presentation by Staff, and open comment period to hear from interested stakeholders. The recordings and materials presented at each of the stakeholder meetings are available on the Board’s website at <https://www.nj.gov/bpu/newsroom/public/>.

Siting Straw

On March 26, 2022, a straw proposal was published to implement section 6 of the Act on Siting restrictions for all grid supply solar installations and net metered non-residential solar installations with a capacity larger than five megawatts (“Siting Straw”).¹⁸ The Siting Straw was developed by Staff, in consultation with the NJDEP, the State Agriculture Development Committee (“SADC”), and the New Jersey Department of Agriculture (“NJDA”). The following two (2) stakeholder meetings were held to discuss the Siting Straw and give the public the opportunity to provide feedback:

- March 29, 2022 Topic: General implementation of Section 6b of the Solar Act of 2021
- April 8, 2022 Topic: Proposal developed by the NJDA and SADC regarding standards for the construction of grid-scale solar on specific farmlands in Agricultural Development Areas

Each of the stakeholder meetings included a presentation by Staff and/or representatives of other departments and an open comment period to hear from interested stakeholders. The recordings and materials presented at each of the stakeholder meetings are available on the Board’s website at <https://www.nj.gov/bpu/newsroom/public/>. Written comments were accepted until April 22, 2022, a deadline later extended to May 31, 2022.

Comments and Written Responses

On the CSI Straw, Staff received 12 written comments from a range of stakeholders, including Rate Counsel, representatives of all sectors of the solar industry, utility companies, public entities, solar customers, agricultural boards, environmental organizations, and members of the general public.

¹⁸ Board of Public Utilities, Notice: I/M/O Competitive Solar Incentive Program pursuant to P.L. 2021, c.169, Staff Straw Proposal, BPU No. QO21101186 (April 19, 2022), <https://nj.gov/bpu/pdf/publicnotice/Updated%20-%20Solar%20Siting%20Stakeholder%20Meeting%20Notice%20Approved%20with%20Straw%2020220419.pdf>

On the Siting Straw, Staff received 11 written comments from various stakeholders, including Rate Counsel, solar industry representatives, utilities, nonprofits, public entities and members of the general public. The comments were largely supportive of the general approach; they reflected a range of interpretations on the specifics of the proposals, particularly regarding solar siting on farmland and the construction requirements specified in Appendix B of the Siting Straw.

All of the comments filed in this proceeding are available through the Board's website, through the Public Access System.¹⁹ Commenters provided thoughtful and comprehensive comments on a wide array of solar program and siting matters. Each commenter's suggestions and concerns are part of the record reviewed by the Board.

Staff recognizes and appreciates the many thoughtful comments and suggestions filed by stakeholders in response to the concepts set forth in the Straw Proposal. Comments are summarized and responded to in Appendix A.

GENERAL PRINCIPLES UNDERLYING THE COMPETITIVE SOLAR INCENTIVE PROGRAM

The CSI Program represents the next step in New Jersey's fight against climate change, as well as a new opportunity for economic growth and clean energy development in the State. Following the closure of the SREC Program, the implementation and closure of the interim TI Program, and the opening of the ADI Program, launch of the CSI Program represents the final stage of the multi-year Solar Transition process initiated by the Clean Energy Act.

At the outset of redesigning the State's solar incentive program, the Board announced a series of principles that would guide that work.²⁰ Staff continues to hew closely to these principles in its proposal for the CSI Program. The following principles are of particular relevance to the CSI Program recommendations in this Order:

1. Provide maximum benefit to ratepayers at the lowest cost;
2. Support the continued growth of the solar industry;
3. Meet the Governor's commitment to 50% Class I RECs by 2030 and 100% clean energy by 2050;
4. Provide insight and information to stakeholders through a transparent process for developing the Program; and
5. Comply fully with the statute.

The CSI Program is designed to ensure compliance with these goals.

1. Provide maximum benefit to ratepayers at the lowest cost:

The incentives made available in the CSI Program will be funded by New Jersey electricity ratepayers. As such, prudence requires that these funds be used as efficiently as is practicable, while still meeting the diverse job and industry growth goals that are also key design criteria. The proposed CSI Program uses competitive principles to ensure that the cost of the incentive is as

¹⁹ See https://publicaccess.bpu.state.nj.us/CaseSummary.aspx?case_id=2110814

²⁰ Board of Public Utilities, Notice: New Jersey Solar Transition Staff Straw Proposal, (Dec. 26, 2018), [https://njcleanenergy.com/files/file/Renewable_Programs/Solar%20Transition%20Straw%20Proposal%20-%202018-12-26%20clean%20\(final\).pdf](https://njcleanenergy.com/files/file/Renewable_Programs/Solar%20Transition%20Straw%20Proposal%20-%202018-12-26%20clean%20(final).pdf) .

minimal as necessary to support new private investment in solar facilities. In addition, a long-term, durable incentive structure that reduces regulatory uncertainty will lower financing costs and therefore help to protect ratepayers' interests.

2. Support the continued growth of the solar industry:

New Jersey has long supported the development of a robust and sustainable market for renewable energy, and in particular for solar energy, through the increasing percentage of renewable energy required by the RPS and the legacy SREC Program. The entire SuSI Program aims to ensure that New Jersey's solar industry continues to thrive, while meeting all Cost Cap requirements and adapting to changing market conditions. The CSI Program set out in this Order is designed to facilitate achievement of these goals by incentivizing large scale solar while controlling incentive costs through its competitive structure. Over the course of several years, the CSI Program is designed to achieve 300 MW of annual solar, which is equal to 40% of the total goal of 750 MW of new solar per year. Additionally, the SuSI Program is intended to maintain the market for net metered residential, commercial, and industrial installations at approximately the same level as has been historically achieved in New Jersey, while doubling the community solar program compared to the Pilot Program's original annual target (150 MW versus 75 MW in the first year).

3. Meet the Governor's goal of 50% Class I RECs by 2030 and 100% clean energy by 2050:

Existing State law requires load serving entities to purchase RECs to match 50% of New Jersey's total electricity consumption by 2030, and Governor Murphy has declared that it is the policy of the State to reach 100% clean energy by 2050. The solar incentivized by the SuSI Program is one of the key pillars of meeting Governor Murphy's goal of 100% clean energy by 2050. The CSI Program will provide incentives for 300 MW of new solar in New Jersey per year, and thus forms a critical element in pursuing the interrelated goals of 5.2 GW of solar by 2025, 12.2 GW by 2030, and 17.2 GW by 2035, which are part of New Jersey's least-cost path to 100% clean energy by 2050.

4. Provide insight and information to stakeholders through a transparent process for developing the Program:

The CSI Program established in this Order, like the ADI Program launched last year, incorporates the feedback provided through a long series of stakeholder proceedings during the development of New Jersey's long-term solar incentive program. The dialogue with stakeholders, which began in 2018, involved multiple meetings, modeling sessions, and opportunities for stakeholders to provide feedback. Throughout the process, the Board has heard from interested stakeholders on a wide array of issues. This exchange culminated in the release of the March 2022 Siting Straw Proposal and the April 2022 CSI Straw Proposal for public comment. The Board received a total of 27 formal comments on the two documents, which are summarized in this Order. Staff also held two (2) formal stakeholder meetings to take feedback on specific sections of the Siting Straw, as well as three (3) stakeholder meetings on various aspects of the design of the CSI Program.

5. Comply fully with the statute

The CSI Program forms the first incentive structure designed to facilitate general large-scale grid supply solar development in the State, which has shown in other states to provide clean energy at competitive prices. This type of solar development comes at a risk of unintended impacts to vulnerable farmland and open space, which is already under significant development pressure

from other economic and social trends. The Solar Act of 2021 therefore directed the Board to “minimize, as much as practicable, potential adverse environmental impacts”,²¹ and lays out specific siting criteria to be applied to all grid supply solar facilities and net metered solar facilities greater than five megawatts in size (hereafter referred to as “CSI-eligible facilities”).

Staff’s recommendations on siting, developed in cooperation with NJDEP, the Department of Agriculture, and the State Agriculture Development Committee (“SADC”) include siting requirements for all CSI-eligible facilities designed to implement the Act, as well as specific construction requirements to minimize potential negative environmental impacts. As explained in more detail later in this order, Staff recommends that the construction requirements include that all CSI-eligible facilities other than those constructed on the built environment or on contaminated sites and landfills, must comply with NJDEP’s “Standards for the use of Pollinator-Friendly Native Plant Species and Seed Mixes in Grid Supply and Select Net Metered Solar Facilities”.

STAFF RECOMMENDATIONS

Staff recommends that the Board deny any requests, suggestions, or issues raised by stakeholders that are not specifically addressed in this Order.

CSI Program Design

Solicitation Principles

Staff sees several key benefits to a competitively determined incentive program:

- First, a competitive solicitation process will ensure that New Jersey ratepayers are incentivizing the projects seeking the lowest incentive contribution from them;
- Second, the setting of incentives through a regular process ensures that incentive values will be reflective of the most recent market conditions;
- Third, the fixed, long-term, and guaranteed nature of the incentive provides a relatively low-risk incentive structure for developers, thereby encouraging investment of private capital; and
- Fourth, by requiring projects to remain merchant in the energy market, the Board would provide developers a clear incentive to maximize the value of the energy they produce despite the fixed incentive. For example, developers would have an incentive to design systems to discharge electricity at times of day when prices are high.

Commenters generally agreed that the competitive solicitation model has the potential to significantly expand market segments, such as grid supply on warehouse rooftops and other types of grid supply projects, which have thus far been limited by administrative or regulatory barriers.

As a part of the SuSI Program, the CSI Program will provide incentives through NJ SREC-IIs, as required by Section 2(a) of the Solar Act of 2021 [L.2021, c.169, § 2(a)]. Staff recommends a program design utilizing a competitive methodology for awarding NJ-SREC-IIs. As explained in more detail later in this order, the SREC-IIs will be assigned a fixed value based on the accepted project bid, in \$/megawatt-hour (\$/MWh) of solar electricity produced from a qualifying facility, and

²¹ See L. 2021 c.169 § 6(b)(1).

paid out for the duration of a project's eligibility for said incentive ("qualification life").

Tranche Procurement

In the CSI Straw Proposal, Staff proposed four (4) market segments: one for basic grid supply projects; one for grid supply projects located on targeted desirable land uses (for example, the built environment and contaminated sites and landfills); one for solar + storage projects; and one for large net metered non-residential projects (above 5 MW). As discussed below, Staff now recommends that the Board consider creation of a fifth market segment for projects on contaminated sites and landfills.

Staff recommends that the CSI Program be structured into separate categories, or tranches, to ensure that a range of competitive solar project types are able to participate despite potentially different project cost profiles. Staff recommends the following tranches:

- Tranche 1: Basic Grid Supply
- Tranche 2: Grid Supply on the Built Environment
- Tranche 3: Grid Supply on Contaminated Sites and Landfills
- Tranche 4: Net Metered Non-residential Projects above 5 MW
- Tranche 5: Storage Paired with Grid Supply Solar

Tranche 1 would include basic grid supply projects, such as greenfield solar projects as well as most floating solar, that do not qualify for Tranches 2 and 3.

Tranche 2 would include grid supply projects which are located on the built environment. For the purpose of eligibility for tranche 2, "built environment" is defined as the surface of one (1) or more existing, serviceable structures or a serviceable, improved and impervious roadway(s) built for a purpose other than solely to facilitate solar development.

Tranche 3 would include a specific subset of projects on contaminated sites and landfills and associated disturbed areas. For the purpose of eligibility for tranche 3, "contaminated site" is defined as a property on which industrial or commercial operations were conducted and a discharge occurred, where 'discharge' means the same as the term is defined in section 23 of L. 1992, c. 139 (N.J.S.A. 58:10B-1). Landfills will be defined as properly closed sanitary landfills per N.J.A.C. 14:8-1.2. Associated disturbed areas will be defined as areas which may themselves not have been contaminated but, after considering tax and property records as well as historical land use, are clearly associated with contaminated areas or landfills. Staff recommends that the associated disturbed areas be limited to no more than 10 percent of the land to be used for solar development.

In recognition of the fact that some agricultural land will meet the technical definition of a contaminated site but acknowledging that it is generally undesirable that projects on these sites compete in tranche 3, projects proposed on agricultural land will be excluded from participation in tranche 3.

Tranche 4 would include net-metered projects greater than 5MW serving non-residential customers.

Tranche 5 would include projects that pair grid supply solar generation and energy storage facilities. For the purpose of eligibility for tranche 5, a storage facility is defined as a device that is capable of absorbing energy from the grid or from a distributed energy resource, storing it for a

period of time using mechanical, chemical, or thermal processes, and thereafter discharging the energy back to the grid or directly to an energy using system to reduce the use of power from the grid. The storage discharge capacity in MWhs eligible for the adder would be limited to a maximum of four (4) times the total capacity in MW of the solar project [that is, a solar project may be paired with four (4) hours of eligible storage or less].

In all tranches, pursuant to the Act, projects must be connected to a distribution or transmission system operated by a New Jersey public utility or local government unit.²²

Discussion of Tranche-specific Considerations

Tranche 1: Basic Grid Supply

All grid supply projects will automatically be evaluated and eligible to compete in tranche 1, regardless of whether they also qualify for tranches 2 and 3. For registration purposes, each project that meets the more specific requirements of Tranches 2 or 3 should register to compete in those tranches. Additionally, mixed land use projects, e.g. with a greenfield portion, as well as a portion on the built environment, can elect to bifurcate the project and enter the qualifying segment into the appropriate tranche, or request that the project be considered only in tranche 1.

Tranche 2: Grid Supply on the Built Environment

This tranche will include projects on rooftops, canopies over parking lots or parking decks, and other similar installations on the existing built environment. These projects have limited impact on the environment and open space. Considering these projects in a separate tranche recognizes that the Board may choose to select these projects even if they come at a premium over greenfield solar development, while establishing a competitive structure to set an appropriate market price for these projects.

Tranche 3: Grid Supply on Contaminated Sites and Landfills

Staff recommends the specific tranche for projects on contaminated sites and landfills, based on stakeholder comments and the recognition that there can be additional costs associated with mitigating the contamination and securing permits, and that these complicated projects may require a longer development cycle. Tranche 3 also serves to implement the direction provided by the Solar Act of 2021 that the solar solicitation program must “ensure that the environmental and public health benefits of solar electric power generation facilities on contaminated sites or landfills are recognized, including accommodating the long development timescale for these projects.” N.J.S.A. 48:3-117(c)(8).

The Board has long recognized the benefits of solar development on contaminated sites and landfills, with approximately 254 MW operational under the subsection (t) program of the Solar Act of 2012 as of October 31, 2022. This is not least because such development has enabled clean-up and mitigation activities on such sites, and because, given the limited availability of land in New Jersey, using contaminated sites and landfills for solar development reduces development pressure on open space. Staff believes a separate tranche for development on contaminated sites and landfills is a prudent step to ensure that New Jersey continues to be a national leader in using contaminated sites and landfills to host solar facilities, while reducing pressure to site

²² See L. 2021 c. 169 § 4(c).

solar on the State's remaining open space. Creating a tranche exclusively for projects located on contaminated sites and landfills is meant to ensure that the CSI Program will procure the targeted number of megawatts of solar on these lands every year. In the near term, these projects may be more expensive than projects not located on contaminated land. However, as solar development continues and potential solar development sites become scarcer, this type of solar development may become more competitive with other solar projects, and savings may result from preserving the knowledge and infrastructure that currently exists in New Jersey to support such development.

Staff notes that the Solar Act of 2021 introduces a new term – “contaminated site or landfill” – to govern eligibility for solar projects located on brownfields, areas of historic fill properly closed sanitary landfills, and other marginal lands that meet the new definition.²³ Specifically, the new definition of “contaminated sites and landfills,” includes “any currently contaminated portion of a property on which industrial or commercial operations were conducted and a discharge occurred.” This definition expands upon previous definitions to cover a wider array of marginal lands that may meet the newer definition and be eligible to participate in Tranche 3.

The Act also allows the Board to consider “associated disturbed areas” around a qualifying contaminated site or landfill for eligibility to host solar facilities. Examples of associated disturbed areas would include access roads, lay-down areas and former building sites that were previously part of an industrial or landfill complex.

Additionally, Staff proposes several changes to the process that the Board and NJDEP utilize to certify a landfill as “properly closed” aimed at providing developers of projects on contaminated sites an incentive earlier in the development process and additional time for these relatively complex projects to reach commercial operation. In prior incentive programs, a landfill was required to be properly closed at the time the Board issued its conditional registration, which meant that landfills that were in the process of being properly closed (i.e., with an approved site mitigation plan, but where the work had not been completed) were ineligible to receive a conditional registration from the Board. With the new statutory definition of “contaminated site or landfill,” Staff now recommends that the Board allow landfills that are in the process of being properly closed to participate in the CSI Program, upon the condition that they commit to achieving properly closed status prior to the solar facility reaching a Commercial Operation Date (“COD”).

Specifically, Staff recommends that projects seeking to participate in tranche 3 go through an initial additional pre-qualification screening process. In addition to the requirements that apply to all projects in the pre-qualification phase (which is discussed in more detail below), the Board's solicitation manager would additionally confirm that the project is either sited on NJDEP's list of contaminated or landfill sites, or has sought and received a waiver if not on one of those lists. Once pre-qualified, the project would be permitted to compete in tranche 3 of the solicitation. This provides project developers the flexibility of locking in an incentive either before or after completing the more time consuming and costly NJDEP certification process. Solicitation winners would be notified that they were conditionally accepted into the program and would then be required to complete the NJDEP certification process, comparable to projects participating in the subsection (t) program today. Once NJDEP completed its certification process, the Board would issue an order, comparable to today's Conditional Registration orders. The Conditional Registration order would memorialize all requirements to be met before the project can receive

²³ Previously known as the subsection (t) program, named after the relevant section in the Solar Act of 2012.

post-construction certification and begin producing SREC-IIs, including completion of all post-construction paperwork.

Further, because the 36-month COD requirement only starts running once the Board issues its order post-completion of the NJDEP's analysis, developers of contaminated sites and landfills receive significantly more time to reach COD than comparable projects participating in the other tranches and receive their incentive levels earlier in the development process.

Additionally, this change will allow developers to utilize anticipated revenues from the CSI Program to help fund closure or cleanup activities. At the same time, receiving NJ-SREC-IIs would remain contingent upon receipt of final certification from NJDEP that the landfill has been properly closed or the site remediated, and that all DEP-imposed conditions have been met. Thus, a winning CSI bidder would not be eligible to receive SREC-IIs prior to satisfying the NJDEP requirements. Staff further recommends that the project's qualification life commence upon reaching COD, regardless of whether an approved closure has been received. If a project reaches COD prior to an approved closure, the qualification life will start, but the facility would not be eligible to produce SREC-IIs until the NJDEP certification is achieved.

Tranche 4: Net Metered Non-residential Projects above 5 MW

As specified in the Solar Act of 2021, net metered solar projects in New Jersey of five (5) MW or less now qualify for inclusion in New Jersey's ADI Program, and will continue to do so. Staff recommends a separate tranche for net metered projects because they have a different cost structure, already receiving some degree of subsidy, compared to wholesale projects, in the form of net metering credits. Net metering results in sales revenues that are typically higher than the wholesale price of power. By breaking net metered projects out into their own tranche, the Board would be able to award SREC-IIs to the most competitive net metered projects, while ensuring that there is still room in the program for other types of projects. Staff does not recommend further differentiation within this tranche between different types of sites being developed (i.e., no additive preference for contaminated sites or built environment projects); requiring all net metered projects to compete against each other will help ensure sufficient competition within the tranche. It is not known how many qualifying net metered projects are likely to compete in the CSI Program; Staff notes, however, that the previous Transition Incentive or "TI" Program received a robust response from net metered projects over five (5) MW. This suggests that there could be significant potential participation by large net metered projects.

Tranche 5: Storage Paired with Grid Supply Solar

The CSI Program will offer New Jersey's first incentive for storage facilities, as the Board is currently in the process of establishing an independent energy storage program in Docket No. QO22080540. The CSI Program is primarily intended to provide incentives for larger solar facilities in New Jersey; however, the Board has recognized that pairing solar with storage can provide substantial benefits to the grid. Staff has proposed to support storage in the CSI Program by offering competitively set incentives, in the form of adders, for grid supply solar projects that are paired with a storage facility.

A key element in the design of the Solar paired with Storage tranche is including a capacity adjustment mechanism to account for the fact that projects with very different amounts of storage (both in absolute terms and in proportion to the capacity of the proposed solar unit) may be competing with each other. For the purpose of storage adder bid evaluation, bids would be compared on a \$/MWh (of solar production) adder cost basis. However, the application of the

awarded adder to generated SREC-IIs will be adjusted to reflect the percentage of the solar project's MW capacity that is paired with four (4) hours of energy storage capacity, defined as the "normalized storage bid." A solar project will be considered to be 100% paired with storage if the nominal discharge capacity of the storage facility (in MWh) is four times the nameplate capacity of the solar project (in MW). So, for example, a 20 MW solar project would be considered to be 100% paired with storage if storage capacity is 80 MWh. The final storage adder will be multiplied by the percentage of the solar facility that is paired with 4 MWh of storage. In no case would the adder be multiplied by an amount greater than 100%. Therefore, a project that pairs only 50% of its solar capacity with 4-hour storage would receive an adder for each SREC-II of 50% of the adder value established in the solicitation. Because SREC-IIs can only be created by the generation of solar electricity, all bids must be expressed in terms of dollars per MWh of solar electricity generation.

Staff considered but does not recommend tranches for other project types, including public entity projects, dual-use or agrivoltaic projects, and floating solar projects.

Public entity projects

After considering the concerns raised about the difficulties faced by public entities in participating in this type of solicitation, Staff does not propose establishing a separate procurement tranche for these projects. From conversations with stakeholders, Staff learned that the primary obstacles for public entities wishing to participate in the CSI Program appear to be: 1) limited staff bandwidth to navigate the process; 2) challenges associated with the public entity procurement process; and 3) difficulty managing the uncertainty inherent in the competitive process. Staff continues to see participation by public entities in the CSI Program as desirable and commits to supporting their participation. As a threshold matter, Staff notes that there are several programs which will serve the vast majority of public entity-sponsored projects, including the ADI Program, which allows public entities to access a fixed incentive and includes a specific adder for public entities. Further, the Remote Net Metering program is specifically designed to serve public entities. At the same time, Staff notes that the CSI Program will serve only the largest public entity projects, which already entail sophisticated procurement issues. For these large net metered projects, Staff anticipates that public entities will use the existing Request for Qualification ("RFQ") process to select their development team, and then to work with that developer to submit a bid into the CSI Program. For example, public entities could secure a potential development partner and work with that partner to develop a proposal for the SREC-II procurement. Staff concurs that it is important that the procurement be structured so that it is possible for public entity projects to compete, but does not believe these concerns are best addressed by establishing a separate tranche in the procurement. It is not clear that a separate tranche would address the staffing and uncertainty obstacles identified above. However, Staff commits to continuing working proactively with public entities to ensure that they are able to successfully participate in the CSI Program.

As explained later in this order, Staff recommends that projects serving public entities be exempted from bid fees.

Dual-use projects

New Jersey has a rich agricultural heritage that must be considered and protected as the State's moves toward a carbon-free energy sector, particularly in the context of the CSI Program and the large projects it incentivizes. The Board received many comments highlighting the potential for dual-use solar facilities to achieve both goals, keeping land in agricultural use while delivering on the State's commitment to rapid development of large solar. Staff notes that the recent Dual-Use

Act directed the Board to implement a pilot program specifically incentivizing dual-use projects, working with the Secretary of Agriculture and SADC on the development of standards and practices P.L. 2021 c. 170. Staff therefore suggests that the Board use the legislatively mandated dual-use pilot program as the vehicle for moving dual-use solar forward in New Jersey. Staff anticipates that the development of the dual-use pilot program will commence in early 2023, rendering a special tranche unnecessary. Until the launch of the pilot program, dual-use projects may compete in any of the above tranches for which they are eligible on a comparable basis with other projects. Staff does not recommend creating a process by which they would be eligible to receive a higher incentive through the CSI Program.

Floating solar projects

Several commenters argued for the inclusion of floating solar in one (1) of the specialized tranches or for creation of a separate floating solar tranche. However, it is Staff's understanding based on its consultation with NJDEP that the environmental impacts of floating solar are still being studied and that a number of site-specific factors must be considered in order to determine whether a floating solar facility is beneficial to the environment, including the presence or absence of marine and avian life. According to NJDEP, certain floating solar applications may constitute a beneficial land use under specific circumstances, but that a blanket approach is not warranted. Based on this recommendation, Staff recommends that the Board should not assume that all floating solar facilities are beneficial to the environment, and thus does not recommend creation of a separate tranche to provide special treatment. Staff recommends that floating solar projects be eligible to compete in the Basic Grid Supply tranche.

Project Pre-qualification and Maturity

Considerations

Pre-qualification is intended to eliminate projects that cannot reasonably be expected to be successfully completed within the solicitation's Commercial Operation Deadline timeline. It is necessary to select the proposed projects with the lowest SREC-II costs that also have a reasonable likelihood of successful and timely completion. With these project qualification and maturity requirements, Staff seeks to strike a balance between awarding sufficiently early in the development process to avoid undue development risk for developers and supporting projects that can be successfully built and produce SREC-IIs within a reasonable timeframe. Pre-qualification requirements also serve to confirm that projects are eligible to bid into the tranche(s) in which they apply.

The proposed pre-qualification process would require developers to submit a preliminary set of documents to the Board's solicitation manager that addresses issues such as which tranche or tranches the project qualifies, compliance with project maturity requirements, and other similar items. The pre-qualification window is scheduled to open on February 1, and would remain open until bids are due. Developers would be free to submit their pre-qualification paperwork to the Board's solicitation manager, who would then review the documents, identify any deficiencies, and the developer would have opportunity to cure until such time that the bids are due. Deficiencies in the application at the time bids are due, will result in projects not being allowed to participate in the solicitation.

For grid supply projects, queue position, while it is not a perfect indicator of remaining time in the queue or certainty of project completion, is well-suited to the pre-screening process in that it is a clear benchmark that is transparent to both bidders and evaluators. Using pre-qualification

through queue position avoids the need to engage in a more complex and potentially subjective process relating to permitting, securing rights of way, or evidence of public support.

In recommending the required position in the PJM queue that will be needed to pre-qualify, Staff has weighed the benefits of a high degree of certainty in the interconnection process versus the desire to provide financial certainty to developers earlier in the development process. In general, requiring a more advanced PJM queue position increases the likelihood that the project will reach commercial operation, while a less advanced PJM queue position, all other factors being equal, has a lower likelihood of reaching commercial operation.

Many stakeholders raised concerns regarding the uncertainty faced by grid supply projects about the timeline to interconnect in PJM. While stakeholders largely agreed that the state of the PJM interconnection process presents challenges to prospective CSI Program projects, recommendations on how to accommodate these timelines in the CSI Program design were highly mixed. One set of stakeholders noted that requiring a project to be at an advanced stage, such as having a completed Facilities Study, would result in a high degree of certainty regarding interconnection costs and remaining timeline and an ability to commence operation within approximately two (2) years.²⁴ However, several stakeholders opposed requiring a project to be at such an advanced stage, noting that the current PJM queue delays may mean that such a requirement would prevent prospective projects from qualifying for the CSI Program for several years. Finally, many stakeholders noted that that this program design element will be greatly impacted by the ongoing PJM queue reform efforts.

Staff and its consultant analyzed the timing of each of the three PJM studies, the point at which attrition of projects has historically taken place, and the number of projects currently in the queue that would be eligible to compete if a solicitation were held in the near future, under each scenario. The analysis showed that the greatest uncertainty in timing has recently occurred before the completion of a Feasibility Study, and that the process of moving through the queue after this milestone has been reasonably predictable. At the same time, more advanced queue positions provide more certainty for developers on the costs of interconnection.

As of November 2022, there are over 1,500 MW of New Jersey solar projects active in the PJM queue and another 300 MW have completed the queue and are in the pre-construction engineering and procurement phase.²⁵ Projects currently in the queue with completed Feasibility, System Impact, and Facilities studies should be able to finalize interconnection agreements between 2024 and 2026, with some variation, based on when the projects entered the PJM queue. Projects not currently in the queue can apply to enter using the new process, if approved, in mid-2023 and their interconnection agreements may be completed in 2027.

Staff's analysis suggests that there will sufficient liquidity in the market to ensure adequate competition in the CSI Program. To maximize the amount of competition, given the current level of congestion in the PJM queue, Staff recommends that the Board seek to expand the number of

²⁴ Staff notes that PJM has proposed to change various parts of its study process and that those reforms have recently been approved by the Federal Energy Regulatory Commission ("FERC") in FERC Docket No. ER22-2110-000. While this order references the existing names of the various studies, as discussed below, PJM is planning to change several of studies and Staff explains how its existing rules will map to the new studies names below.

²⁵ Includes Energy Capacity of all solar and solar + storage projects active in the PJM queue with projected in-service dates 2021 and beyond.

projects qualified to receive pre-qualification and therefore comes down on the side of recommending that projects must provide a completed Feasibility Study. As of November 2022, about 550 MW of New Jersey solar capacity active in the queue had completed a Feasibility Study. When combined with the additional 300 MW of unconstructed solar capacity that has completed the queue, there is currently about 850 MW that would meet this maturity pre-qualification requirement. Additionally, Staff believes that combining the requirement for a bid fee with a PJM queue position requirement, will result in a higher degree of project maturity than either requirement separately, and the confidential price caps will help protect against excessive rates.

PJM convened an Interconnection Process Reform Task Force (“IPRTF”) in April 2021 to address the issues facing the PJM queue and the recommended reforms that resulted have recently received approval by the FERC. The PJM queue reform process seeks to reduce the overall time projects are in the interconnection queue and increase certainty for cost responsibility. Staff notes that while PJM will continue to use a three-phased study process, the studies are changing. PJM explained that it is replacing the Feasibility Study process with a new “Phase I” study process, which involves a more sophisticated version of the Feasibility Study, which, according to PJM “...is similar to the feasibility study in that it identifies high-level reliability issues caused by the proposed projects. It expands to include performance issues identified by relevant transmission owners to provide a cost estimate earlier in the interconnection process encouraging speculative projects to drop out sooner.” Similarly, PJM is proposing to replace the System Impact and Facilities Studies with the roughly equivalent “Phase II” and “Phase III” study process, respectively. Staff believes that in the future, this new study process will provide developers a better line of sight to reaching commercial operation. For the purposes of registration into the CSI Program, however, Staff recommends that the Board accept either a completed Feasibility or Phase I study and commits to carefully monitoring the evolving situation with the PJM queue.

For projects not interconnecting via the PJM interconnection process (including grid supply projects interconnecting at distribution voltage or PURPA-eligible projects that qualify to sell energy directly to the utility under a pre-established rate), one (1) stakeholder recommended that the projects have Part 1 Interconnection Application executed, signifying the distribution utility’s approval to commence construction.

In addition to prequalification requirements, fees or deposits for projects applying for state subsidies are frequently used as means of ensuring that a bid is serious, incentivizing bidders to follow through on project commitments and (in some cases) helping to defray the cost of administering state subsidy programs. Commenters noted that fees and escrow are useful to discourage speculative projects but noted that excessive requirements could hurt development. In determining the structure of the fees, one (1) stakeholder advocated for flat fees (independent of project size), one suggested a fee cap, while others proposed \$/kW fees or escrows. Stakeholders generally supported this bid fee, as it lies on the lower end of the range of fees imposed in similar procurement processes in other states, and its purpose is mainly to discourage bids for projects that have a low likelihood of reaching commercial operation.

Recommendations

After consideration of relevant factors and input from stakeholders, Staff recommends a pre-qualification step, to be conducted before a project will be allowed to bid into the solicitation.

As part of pre-qualification request, a project must provide evidence that they meet one (1) of the following criteria:

- (i) demonstrated completion of a PJM Feasibility Study or new Phase I Study, or
- (ii) evidence of an executed Part 1 Interconnection agreement.

In addition, Staff recommends that projects be required to demonstrate their qualification to participate in the tranche to which they wish to apply. Evidence of qualification includes but is not limited to:

1. designation of tranche that the project intends to bid into;
2. solar project capacity in megawatts or storage discharge capacity in MWh;
3. a site plan signed and sealed by a licensed professional engineer, where a “site plan” means a development plan of one or more lots on which is shown: 1) the existing and proposed conditions of the lot, including but not necessarily limited to topography, vegetation, drainage, flood plains, marshes and waterways, any contaminated sites or landfills; 2) the location of all existing and proposed buildings, drives, parking spaces, walkways, means of ingress and egress, drainage facilities, utility services, landscaping, structures and signs, lighting, screening devices; and 3) any other information that may be reasonably required in order to make an informed determination on the requirements for the solicitation tranche;
4. evidence of qualification for the tranche for which the project is intending to bid, including, but not limited to: geographical information systems (“GIS”) coordinates, address, project address, and number of acres proposed for development;
5. evidence of compliance with relevant Board approved siting criteria, including a waiver if required;
6. link(s) to one (1) or more PJM Feasibility or Phase I studies or copy of Part 1 interconnection agreement;
7. for projects with a proposed installation density greater than 300 kW per acre, a statement from a licensed professional engineer confirming feasibility of the installation density based on proposed design parameters such as module quantity, size and efficiency, tilt, azimuth and inter-row spacing;
8. for projects on contaminated sites and landfills, a reference or link to the location from the “known contaminated sites”²⁶ or “landfills in NJ”²⁷ list, and estimated size of area designated as “contaminated site” or “properly closed sanitary landfill”;
9. for projects on contaminated sites and landfills, an NJDEP permit readiness checklist;
10. for a storage facility paired with grid supply solar, description of the storage technology, and reference to the associated solar facility.

Staff recommends that projects intending to construct on covered agricultural land only achieve prequalification if there is room under the regulatory caps for development of the specific project. Additionally, projects that intend to construct on land categories where a waiver is required will need to obtain the waiver from the Board as a pre-registration requirement as part of point 5

²⁶ The Known Contaminated Sites List for New Jersey are those sites and properties within the state where contamination of soil or ground water has been confirmed at levels equal to or greater than applicable standards. This list of Known Contaminated Sites may include sites where remediation is either currently under way, required but not yet initiated, or has been completed and addressed via an Institutional Control.

Source: Known Contaminated Site List for New Jersey (Envr_NJEMS_KCSL) (Web Mercator ArcGIS Online Service) vector digital data NJDEP, available at:

<https://www.arcgis.com/sharing/rest/content/items/b167bb2ae09c43f8ab9e954700be45d9/info/metadata/metadata.xml?format=default&output=html>

²⁷ <https://www.nj.gov/dep/dshw/lrm/landfill.htm>

above. Further details on the caps on agricultural land and the waiver process are provided in the Siting section of this order.

Finally, Staff recommends that projects be required to pay a \$1,000 per MW, non-refundable solicitation participation fee with funds generated to be used to offset administrative costs of the CSI Program. Staff further recommends that projects benefiting public entities be exempt from the bid solicitation fee.

The pre-qualification will be conducted by the CSI solicitation manager retained by the Board, and the required program documents and resources as shall be necessary for the operation of the CSI solicitation, including, but not limited to: creation of a new bid registration portal for the CSI procurement, updates to the NJCEP website, procurement forms and checklists will be made available through the Clean Energy Website. Staff anticipates conducting one or more workshops with interested parties before opening the bid registration portal.

Requirement for Commercial Operation Date

Considerations

COD requirements establish the allowable length of time between when the notice of conditional registration is issued, and when the unit must be in commercial operation. In order to achieve commercial operation, the project must not only be fully constructed, but it must also have completed the full PJM interconnection process, including construction of any required interconnection upgrades. It is necessary to look at project maturity requirements and COD deadlines in conjunction, since the further in the development cycle a project needs to be to pre-qualify, the shorter the appropriate time to commercial operation. Staff understands that the PJM interconnection process has historically been subject to delay. It is unknown whether adoption of the proposed queue reform will fully address problems with delay in the queue. On the other hand, projects previously granted conditional certification under the subsection (t) process have previously received a deadline of two (2) years, indicating that developers have experience developing complex projects on this timeline.

Most initial stakeholder feedback supported a COD deadline of two (2) years or less from SREC-II qualification award. Some commenters proposed a longer timeframe for projects on contaminated land or landfills, due to complex permitting processes. Because of the timing of the proceeding, to the best of Staff's knowledge, these comments did not reflect PJM's proposed changes to its queue.

Staff notes that projects qualifying for tranche 3 will, after the conditional award of SREC-IIs, still need to apply to the Board for conditional registration, following a process similar to the previous certification for subsection (t). The Board will consult with NJDEP in making a final determination on the eligibility of these projects, prior to allowing them to conditionally register. While the determination will result in a later confirmation of the award, the intermediate time allows projects to progress in their development while having certainty about the solicitation outcome and value of the SREC-II.

Recommendations

After taking into consideration both the proposed PJM queue reform and project timelines, Staff recommends that all CSI projects receive a COD deadline of 36 months after receiving notice of conditional registration in the Program. Staff believes that the 36-month requirement is consistent

with promoting solar facilities that are more advanced in the interconnection process and therefore likely to begin construction and come on line sooner. Staff recognizes that a 36-month requirement likely requires that project developers undertake significant development efforts prior to competing in the CSI Program. Staff notes that PJM anticipates that an entirely new project will take approximately two (2) years to receive an Interconnection Services Agreement under the process recently approved by FERC, after PJM completes its transition to its new rules. Given that network upgrade construction can take multiple additional years, this timeline is consistent with the PJM interconnection queue maturity requirements proposed above. In all cases, a selected CSI project must receive permission to operate from the relevant EDC and submit a post-construction certification packet as defined below prior to the expiration date indicated in the notice of the conditional registration.

Staff recommends that projects that miss their COD deadline without receiving an extension, or that receive an extension and miss their extended COD deadline, lose their SREC-II qualification as well as any eligibility to construct solar on farmland that may apply. Such projects would be eligible to compete again in subsequent procurement rounds without advantage or disadvantage, on equal footing with other projects; however, Staff recommends that the Board require projects that have previously received a CSI award to wait at least one (1) CSI cycle after their COD deadline expires before resubmitting the same, or substantially similar, project into subsequent CSI years to prevent gaming.

If a project is not selected in the CSI Program, any waiver obtained would remain valid for five (5) years, after which it would be necessary to reapply for a waiver.

With respect to changes in capacity size, Staff recommends that the same stipulations apply to the projects awarded under the CSI Program as currently exist for the ADI Program. If, after submittal of an initial registration package, an increase in the facility's generating capacity is planned of up to 20 percent or 25 kWdc, whichever is smaller, the registrant would be required to notify Staff following the instructions provided on the New Jersey Clean Energy Program ("NJCEP") website. Facilities would not be permitted to increase their generating capacity by more than 20 percent or 25 kWdc, whichever is smaller. Facilities may, however, decrease their capacity by any amount.

Bid Process

Staff recommends that, after pre-qualification, CSI-eligible facilities be allowed to submit a bid for an SREC-II award, specified in dollars per MWh of solar electricity production. Developers can also elect to forego an incentive altogether, in which case they will be allowed to conditionally register the project with the CSI Program registration manager upon announcement of the procurement awards. Capacity of non-incentivized projects would not be counted against the MW procurement targets specified later in this order.

Staff recommends that to compete in tranche 5, a solar plus storage project will need to provide a two-part bid: a solar-only SREC-II price (eligible to compete in tranches 1, 2 or 3) and a storage adder price. The proposed storage adder price will then be considered separately in the storage tranche for award of a storage adder. Staff believes that this two-tiered approach will encourage projects to consider the addition of storage by ensuring that projects adding storage are not penalized in the selection process by the additional costs associated with storage. This tranche will also assist in gathering information about the cost to developers of incorporating storage into their solar projects. Staff further recommends that developers be allowed to specify whether or not the solar bid should stand as a stand-alone bid in case the storage bid is not awarded.

Auction Procedure

Considerations

Projects may compete in all tranches for which they are eligible; however, each project can bid and be awarded SREC-IIs only once. As a result, the order in which tranches are considered is important. Staff's consultant modeled two (2) options regarding the order of evaluation of tranches given MW procurement targets: one in which the first tranche considered is Basic Grid Supply (Method 1) and a second in which the first tranches considered are the specialized tranches of Grid Supply on the Built Environment and Grid Supply on Contaminated Sites and Landfills (Method 2):

1. In the initial Basic Grid Supply evaluation method (Method 1), all grid supply projects (that is, Basic Grid Supply, Grid Supply on the Built Environment, and Grid Supply on Contaminated Sites and Landfills) would be eligible to compete up to the projected annual SREC-II MW target for the Basic Grid Supply tranche. The lowest-priced projects would receive awards; some of these awards might go to competitively-priced projects in specialized tranches—for instance, to projects otherwise eligible to compete in the Grid Supply on the Built Environment tranche. These projects, having been awarded SREC-IIs in the first round under the Basic Grid Supply tranche, would then be removed from consideration in the specific Grid Supply on the Built Environment tranche. As a result, other, less-competitive projects in that tranche would be able to qualify for SREC-IIs in the solicitation run specifically for Grid Supply on the Built Environment. The result might be that more projects in preferred categories would be awarded, but at a potentially higher SREC-II costs for the specialized tranches. These costs might be offset by lower overall procurement costs for Basic Grid Supply.
2. In Method 2, the specialized tranches of Grid Supply on the Built Environment and Grid Supply on Contaminated Sites and Landfills would be evaluated first [the order in which these two (2) tranches are evaluated does not matter]. The lowest-cost projects from each would be selected, up to the tranche MW target, and selected projects would be removed from further consideration. All remaining projects from these tranches and all Basic Grid Supply projects would be considered next in the Basic Grid Supply tranche. Because the lowest-cost projects from the specialized tranches would have already been removed from consideration, however, it would be less likely that projects from specialized tranches would be selected in the Basic Grid Supply round.

In their comments, stakeholders were largely supportive of allowing projects in Tranche 2 and 3 to compete with Tranche 1 projects, although most commenters were doubtful that the more specialized projects would be competitive with basic grid supply projects. Some commenters expressed concern that there might not be enough competitively priced bids for the more specialized tranches to reach procurement targets.

In a modeling analysis of these two (2) bidding methods,²⁸ Staff's consultant determined that the

²⁸ See Daymark, New Jersey Competitive Solar Incentive ("CSI") Program Daymark/Staff Straw Proposal, nj.gov/bpu (Apr. 26, 2022), <https://nj.gov/bpu/pdf/publicnotice/20220426%20Consolidated%20Straw%20Version%2013%20with%20Notice.pdf>

overall cost result for Method 1 is a slightly higher SREC-II price but that the increase is modest, because higher prices in the specialized tranche procurements are offset by a lower price for Basic Grid Supply. Method 1 allows the basic grid supply tranche to include projects sited on preferred land uses if they are cost-competitive with greenfield projects. Actual price and quantity effects of tranche evaluation order would depend on the comparative profile of the projects that bid into the process. If contaminated sites and landfills, and built environment projects are all significantly more expensive than most basic grid supply projects, evaluation order would end up having no impact on the final portfolio of selected projects. On the other hand, if there is a wide cost spread for projects within the Contaminated Sites and Landfills, and Built Environment tranches, adoption of a Method 1 approach could tend to raise overall procurement costs.

Recommendations

Since Method 1 increases the likelihood of greater procurement from preferred tranches, including projects on the built environment and contaminated sites and landfills, Staff recommends the use of procurement Method 1. As discussed above, the lowest cost projects would be selected to fill Tranche 1: Basic Grid Supply, regardless of whether those projects would qualify for another grid supply tranche. Once the Basic Grid Supply tranche is filled, the Board would next select the lowest-cost qualified remaining projects to fill Tranche 2: Grid Supply on the Built Environment, and Tranche 3: Grid Supply on Contaminated Sites and Landfills. If MW targets for any tranche are not met, Staff recommends that the procurement administrator report to the Board so that the Board may, at its discretion, choose to award additional MWs in other tranches to reach overall procurement targets.

For tranche 5 procurement, Staff recommends that projects will first be considered as solar-only projects in the appropriate tranche. Only storage bids associated with grid supply projects that receive an SREC-II award will be evaluated as part of tranche 5.

Award Process

The Solar Act of 2021 specifies that “[a]t the end of each bidding round, the board shall rank all bids received based on bid price, or ... based on bid price within each category.”²⁹

Based on this directive, Staff recommends that all projects be subject to the pre-qualification requirements for the specific tranche, and, once accepted into the solicitation, compete on price only. Within each tranche, winning bids will be determined by ranking the offers in terms of proposed price per SREC-II and selecting the lowest-priced offers.

Staff recommends that awards for each tranche proceed through the last project that does not exceed the procurement target for a given tranche and if a final award cannot be made that will exactly meet a procurement target, Staff recommends that the Board exercise its discretion in deciding whether the incremental project or projects will benefit New Jersey sufficiently to warrant exceeding the targets. If the total combined acreage of proposed solar development exceeds any of the limits for solar on covered agricultural land specified later in this order, the award process would continue, but projects that would breach the limits will be ignored and no projects that would cause a limit to be exceeded will be awarded. Instead, higher-priced projects seeking an incentive through the solicitation, that would not cause any limit for solar on agricultural land to be exceeded would be selected.

²⁹ See L. 2021 c. 169 § 6(f)(1).

If two (2) projects are bid with the same price and either can be awarded without exceeding the procurement target but awarding both would exceed the procurement target, Staff recommends that the Board exercise its discretion in selecting one (1) or both of these projects and making the award or awards.

Staff recommends that storage bids be ranked by “normalized storage bid,” defined as the bid into the CSI Program, calculated in dollars per megawatt-hour, which corresponds to an incentive for a storage facility capable of discharging the equivalent of four hours of the nominal electricity generation capacity of the associated solar facility. Any fraction of four-hours of storage, if selected, would receive a proportional incentive. This approach allows for the selection of any size installation of storage up to four (4) hours of the nominal solar capacity, while still providing for selecting the lowest price storage projects.

Staff further recommends that awards for storage be in the form of a normalized storage bid, and that the final value of the incentive adder will be calculated after both the solar and storage installations have been constructed and the capacity of both is confirmed as part of the post-construction certification package.

Confidential Price Caps

There is considerable uncertainty about how many qualified projects will elect to participate in the first solicitation. In order to reduce price risk for ratepayers, Staff recommends that the Board reserve the right to establish by order confidential, pre-determined price caps for any or all tranches prior to the solicitation. If the Board determines that an award would breach a price cap, further procurement in the affected tranche or tranches would not be undertaken and procurement would cease regardless of whether the targeted number of megawatts in that tranche or tranches has been met.

Staff notes that the price caps are specifically intended to serve as a backstop against excessive awards in cases of low competition. Staff does not anticipate that the price caps will impede the normal price discovery that is part of the competitive solicitation process.

SREC-II Value Determination

The Solar Act of 2021 specifies that incentives for solar projects in New Jersey will be provided through the creation and distribution of solar renewable energy certificates known as “SREC-IIs.” However, there is no requirement for SREC-IIs to have the same value for like projects. In principle, after deciding which projects qualify, there are two (2) ways to determine the value of SREC-IIs: through a single clearing price or a pay-as-bid approach.

Staff recommends a pay-as-bid approach for CSI procurements. Several stakeholders expressed support for this approach. Staff bases this recommendation on considerations of the payment structure’s interaction with the proposed tranche system and the impact on bidding behavior. In a single clearing price approach, the value of SREC-IIs received may vary greatly depending on the award tranche—an effect that may create unintended bidder behavior incentives. For a more detailed discussion of the analysis, please refer to the Daymark report in Appendix B.

Staff recommends that the value of the storage adder be determined by taking the discharge capacity of the installed storage facility in MWh, dividing the resulting number by the nominal electricity generation capacity of the installed associated solar facility, measured in MW, dividing

the resulting number by four, and then multiplying this with the normalized storage bid. Written as a formula, the SREC-II adder would be:

$$SRECI\text{I Adder} = \text{Normalized Storage Bid} * \frac{\text{Storage Discharge Capacity}}{\text{Associated Solar Facility Capacity} * 4 \text{ hours}}$$

As indicated previously, the adder would be paid based on the solar electricity generation of the associated solar facility. In no case would the adder exceed the value of the normalized storage bid, i.e., only up to four (4) hours of storage are eligible for an incentive under the CSI Program.

Since the storage adder is provided for energy produced by the solar facility, there are no inherent safeguards to prevent continued payments if the storage is no longer available. Staff therefore recommends that the storage adder be susceptible to revocation, and the value of the SREC-II of the associated solar facility adjusted to compensate for overpayment of any SREC-II adders, if the Board determines that evidence is lacking that the qualified storage facility remains operational.

SREC-II Payment Structure

Considerations

During the stakeholder proceeding, several industry representatives expressed the desire for consideration of an Indexed REC. With Indexed RECs, a project would receive SREC-II payments with a value that would vary as a function of a bid strike price and indices linked to actual outcomes in the energy and capacity markets. The higher the prices in the energy and capacity markets, the lower the SREC-II payments would be. In theory, the Indexed SREC-II approach would lead to lower costs for ratepayers by providing greater revenue certainty for project developers. This greater certainty would, in theory, enable them to receive better project financing terms, and thus enable them to make lower bids in the solicitation.

Staff's consultant conducted an in-depth evaluation, including a Monte Carlo simulation, of the likely price outcomes and differences between a Fixed and Indexed REC structure. Refer to the Daymark report in Appendix B for a detailed discussion of the analysis. This analysis revealed that while Indexed SREC-IIs would present savings to ratepayers in most modeled scenarios, the difference is relatively small. On the other hand, the model makes the implicit assumption that the overall market structure will remain relatively static. In the light of current spikes in renewable construction prices, the evolving regulatory landscape, and the accelerating energy transition, this assumption may prove inaccurate. If the trends noted do produce a more dynamic market, Indexed RECs would increase the risk to ratepayers.

Stakeholders presented mixed views, with most industry representatives advocating for Indexed SREC-IIs to lower development risk, asserting that this would lead to lower prices; Rockland Electric Company ("RECO"), Rate Counsel, NJR Clean Energy Ventures ("NJRCEV"), and Jersey Central Power & Light Company ("JCP&L") objected to an Indexed SREC-IIs, citing risks to ratepayers.

Several stakeholders expressed a preference for a longer SREC-II term of 20 instead of the proposed 15 years. As a result, Staff and its consultant conducted an analysis, modeling the likely effects of different values of qualification life. The results showed only a limited price difference between a 15- and 20-year term, because of the relatively low net present value of incentives in the later years. A minor point is that keeping the qualifying life the same between

the ADI and CSI Programs would reduce administrative burden. Finally Staff considered whether the new program would warrant a deviation from previous Board practice of establishing incentives administratively, rather than through a contract mechanism. Stakeholder input on this point was mixed. A consideration was that the establishment of appropriate contracts would be time-consuming, and therefore likely delay the implementation of the CSI Program.

Recommendation

After full consideration of both the Fixed and Indexed payment structures, Staff recommends a Fixed SREC-II because of the greater certainty it offers to ratepayers.

In addition, Staff recommends a 15-year qualifying life for the CSI SREC-IIs, and continuation of the practice of administrative incentives for the CSI Program.

Procurement Frequency

Considerations

The Solar Act of 2021 requires that solicitation rounds “occur at least as frequently as once every 18 months.”³⁰ In setting a proposed procurement frequency, it is desirable to make the process frequent enough that there are multiple entry points for developers. On the other hand, minimizing administrative costs and maximizing the opportunity for robust competition in each procurement are also important considerations. Commenters generally supported running the CSI Program annually through an independent solicitation administrator.

Recommendations

After consideration of these factors, Staff recommends that solicitation rounds be held annually. Because of the uncertainties related to the timing of the PJM queue process reform, Staff further recommends that the Board reserve the right to adjust the timing of future procurements to better align with milestone dates in the interconnection queue process.

Initial Procurement Targets

Considerations

The Solar Act of 2021 mandated that New Jersey’s competitive solar solicitation process result in contracts of at least 300 MW per year, on average, through 2026. The recommended tranche system is intended to ensure that the overall procurement will include at least some solar in certain targeted categories. The recommended procurement targets are intended to provide the best possible value for New Jersey consumers.

Two (2) stakeholders commented on the issue of MW tranche targets and suggested that targets should include more than 130 MW of greenfield grid supply, 65 MW of “built environment” supply, 65 MW of supply on contaminated sites and landfills, and 40 MW of non-residential net energy metered supply greater than 5 MW. In addition, Staff received a comment on the distinction between awarded projects and constructed projects, urging that the 300 MW target should be

³⁰ See L. 2021 c. 169 § 4(c).

considered to apply to constructed projects, and that it is not a maximum. The commenter noted the possible delays associated with PJM queue reform as a reason for soliciting additional capacity over the next five (5) years, arguing that doing this “would also send a clear signal to the solar industry that the state is committed to aggressively building out renewable capacity to achieve greenhouse gas reduction goals which will prompt a flurry of development activity.” Staff agrees with the sentiment expressed in these comments, but at the same time is concerned that currently there may not be a large pool of projects that meet the maturity requirements and would be eligible to compete. It will take time to build the pipeline of projects, and concurrently the situation around interconnection is expected to improve, both of which argue for an initially conservative approach with room for further expansion later.

Recommendations

For the initial procurement, Staff recommends the following per-tranche MW procurement targets, with the total procurement summing to 300 MW for the first year:

Tranche	Target
1. Basic Grid Supply	140 MW
2. Grid Supply on the Built Environment	80 MW
3. Grid Supply on Contaminated Sites and Landfills	40 MW
4. Net Metered Non-residential Projects above 5 MW	40 MW
5. Storage Paired with Grid Supply Solar	160 MWh

The storage tranche of 160 MWh corresponds to a 4-hour storage pairing of 40 MW of solar. Staff confirms that the 300 MW goal should be interpreted as projects reaching COD.

First procurement Timing

Considerations

For many types of projects, the CSI Program will provide incentives for the first time in New Jersey. There has been some evidence of pent-up demand for larger-scale solar development, which would argue for a first procurement soon after the implementation of the Program. On the other hand, developers will need some time to pre-qualify and develop their bids. In making its recommendation, Staff relies largely on stakeholder comments, which advocate for the Board to conduct the first solicitation “expeditiously” and “within 3 to 6 months”.

Recommendations

Staff recommends that the pre-qualification window be opened on February 1, 2023, and the portal for bid submission be closed on March 31, 2023 at 11:59:59 PM.

Staff also recommends that for all successful bids, the bidding party, bid price, and any covered agricultural land allocation be made public at the time of announcing the awards.

Closure of the interim Subsection (t) section of the ADI Program

The interim subsection (t) section established under the ADI Program was intended to provide a bridge for eligible projects between the closure of the TI Program and the opening of the CSI Program. With the establishment of the CSI Program, grid supply projects that seek to be located

on contaminated sites and landfills will have an incentive option through the Contaminated Sites and Landfills Tranche. Given the availability of the CSI Program, Staff recommends that the Board close the interim subsection (t) section of the ADI Program on the effective date of the order establishing the CSI Program.

CSI Program Registration

Program Registration Process and Requirements

After receiving an award in the solicitation, a project seeking incentives under the CSI Program will be required to submit a complete CSI Program registration. The project will receive a notice of conditional registration prior to beginning construction on the facility (the registration process is described below).

Staff proposes to create a new registration process and portal for the CSI Program, in coordination with a CSI Program registration manager. CSI-eligible facilities would only be allowed to register for SREC-IIs upon award of a bid, pursuant to the process laid out in this order. All forms and instructions regarding the CSI Program registration process would be posted on the Board's NJCEP website at www.njcleanenergy.com. Staff recommends that the Board direct the CSI Program registration manager to open the CSI registration portal to new registrations at 12:00:00 a.m. on April 15, 2023.

With the exception of projects proposed on contaminated sites and landfills, bidders granted a CSI award will have 30 days following the Board Order announcing the award to register their CSI-eligible facility with the Board. Projects on contaminated sites and landfills will need to obtain Board approval for conditional registration, which will only be granted upon a determination of eligibility. Staff will consult with NJDEP for this determination, following a process similar to what has been used for projects under subsection (t). Projects on contaminated sites and landfills will have 30 days to register upon this determination of eligibility, which has historically taken approximately one (1) year, and will therefore need to reach COD approximately four (4) years after receiving the CSI award.

Prior to beginning construction on a CSI-eligible facility, developers or project owners would be required to submit a complete registration package. Staff recommends that the registration package require the inclusion of:

1. a registration form;
2. a description of the project according to the specific tranche for which the project is qualified, including: type of proposed installation, MW or MWh capacity of project, GIS coordinates, address, project address, link to PJM feasibility study, and number of acres proposed for development;
3. a contract between the primary installer or the third-party owner, as applicable, and the bidder or customer of record;
4. a site plan signed and sealed by a licensed professional engineer, as defined in the pre-qualification section of this order, showing all proposed and installed ADI and CSI-eligible facilities;
5. for net metered facilities, a utility bill showing the site host's name, address, and electric tariff;
6. electrical and building permits or documentation that applications for electrical and building permits have been submitted to the relevant municipality;
7. for net metered facilities, an executed Part 1 interconnection agreement;

8. a Milestone Reporting Form; and
9. evidence of the project's accepted bid into the CSI program;
10. for projects to be located on contaminated sites or landfills, developers must apply to the Board for conditional registration of projects seeking eligibility for SREC-IIs using the form to be located on the Board's NJCEP website at www.njcleanenergy.com.
11. For storage paired with grid supply solar, MWh of proposed storage facility, description of the storage technology, and project ID or confirmation of solicitation of paired solar project must be included.

Staff recommends that registration packages submitted to the CSI Program be reviewed following the same general process developed under the ADI, TI and legacy SREC Programs. Specifically: registration packages would be reviewed by the CSI Program registration manager. The registration manager would verify that the proposed project is eligible to participate in the CSI Program, and determine whether the registration package is complete, incomplete, or deficient. Registrations that are deemed incomplete due to a minor deficiency, as defined at N.J.A.C. 14:8-11.5(f)(1), would be notified of the deficiency by the CSI Program registration manager and granted seven (7) business days to cure the deficiency. Registrations that are deemed incomplete, have a major deficiency as defined at N.J.A.C. 14:8-11.5(f)(2), or fail to correct minor deficiencies within the time allowed, would be rejected.

Registrants that submit a complete registration package or that cured all minor deficiencies in the time allowed, and that meet the eligibility and qualification requirements for a CSI project, would be issued a notice of conditional registration ("Notice") by Staff or the CSI Program registration manager.

Staff recommends that the Notice indicate under which tranche the facility was awarded. The Notice would state that, if the solar facility is constructed as described in the initial registration package, Staff or the CSI Program registration manager will issue a New Jersey State Certification Number for the facility upon its receipt of a complete post-construction certification package and its passing the program inspection.

The Notice would include the following:

1. An expiration date occurring on the 36-month anniversary of a registrant's notice of conditional registration in the CSI Program.
2. A notification that the facility must receive permission to operate from the relevant EDC or PJM Interconnect LLC and submit a post-construction certification packet as defined at proposed N.J.A.C. 14:8-11.5(j) prior to the expiration date indicated.
3. A reference to the applicable Board Order that confirms the facility's eligibility and the value of the incentive.

After issuance of the Notice, construction of the solar facility as described in the initial registration package may begin.

As stated earlier, after submittal of an initial registration package and issuance of a Notice, projects would be allowed to increase the project's generating capacity by up to 10 percent or 25 kWdc, whichever is less, contingent on notifying the CSI Program registration manager following the instructions provided on the NJCEP website.

Program Deadlines and Post-construction certification

Staff recommends that all CSI projects be assigned a conditional registration that expires 36 months from the date of issuance of the notice of conditional registration. Staff recommends that the Board allow projects to request one (1) six-month extension to their registration expiration date. Extension requests would be required to be submitted to the CSI Program registration manager on or before the expiration date noted in the notice of conditional registration. Any extension request would be considered by the CSI Program registration manager on a case-by-case basis, based on consideration of extenuating circumstances for the delay in completing the facility, including interconnection-related delays, evidence that the facility has made progress towards completion or is continuing to move through the queue, and the likelihood of timely and successful completion of the solar facility. The CSI Program registration manager would also consider whether the registrant has submitted timely quarterly milestone reporting forms. If the extension is granted, the CSI Program registration manager would provide a new registration expiration date, six (6) months from the expiration of the original conditional registration.

All projects conditionally registered in the CSI Program would be required to receive permission to operate through the PJM Interconnect LLC process or from the relevant EDC, as appropriate, and to submit a post-construction certification package prior to the expiration date indicated in the notice of conditional registration (including any extensions that may have been approved).

Staff recommends that the post-construction certification package be developed by Staff and the CSI Program registration manager and be made available on the Board's NJCEP website, and contain requirements, including:

1. A final "as built" technical worksheet, detailing the technical specifications of the completed solar electric generating facility and/or storage facility, including any changes from the technical worksheet submitted as part of the initial registration package;
2. Digital photographs of the site and the completed solar facility;
3. An estimate of the electricity production of the solar facility;
4. Where applicable, documentation of compliance with all applicable Federal, State, and local laws, including eligibility for any tax incentives or other government benefits; and
5. A copy of the EDC or PJM approval to interconnect and energize the facility.

Following submission of a post-construction certification package, all projects would be selected for an inspection by the CSI Program registration manager.

If the post-construction certification package demonstrates that all program requirements have been met, and the facility either passes an inspection, Staff or the CSI Program registration manager would assign a New Jersey State Certification Number to the solar facility for use in obtaining SREC-IIs from PJM-EIS Generation Attribute Tracking System ("GATS"). The Certification Number would identify the facility's solicitation tranche, based on the completed facility type and size information certified in the post-construction certification package, and a reference to the applicable Board Order that specifies the value of the incentive.

Solar electric generation facilities that have received a Notice for SREC-IIs would retain eligibility to remain in the CSI Program until the expiration or cancelation of their CSI registration. Any facility that does not commence commercial operation within the time provided in its CSI

registration (by the registration expiration date), or that commences commercial operation but does not submit a post-construction certification package within the time provided in its CSI registration (by the registration expiration date), would no longer be eligible for the CSI Program and its registration will be canceled. After a registration is cancelled, the project will no longer be counted towards solar development on covered agricultural land, for the purposes of calculation of the Statewide threshold or county concentration limit, as applicable.

CSI-Eligible Facility Siting

Applicability of Siting Criteria

The Solar Act of 2021 directed the Board to establish Siting Criteria for all grid supply solar installations, as well as non-residential net metered solar installations with a capacity greater than 5 MW.³¹ The directive implies that the Siting Criteria will be applicable to *all* solar installations that are eligible to participate in the CSI Program (hereafter referred to as “CSI-eligible facilities”), not just the projects actively seeking a New Jersey incentive.

Section 6(a) of the Act required that “the Board shall not authorize a grid supply solar facility or a net metered solar facility greater than five megawatts in size to commence operation, or to interconnect to an electric distribution or transmission system, unless it meets the siting criteria developed pursuant to this section.”³² Staff notes that the siting provisions of the Act do not differentiate between projects receiving CSI Program incentives, and solar projects located in New Jersey that, for whatever reason, decide to forgo CSI Program incentives. Staff interprets this as a deliberate choice by the Legislature to require all grid supply or net metered solar projects over five (5) MW to meet the solar siting rules developed in this proceeding, regardless of their decision to seek New Jersey state incentives through the CSI Program. Had the Legislature intended differently, it could have tied the applicability of the solar siting rules to participation in the CSI Program. The Legislature did not do so. Staff thus interprets Section 6(a) as requiring the Board to apply the same siting rules for all CSI-eligible facilities.

Staff recommends that the Board require that all solar facilities, whether or not their owner/operators opt seek incentives through the CSI Program, be required to register their respective solar projects with the CSI Program registration manager so that the Board is able to track and monitor all solar facilities subject to New Jersey’s solar siting rules. This requirement will allow the Board to track such projects on a non-discriminatory basis, while also ensuring that non-incentivized projects intending to utilize the land they have reserved do so in a timely manner and are not hoarding available space or otherwise acting in an anti-competitive manner. In order to avoid the potential anti-competitive practices of “reserving” large tracts of farmland in specific counties, projects registering as non-CSI participants will be subject to the same project maturity requirements and milestones applicable to projects participating in the CSI Program. Following the same rationale, all projects will be subject to tracking to determine progress toward clean energy and emissions goals.

Staff also recommends that each portion of a larger project that involves construction on both the built environment and open space would be required to meet the siting requirements for the specific land use on which the portion of the project is to be built.

³¹ See L. 2021 c. 169 § 6.

³² See L. 2021 c. 169 § 6(a).

Prohibited Solar Siting on Certain Land Uses

Sections 6(c) and 6(e) of the Act list a series of land uses that are not available for solar siting, absent obtaining a waiver. Together, these will be referred to as “prohibited land uses”. Staff proposes to incorporate the statutory restrictions verbatim and prohibit siting of solar development on:

- (1) land preserved under the Green Acres Program;
- (2) land located within the preservation area of the pinelands area; as designated in subsection b. of section 10 of L.1979, c.111 6 (C.13:18A-11);
- (3) land designated as forest area in the pinelands comprehensive management plan adopted pursuant to L.1979, c.111 (C.13:18A-1 et 9 seq.);
- (4) land designated as freshwater wetlands as defined pursuant to P.L.1987, c.156 (C.13:9B-1 et seq.), or coastal wetlands as defined pursuant to P.L.1970, c.272 (C.13:9A-1 et seq.);
- (5) lands located within the Highlands preservation area as designated in subsection b. of section 7 of L.2004, c.120 (C.13:20-7);
- (6) forested lands, as defined by the Board in consultation with the Department of Environmental Protection; and
- (7) prime agricultural soils and soils of Statewide importance, as identified by the United States Department of Agriculture's Natural Resources Conservation Service, which are located in Agricultural Development Areas certified by the State Agriculture Development Committee, in excess of the Statewide threshold of 2.5 percent of such soils established by paragraph (1) of subsection d. of the Solar Act of 2021.

Additionally, Section 6(c)(8) of the Act prohibits siting of solar on preserved farmland, unless affirmatively allowed under N.J.S.A. 4:1C-32.4 et al.

Staff believes that the siting restrictions listed under 1, 2, 3, 5 and 8 are self-effectuating definitions, because they refer to fixed boundaries as defined by the appropriate statutes. However, restrictions 4 (wetlands), 6 (forestland), and 7 (certain non-preserved farmland) require additional discussion by the Board.

The implementation of these restrictions is discussed further below. In all cases, and in accordance with the recommended policy for processing waivers discussed below, a petitioner seeking to locate on an otherwise prohibited parcel may petition the Board for a waiver, following the process discussed later in this order.

Classification of Forested Land

Staff recommends that Board adopt the NJDEP definition of forested land or forestland. NJDEP defines forestland as land that has or has had within the past 10 years at least 10 percent crown cover by live tally trees of any size or at least 10 percent canopy cover of live tally species, based on the presence of stumps, snags or other evidence. To qualify as forestlands, the area must be at least 1.0 acre in size and 120.0 feet wide.

Staff further recommends that, in addition, the following apply:

1. Any roadside, streamside or shelterbelt strips of trees shall constitute forested land if it has a width of at least 120 feet and a continuous length of at least 363 feet.

2. The presence of unimproved roads and trails, streams or clearings in forested land shall not act to change the character of forested land unless such roads, trails, streams or clearings are more than 120 feet wide or larger than one acre in size.
3. Areas located between forest and non-forestland that meet the minimal tree stocking/cover and are adjacent to both forested land and to urban and built-up lands, are considered forested lands.

Solar projects seeking to be located on forested lands as defined above would be required to file a petition for waiver, as discussed in more detail below, that would highlight the site-specific factors, including consistency of the project with the character of the specific parcel, and others, that would make construction of solar on a currently forested location be in the public interest.

Screening for Specific Land Use Categories

Prior to conducting the solicitation, Staff recommends the use of the modified Anderson Classification system developed by NJDEP to screen whether potential solar projects would be located on restricted categories of land, such as Pinelands or Highlands preservation areas, or wetlands.³³ The Anderson classification system is derived from the U.S. Geological Survey's standardized approach. The stated purpose of this spatial data set is to provide information for regulators, planners, and others interested in land use & land cover changes and allow them to quantify those changes over time using GIS.³⁴

The U.S. Geological Survey Anderson Classification system, and the NJDEP derivative system are hierarchical systems based on four (4) digits. The four (4) digits represent one (1) to four (4) levels of classification which include: Level I, general; Level II, descriptive; Level III, detailed; and Level IV, most detailed.

For identification and classification of agricultural lands, and wetlands, Staff recommends the use of Level I category definitions as follows:

1. Agricultural Lands (2000 series): This category includes all lands used primarily for the production of food and fiber and some structures associated with this production.³⁵

³³ A Land Use and Land Cover Classification System for Use with Remote Sensor Data, U.S. Geological Survey Professional Paper 964, 1976; edited by DEP (New Jersey Department of Environmental Protection), OIRM (Office of Information Resources Management), BGIA (Bureau of Geographic Information and Analysis), 1998, 2000, 2001, 2002, 2007, 2012, 2015.

³⁴ Land Use Land Cover 2015 Update, Edition 20190128 (Land_lu_2015), vector digital data published 01/28/2019, NJ Department of Environmental Protection (NJDEP), Data Linkage <https://www.nj.gov/dep/gis>, Metadata Linkage Land Use/Land Cover 2015 Update, Edition 20190128 (Land_lu_2015) (arcgis.com)

³⁵ A Land Use and Land Cover Classification System for Use with Remote Sensor Data, U.S. Geological Survey Professional Paper 964, 1976; edited by DEP (New Jersey Department of Environmental Protection), OIRM (Office of Information Resources Management), BGIA (Bureau of Geographic Information and Analysis), 1998, 2000, 2001, 2002, 2007, 2012, 2015.

2. Wetlands (6000 series): This category contains areas that are inundated or saturated by surface or ground waters at a frequency and duration sufficient to support vegetation adapted for life in saturated soil conditions.³⁶

The most current available data is representative of conditions in New Jersey for 2015 (published in 2019). Future updates of this data are expected to be published by the NJDEP in 2023 and to be representative of land use/land cover conditions of New Jersey in 2020. Retrospective data is also available for 1998, 2000, 2001, 2002, 2007, 2012. The relative low frequency of statewide published land use/land cover data is a result of limited available statewide input imagery and classification processing time. In the event that a developer thinks that the NJDEP modified Anderson Classification System no longer accurately classifies a specific parcel of land, the waiver process can be used. As part of the waiver application, the applicant would need to demonstrate that no inappropriate land use change for the purpose of circumventing siting restrictions has taken place.

Solar on Agricultural Land

Section 6(d)(1), as well as 6(f), of the Act specify restrictions for the development of CSI-eligible facilities on specific agricultural land. Both sections refer to “prime agricultural soils and soils of Statewide importance as identified by the United States Department of Agriculture’s Natural Resources Conservation Service, which are located in Agricultural Development Areas certified by the State Agriculture Development Committee.”³⁷ The soil types are defined as covered agricultural land earlier in this order. For implementation of Section 6(d)(1) of the Act, Staff recommends that CSI-eligible facilities not be allowed to register with the Board and pursue development if the aggregate solar development on covered agricultural lands exceeds 2.5% of such lands Statewide. Aggregate solar development is defined here as all CSI-eligible facilities constructed after the effective date of this order, plus all CSI-eligible facilities having received a notice of conditional registration.

In addition to the above, Staff recommends that Section 6(f) of the Act be implemented independently and that CSI-eligible facilities shall not be allowed to register with the Board if the aggregate solar development on unreserved covered agricultural land within a specific county exceeds 5% of such lands in the county. Staff notes that the definition of land subject to the per-county limit includes the “unreserved” qualifier, while the statewide restriction does not. Thus, the statewide cap is proposed to be calculated by looking at preserved and unreserved farmland, while the per-county cap is proposed to be calculated on the basis of unreserved farmland only.

In order to calculate the acreage of covered agricultural land available for solar development, both Statewide and per-county, Staff proposes to use a specific methodology, developed in cooperation with the Department of Agriculture and SADC. The methodology is described in Appendix C of this order.

Staff proposes that, in determining the acreage for aggregate solar development, the size of a CSI-eligible facility shall equal the total contiguous or noncontiguous area(s) supporting the solar energy facilities and related infrastructure. The total area calculation shall include any areas of land no longer available for, or in, agricultural or horticultural production due to the presence of the solar energy facilities, including all areas of land that are devoted to or support the solar energy

³⁶ Id.

³⁷ L. 2021 c. 169 § 6(d)(1) and (f).

facilities; non-farm roadways including access roads; any areas of the farm used for underground piping or wiring to transmit solar energy or heat where the piping or wiring is less than three feet from the surface; and areas consisting of other related facilities, structures, and equipment, including any other buildings or site amenities, deemed necessary for the production of solar energy. A CSI-eligible facility would not be permitted to exceed the acreage of solar development on covered agricultural lands submitted as part of the registration.

Section 6(d)(2) of the Act specifies that the Board,

...in consultation with the Secretary of Agriculture, shall track and record the Statewide area of prime agricultural soils or soils of Statewide importance, which are located in Agricultural Development Areas certified by the State Agriculture Development Committee, and which are utilized for solar energy production by grid supply solar facilities and net metered solar facilities greater than five megawatts in size, in order to implement the provisions of this section.

Staff recommends that this tracking and recording take place at least annually, after projects awarded in the CSI solicitation have received a Notice, but before a new solicitation is opened. Staff recommends that the results be published directly on the NJCEP website or on a website clearly linked thereto.

Finally, Section 6(e) of the Act prohibits siting of solar projects subject to the Act on Preserved Farmland, unless undertaken consistent with the requirements of N.J.S.A. 4:1C-32.4 et al., which governs the construction of solar electric power generation facilities on those lands. Staff recommends that nothing in this order shall be construed to alter the process for siting solar facilities on Preserved Farmland.

Waiver Process

Staff recommends that the Board, in consultation with other State agencies as appropriate, review petitions for waivers that seek construction of CSI-eligible facilities on either non-agricultural prohibited land uses, or in excess of the 2.5% Statewide threshold for solar development on covered agricultural land.³⁸ Following the Act, the Board or its designee will make a positive finding with regard to any such petition only upon determining that the petitioner has documented sufficient facts and circumstances establishing the public's specific interest in siting the CSI-eligible facility on or within a specific prohibited land use, and finding that the waiver is in the public interest.

Staff notes that projects proposed to be constructed on preserved farmland, or exceeding the 5% county concentration limit, are not eligible for a waiver, and proposes that the Board delegate authority to Staff to administratively deny requests for such waivers.

³⁸ The Solar Act of 2021 does not permit waivers of the 5% per-county limit. N.J.S.A. 48:3-119(f).

Expedited Waiver Process for Projects on Built Environment

As discussed earlier, a sizable portion of the CSI Program will be dedicated to projects on the built environment. The Board has “a stated preference for solar projects that make use of the built environment and that minimize impacts on open space (e.g. rooftops and similar installations on the built environment).”³⁹

To implement the Board’s policy preference for solar on impervious surfaces and the built environment, Staff recommends providing an expedited path to demonstrate that such projects meet the solar siting criteria established by the Act. Generally, Staff views these projects as highly desirable, since they do not impinge upon open space or farmland, being situated on previously existing impervious surfaces.⁴⁰

Given this policy preference, Staff recommends that the Board provide an expedited waiver process for CSI-eligible solar installations on prohibited land uses if the facility will be located exclusively on the previously built environment. Staff proposes that the Board deem such installations to be presumptively in the public interest, despite being sited on an otherwise prohibited land use, provided that the structure or surface has existed for at least three (3) years prior to the date that the waiver application is filed.

Staff further recommends that the Board designate approval of such waiver applications to Staff or a program administrator duly retained by the Board. Staff, or the program administrator, should be authorized to request additional evidence prior to approving or denying a request for a waiver.

Finally, Staff recommends that any CSI-eligible project that is denied a waiver through the expedited waiver process, may instead file a petition with the Board explaining the specific facts and circumstances of its waiver request.

Construction Requirements for CSI-eligible Facilities

In consultation with the Department of Agriculture, SADC, and NJDEP, and in the interest of environmental preservation and protection, Staff has developed the following recommendations. As discussed more fully below, CSI-Eligible Facilities, other than those mounted on the built environment will be required to:

1. comply with requirements detailed in the New Jersey Soil Erosion and Sediment Control Act (N.J.S.A. 4:24-39 et seq.), as well as comply with specific erosion control measures recommended by the SADC;
2. comply with DEP’s “Standards for the use of Pollinator-friendly Native Plant Species and Seed Mixes in Grid Supply and Select Net Metered Solar Facilities”; and
3. if proposed to be located on land in agricultural use, be subject to approval from the location’s Soil Conservation District for stormwater runoff and erosion control protection.

³⁹ See SuSI Order at 20.

⁴⁰ The legislature has also repeatedly indicated support for solar on the built environment, both in the Solar Act and by its passage of the November 8, 2021 law requiring solar-ready roofs on warehouse. N.J.S.A. 52:27D-123.19.

In addition, Staff views CSI-eligible facilities proposed on covered agricultural land as potentially temporary installations. Thus, Staff seeks to ensure that agricultural land hosting these solar projects is able to be restored to its original, pre-project state at the end of the solar project's economic life. To facilitate this goal, Staff recommends that as a part of the construction requirements for facilities sited on covered agricultural land, developers be required to develop a comprehensive plan identifying infrastructure, soil quality, site restoration needs, and installation considerations. In addition, these developers must comply with several requirements intended to allow for the land to be restored at the end of life of the solar installation and have an assigned environmental inspector tasked with ensuring compliance.

Erosion Protection for all Ground Mounted CSI-eligible Solar

In order to address soil erosion concerns, Staff has cooperated with the Department of Agriculture and SADC in recommending the following:

1. Requiring that all CSI-eligible facilities, other than those located on the built environment, comply with the requirements for soil erosion and sediment control in accordance with the N.J. Soil Erosion and Sediment Control Act (N.J.S.A. 4:24-39 et seq.) and implementing Rules at N.J.A.C. 2:90-1.0 et seq.;
2. Requiring that all CSI-eligible facilities, other than those located on the built environment, assess existing drainage conditions as part of the development of a comprehensive siting plan and identify any areas where surface runoff currently exists or where proposed grades will create surface runoff concentration. All such areas must be designed to prevent onsite erosion as well as protect offsite areas from erosion and flooding;
3. Requiring that all CSI-eligible facilities shall comply with NJDEP's Stormwater Management Rules pursuant to N.J.A.C. 7:8; and
4. Requiring that all CSI-eligible facility panel drip lines be protected against scour.

In order to facilitate enforcement of these criteria, Staff recommends that all CSI-eligible facilities proposed to be located on land in agricultural use, other than those proposed to be located on the built environment, be submitted to the Soil Conservation District. That body would review for compliance with the requirements in this section and any applicable Soil Conservation District guidelines for stormwater runoff quantity and erosion control. Evidence of approval by the Soil Conservation District would be required as part of the post-construction certification package.

Pollinator Standard Compliance

In order to implement Section 5(g) of the Solar Act of 2021,⁴¹ Staff recommends that CSI-eligible facilities, other than those mounted on the built environment, be required to comply with NJDEP's "Standards for the use of Pollinator-friendly Native Plant Species and Seed Mixes in Grid Supply and Select Net Metered Solar Facilities" ("Pollinator Standards"). CSI-eligible facilities that meet the requirements for qualification in the Contaminated Sites and Landfills tranche of the CSI Program, described earlier in this order, would be exempted from mandatory compliance with the Pollinator Standards because landfill closure and contamination mitigation requirements may impose other and potentially conflicting requirements.

⁴¹ See L. 2021 c. 169 § 5(g).

Staff proposes that, as part of the post-construction certification package, CSI-eligible facilities be required to submit to the Board, or program administrator duly retained by the Board, a vegetation management plan consistent with the requirements outlined in the Pollinator Standards.

1. CSI-eligible facilities would be required to successfully implement and maintain the site in accordance with the vegetative management plan. Successful implementation is determined by a minimum 80% survival rate of vegetation planted.
 - a. CSI-eligible facilities would have to comply with monitoring requirements.
 - b. The Board may audit CSI-eligible facilities for compliance with the vegetative management plan. The Board or its designee would, within 60 days of the audit:
 - i. certify that the facility is in compliance with its vegetation management plan, with no additional actions required; or
 - ii. notify the facility that it is in noncompliance with the required vegetation management plan.
 - c. If the Board finds that the facility is in noncompliance with the required vegetation management plan, the Board or its designee would:
 - i. specify the areas of noncompliance;
 - ii. identify corrective actions required; and
 - iii. identify the timeframe within which noncompliance must be addressed to avoid suspension of incentives under the CSI Program.
2. Approved CSI Facilities found to be in non-compliance with NJDEP's Pollinator Standards, and that have failed to take the corrective actions identified within the timeframes specified, would be notified by the Board or a program administrator duly retained by the Board of their suspension of incentives. This notification would also identify the conditions for restoration of the incentive.

Construction Requirements Solar on Covered Agricultural Land

Noting that covered agricultural land includes prime soils and soils of Statewide importance within agricultural development areas ("ADAs"), Staff seeks to enable potential future restoration of lands, to agricultural use or conversion to dual use solar. The following recommendations address specific construction requirements for CSI-eligible facilities on such lands.

Staff recommends the following requirements for all CSI-eligible facilities located on covered agricultural lands, other than those mounted on the built environment. These facilities should be required to:

1. prepare a plan identifying the following:
 - a. the location of proposed above and below ground facility infrastructure;
 - b. the sequence for facility infrastructure removal and site restoration to prior agricultural conditions in the event that solar installations will be removed; and
 - c. pre-construction soil quality characteristics across the site on a 100 feet by 100 feet grid by a qualified soil scientist or geotechnical engineer, including:
 - i. soil map unit;
 - ii. soil textural classification;
 - iii. hydrologic soil group;
 - iv. organic matter content;
 - v. salinity; and
 - vi. macro nutrient content (N, P, K);
 - d. tabulate and correlate mapped characteristics to the grid to enable potential future restoration of pre-grid installation conditions;

2. indicate the party responsible for removal and restoration to prior agricultural conditions in the event that solar installations are removed;
3. have an assigned “environmental inspector,” with experience in solar construction methods on land in agricultural use and agricultural production methods common to the area, who shall be responsible for ensuring compliance with all applicable mitigation, construction and restoration procedures identified in federal, State and county permits, State rules and the project plan;
4. be installed by a screw, piling or similar system that does not require a concrete footing or other permanent mounting. In the event these methods of mounting are not practicable, written justification shall be required by a licensed professional engineer responsible for designing the installation, that permanent ground mounting is necessary to conform with federal or State laws, rules or regulations and that the permanent mounting requires footings, concrete or other permanent methods;
5. retain stripped topsoil onsite for potential future return to agricultural use. All retained topsoil shall be permanently stabilized in accordance with the Standards for Soil Erosion and Sediment Control in New Jersey; N.J.S.A. 2:90-1.3; and
6. prevent topsoil within inter-panel row travel lanes from becoming compacted or otherwise co-mingled with subsoil layers by construction traffic.
- 7.

After consultation with the Department of Agriculture and SADC, Staff recommends that these requirements be monitored by the Soil Conservation District for compliance, in addition to the erosion control measures specified earlier.

DISCUSSION AND FINDINGS

New Jersey has a long history of supporting solar energy. This strong commitment to solar has been demonstrated through the solar by the growth in installed capacity, which has risen from less than 100 kW in 2000 to more than 4,200 MW today. New Jersey is one of the most vibrant solar marketplaces in the world, and the Board is committed to maintaining our State’s position as a marketplace leader, while at the same time taking steps to control ratepayer costs. In compliance with the Clean Energy Act and subsequent legislation, and in recognition of the Board’s own commitment to ensuring both the continued growth of the solar industry and affordability of incentives for ratepayers, this is the right moment to establish a competitive procurement for large-scale solar in New Jersey.

The Board also recognizes the significant benefits associated with the expansion of local, distributed, renewable, non-polluting sources of energy. In addition to the reduction of emissions that contribute to global warming, there is the reduction of air pollutants and the associated health benefits; increased resilience in the form of distributed generation; and a lessened need to site and the economic growth fueled by local job creation.^{42,43}

The Board has reviewed the extensive record created during development of an incentive program for large scale grid supply and net metered solar facilities. The various stakeholders who participated in this proceeding have brought considerable dedication and passion to the process of transitioning the solar market. That dedication is reflected in the extensive record that

⁴² 2019 New Jersey Energy Master Plan: Pathway to 2050, nj.gov, https://nj.gov/emp/docs/pdf/2020_NJBPU_EMP.pdf.

⁴³ New Jersey Department of Environmental Protection, New Jersey’s Global Warming Response Act 80 x 50 Report, nj.gov, <https://www.nj.gov/dep/climatechange/docs/nj-gwra-80x50-report-2020.pdf> .

forms the basis for the actions taken today. The Board commends and thanks all stakeholders for their active participation in this proceeding. Public participation is invaluable to the Board's decision-making process, and each contribution made in a public meeting or in written comments has helped inform the Board's conclusions.

The Board **HEREBY ORDERS** the establishment of a CSI Program. The Board **ORDERS** that solar incentives, in the form of NJ SREC-IIs, be provided to eligible projects upon selection through a competitive procurement, and that the value of each SREC-II be established through the solicitation as recommended by Staff in the body of this Order.

The Board **HEREBY ORDERS** that the CSI Program be open to qualifying grid supply projects; net metered non-residential projects with a capacity greater than five (5) MW; and qualifying grid supply projects paired with a storage facility.

The Board **HEREBY ORDERS** that all CSI-eligible facilities comply with the siting criteria as recommended by Staff in the body of this Order. The Board **HEREBY FINDS** that solar facilities located on the built environment but otherwise within an area of prohibited land use, are in the public interest and **HEREBY GRANTS** Staff authority to administratively grant a waiver for such projects. The Board **FURTHER FINDS** that projects to be located on preserved farmland or on covered farmland in excess of the county concentration limit are prohibited by statute from obtaining a waiver and **HEREBY GRANTS** Staff authority to administratively deny request for a waiver for such projects.

The Board **ORDERS** that all CSI-eligible facilities are required to submit a complete CSI Program registration package and receive a Notice prior to beginning construction on the facility. The Board **ORDERS** the CSI Program registration manager to review registration packages, and to determine whether the registration package is complete, incomplete, or deficient. Registrations that are deemed incomplete due to a minor deficiency, pursuant to N.J.A.C. 14:8-11.5(a), shall be allowed seven (7) business days to remediate; registrations that are deemed incomplete, have a major deficiency pursuant to N.J.A.C. 14:8-11.5(b), or that fail to correct minor deficiencies within the time allowed, shall be rejected. If the project meets the eligibility and qualification requirements for a CSI registration, and the registration package is complete or contains minor deficiencies that are cured in the time allowed, the CSI Program registration manager shall issue a notice of conditional registration.

The Board **ORDERS** that projects qualifying for Tranche 3: "Contaminated sites and landfills" of the CSI Program must submit an application to the Board for conditional approval. The Board **DIRECTS** Staff to work with the NJDEP to develop a dedicated application to enable review by Staff and NJDEP. The Board **HEREBY ORDERS** that the interim subsection (t) section within the ADI Program be closed on the effective date of this order.

After submittal of an initial registration package and issuance of a Notice, the Board **ORDERS** that CSI projects shall be allowed to increase the project's solar generating capacity by up to 20 percent or 25 kWdc, whichever is less, contingent on notifying the CSI Program registration manager following the instructions provided on the NJCEP website. Projects shall not increase their generating capacity by more than 20 percent or 25 kWdc.

The Board **HEREBY ORDERS** the EDCs to verify that all grid supply solar installations and net metered non-residential solar installations with a nameplate capacity larger than five (5) MW are registered with the Board. The Board **DIRECTS** the EDCs to verify registration prior to providing permission to operate.

The Board **HEREBY ORDERS** all CSI-eligible facilities to comply with construction requirements recommended by Staff in the body of this Order, including but not limited to the requirements to mitigate potential erosion, to comply with pollinator standards, and to comply with all specific requirements for the preservation of farmland, if applicable.

The Board **DETERMINES** that CSI-eligible projects that receive a NJ SREC-II Certification Number shall be eligible to create NJ SREC-IIs for 15 years following the date of commencement of commercial operations. NJ SREC-IIs are based on metered generation supplied to GATS, with one MWh being the basis for the creation of one NJ SREC-II. NJ SREC-IIs shall be eligible to be created and retired in GATS in the energy year in which the underlying energy was generated and the energy year following the energy year in which the underlying energy was generated. After the end of the NJ SREC-II qualification life, energy from these facilities shall be eligible for a NJ Class I REC.

The Board **HEREBY DIRECTS** Staff and the CSI solicitation manager to develop all program documents and resources that shall be necessary for the operation of the CSI solicitation, including but not limited to: creation of a new registration portal for the CSI procurement, updates to the NJCEP website and development of procurement forms and checklists. The Board **ALSO DIRECTS** Staff and the CSI solicitation manager to open the CSI solicitation portal to new registrations at 12:00:00 a.m. on February 1, 2023. The Board **FURTHER DIRECTS** Staff and the CSI solicitation manager to close the portal for bid submissions on March 31, 2023 at 11:59:59 PM.

The Board **HEREBY DIRECTS** Staff and the SuSI Program Registration Manager to develop all program documents and resources that are necessary for the registration of qualified projects in the CSI Program, including, but not limited to: creation of a new registration portal for the CSI Program, updating the NJCEP website, and development of forms and checklists. The Board **ALSO DIRECTS** Staff and the SuSI Program Registration Manager to open the CSI Program registration portal to new registrations at 12:00:00 a.m. on April 15, 2023.

The Board **FURTHER DIRECTS** Staff, the CSI solicitation manager, and the SuSI Program registration manager to take action to communicate the establishment of the CSI Program to the public. Communication shall include listserv messages, website notices, and informational webinars.

The Board **HEREBY DIRECTS** the EDCs to work with Staff to either procure a new administrator for SREC-IIs from the CSI Program or to expand the scope of the existing SREC-II Administrator to include SREC-IIs from the CSI Program. The Board **ORDERS** the EDCs' CSI SREC-II Administrator to use the GATS system to purchase all SREC-IIs produced each year by eligible projects for the CSI Program. The Board **DIRECTS** the EDCs' CSI SREC-II Administrator to retire and allocate NJ SREC-IIs as a carve-out of the NJ Class I RPS obligation.

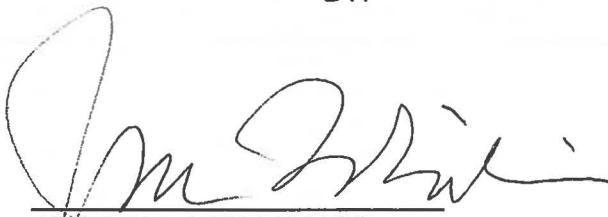
The Board **HEREBY FINDS** that the EDCs may recover reasonable and prudent costs for SREC-II procurement and CSI SREC-II Administrator fees. Recovery shall be based on each EDC's proportionate share of retail electric sales. Each EDC shall make an annual filing for its costs and the recovery method, which shall be subject to approval by the Board.

Finally, unless stated otherwise in this section, the Board **HEREBY APPROVES** all recommendations made by Staff above and **HEREBY DENIES** any conflicting stakeholder comments.

The effective date of this Order is December 7, 2022.

DATED: December 7, 2022

BOARD OF PUBLIC UTILITIES
BY:



JOSEPH L. FIORDALISO
PRESIDENT



MARY-ANNA HOLDEN
COMMISSIONER



DIANNE SOLOMON
COMMISSIONER



ROBERT M. GORDON
COMMISSIONER



DR. ZENON CHRISTODOULOU
COMMISSIONER

ATTEST: 
CARMEN D. DIAZ
ACTING SECRETARY

I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities.

IN THE MATTER OF COMPETITIVE SOLAR INCENTIVE ("CSI") PROGRAM PURSUANT TO
P.L. 2021, C.169

DOCKET NO. QO21101186

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APPENDIX A: STAKEHOLDER COMMENTS AND RESPONSES

CSI Program Straw Comments

The Board received a total of 12 written comments on the CSI Program Straw proposal published on April 26, 2022, DOCKET NO. QO21101186

Comments were received from:

1. New Jersey Division of Rate Counsel (Rate Counsel)

Electrical Distribution Companies

2. Public Service Electric & Gas Company (PSE&G)
3. Rockland Electric Company (RECO)
4. Jersey Central Power & Light Company (JCP&L)

Elected Officials / Public or Quasi-Public Entities

5. New Jersey State Agriculture Development Committee (SADC)

Solar Developers / Industry:

6. Enel Green Power North America
7. CS Energy
8. BlueWave
9. NJR Clean Energy Ventures Corporation (NJRCEV)
10. REV Renewables (REV)

Trade Organizations / Coalitions:

11. Joint Solar and Storage Parties, consisting of:
 - o Solar Energy Industries Association (SEIA)
 - o New Jersey Energy Coalition (NJSEC)
 - o Mid-Atlantic Renewable Energy Coalition Action (MAREC Action)

NGOs / Community Organizations / Environmental Groups

12. New Jersey Farm Bureau

Stakeholder comments are grouped by topic, largely following the lay-out of recommendations in the Board's Order. As a result, the summary of comments and responses below deviates from the numerical order of questions in the Straw Proposal. Staff has attempted to include the substance of many of the relevant comments into the summaries below as a courtesy to commenters. Comments raised in multiple sections are addressed once.

Tranche Procurement

Proposed tranches. A number of commenters stated that the proposed tranches seemed appropriate for the program and its goals, including Rate Counsel.

CS Energy argued that project size "is an important factor that has significant implications for project development across New Jersey," and urges that a separate sub-category within the Grid Supply tranche be established for projects less than or equal to 10 MWdc, in order to ensure that smaller projects have the chance to be competitive and that "all the economic development and clean energy benefits will not be concentrated in one part of New Jersey."

Response. Staff is concerned that further dividing project tranches by size or geographic region might undermine the overall competitiveness of the procurement.

Preserving agricultural land. The New Jersey Farm Bureau commented on the importance of “encourag[ing] development outside of county agricultural development areas (ADAs) before approving projects inside the ADAs on preferred soils,” and they agreed with the importance of maintaining the 5% per county cap and the 2.5% statewide cap. The New Jersey State Agricultural Development Committee suggests that projects not on agricultural land should be given priority within the Basic Grid Supply tranche.

Response. The Solar Act of 2021 included a number of provisions relating to the prioritization of solar on various types of land, including farmland, which the Board closely tracks in its order. Further, in the interests of supporting competition and lowering ratepayer costs, Staff does not recommend imposing additional constraints on the Basic Grid Supply tranche at this time, given that additional constraints could significantly increase the costs of the program.

Grid Supply on Contaminated Sites and Landfills. Staff requested input on the proposal that for the Grid Supply on Contaminated Sites and Landfills, a requirement that 90% of the project be located on directly on contaminated lands/landfills, with an allowance of a 10% impact on “associated disturbed areas.”

In response, Rate Counsel recommended that this requirement not be changed “without meaningful information that proves a differing percentage is more reasonable,” but recommends that “Board Staff should continue to monitor this percentage through projects that are approved through the CSI process.”

CS Energy, in contrast, recommended a one-to-one ratio, “while constraining development within the tax parcels affected by the landfill or contamination...applying the standard to parcels that existed when the Act was passed. This type of approach will allow projects to scale and ensure that the practical limits of property re-development are considered.”

Response: The proposal that in order to qualify for the Grid Supply on Contaminated Sites and Landfills, 90% of the project be located directly on contaminated land or landfills is intended to ensure that potentially higher SREC-II payments for these projects in fact go to projects located on contaminated land. In cases in which significant portions of a project are not on contaminated land or landfill, this rule does not preclude developers from developing projects adjacent to the contaminated land and bidding these projects separately into the Basic Grid Supply tranche.

Net Metered Projects. NJR Clean Energy Ventures Corporation argues that net metered projects should not be required to compete for incentives, but instead should be offered a fixed, administratively determined incentive that companies can promise to customers in advance.

Response. The Solar Act of 2021 specifically allows for a competitive procurement for net metered projects larger than five (5) MW and Staff believes that developers of large behind-the-meter projects are sophisticated developers capable of participating in a competitive process. Further, large behind-the-meter projects have a variety of costs, and competition should result in significant savings for ratepayers.

Storage tranche. The Joint Solar and Storage Parties comment that the opportunity to realize a storage adder might result in lower SREC-II bid prices. CS Energy stated that it is not sure about SREC-II price impacts, but noted that they “expect market forces and technological improvement to apply pressure that will make energy storage an essential component of any grid supply solar project in the next five years.”

Rate Counsel offered comments supporting the proposed two-part solar and storage bid structure as useful for “price discovery on the specific level of financial support that is required for a storage facility that is proposed as part of a broader solar project,” and also as allowing solar projects to proceed, even if their storage component is not awarded an adder.

Enel commented on the need to know any additional requirements for storage to participate in the CSI Program.

RECO commented that it would be desirable to develop a generic statewide approach to storage through a separate proceeding, rather than “addressing storage on an ad hoc basis in multiple proceedings.”

Response. Staff agrees with the comments supporting the two-part storage approach. The intention of this approach is to impose minimal additional requirements on storage facilities, allowing developers to follow market incentives as much as possible in the design and operation of these facilities. Although the adder specified in the Board’s Order does not address storage broadly, Staff is hopeful that this competitive procurement may provide useful price discovery for the general storage program currently under development in Docket No. QO22080540.

Tranche eligibility for storage participation. The Joint Solar and Storage Parties and the NJR Clean Energy Ventures Corporation commented that net metered non-residential projects larger than five (5) MW should also be eligible to compete for a storage adder. However, CS Energy argued that the focus should, as proposed, be on adding storage capacity to the Grid Supply program.

Response. Staff omitted the net energy metering tranche from competition for a storage adder primarily because net metered projects have different price incentives than projects participating in the wholesale market. Whereas market dynamics for grid-connected storage projects likely provide an inherent incentive to optimize grid benefits, battery operation for net metering customers may not be similarly aligned under current net metering rates. Further, Staff anticipates that net metered projects may participate in the Board’s storage program under development in Docket No. QO22080540.

Inclusion of floating solar. Several comments argued for the inclusion of floating solar in one (1) of the specialized tranches or, alternatively, for creation of a separate floating solar tranche. REV Renewables recommended allowing floating solar located on bodies of water used for industrial or other non-public purposes to compete in the Grid Supply on Contaminated Land and Landfills tranche (Tranche 3) or providing a separate tranche. CS Energy argued for the inclusion of floating solar in the Built Environment tranche (Tranche 2). NJR Clean Energy Ventures argued that floating solar should be included in Tranches 2 or 3. Similarly, the Joint Solar and Storage Parties recommended that a separate tranche be devoted to floating solar.

Response: After consultation with NJDEP, it is Staff's understanding that the environmental impacts of floating solar are still being studied.⁴⁴ In the absence of a clear understanding of these impacts, we believe it is premature to recommend special favorable treatment of floating solar in the upcoming SREC-II procurement. These projects are eligible to compete in the Basic Grid Supply tranche.

Dual-use (agrivoltaics). Comments from BlueWave focused on urging that the CSI Program allow for construction of solar projects on agricultural lands, with special preferences for dual-use projects. The commenter suggested special provisions for dual-use projects, including:

- receive special consideration in the CSI, including the flexibility to participate in either the ADI or the CSI programs;
- not be subject to the CSI siting guidelines, provided they meet the siting guidelines of the dual-use pilot; and
- be considered a preferred project type and be allowed to be built on prime agricultural soils and soils of statewide importance.

The New Jersey Farm Bureau also supported potential special accommodations for dual-use projects, specifically, "using the pilot program for dual use as evidence for specific program carveouts in future rounds of the program."

In contrast, comments from the New Jersey State Agricultural Development Committee stated that it would be "premature" to include agrivoltaic projects in the CSI program, "until we further define these projects and understand the multitude of factors that will contribute to their cost competitiveness."

Response. Staff notes that development of appropriate supports for dual-use projects will be undertaken as part of New Jersey's Dual-Use Solar Energy Pilot Program, to be established under P.L. 2021 c. 170. Dual-use projects that will be approved by the Board under the pilot program will not be included in the calculation of the caps on covered agricultural land. Establishing special treatment for dual-use projects within the CSI Program prior to implementation of the pilot would be premature. However, Staff generally agrees dual-use facilities should be allowed to be located on farmland with fewer land use restrictions than normal grid supply solar projects given that the land is not taken out of agricultural usage.

Project pre-qualification and maturity

PJM queue position as a pre-qualification requirement. Commenters, including Rate Counsel, Enel, the Joint Solar and Storage Parties, and NJRCEV, agreed with the general approach of using PJM queue position as a prequalification requirement; however, there was some disagreement about the appropriate queue position to require. Enel, the Joint Solar and Storage Parties, and NJRCEV all commented that if projects are to have a good prospect of reaching COD within three (3) years after award, they should be required to have both a completed System Impact Study and a completed Facilities Study. In contrast, Rate Counsel recommended that "Initially...any position in the PJM queue [should] be deemed a sufficient

⁴⁴ See Exley, G., et al., Scientific and stakeholder evidence-based assessment: Ecosystem response to floating solar photovoltaics and implications for sustainability." 152 Renewable and Sustainable Energy Revs. 111639 (2021), https://wildenergy.org/wp-content/uploads/2021/10/Exley_et_al._2021.pdf.

indication of maturity,” given the current difficulty of predicting project progress through the queue. Rate Counsel recommended revisiting the question of appropriate queue position benchmarks after completion of PJM queue reform.

CS Energy generally concurred with the use of queue position, but asked for additional clarity about what qualifies as a queue position; it also commented that the BPU should provide “schedule relief” for projects that are awarded incentives under the CSI Program but do not meet incentive deadlines due to interconnection delays.

Response: Staff appreciates the general support for using PJM queue positions as a transparent measure of project maturity. Staff agrees that it will have to monitor future developments in interconnection timing carefully and potentially make adjustments to the milestone requirements based on the outcome of PJM’s current interconnection queue reform efforts. As noted in the body of the document, Staff recommends that projects be required to complete the Feasibility Study (or comparable Phase I study assuming PJM’s interconnection reform efforts are approved by FERC). Staff believes that using a completed Feasibility Study as the measure of project maturity allows sufficient number of projects to compete in the CSI Program while also limiting competition to projects that are advancing through the PJM interconnection process.

Timing of award in development cycle. In order to better understand how award timing might impact the ability of projects to secure funding, Staff asked developers for input relative to the stage in the PJM queue process at which projects generally secure funding. In response, CS Energy commented that “Project funding is secured for PJM projects coincident with a project entering into an ISA, and in some cases we see projects secure funding at the conclusion of a Facilities Study.”

Response: Staff acknowledges that projects that are farther along in the PJM interconnection study process will have greater cost certainty and therefore greater likelihood of completion. However, robust competition is important to the success of the first procurement, so it is necessary to weigh the benefits of project certainty against the costs of limiting the project pool. PJM’s transition plans indicate that projects that entered the PJM Queue by September 30, 2021, designated by PJM as the AH-1 cluster, can expect to be processed on a timeline intended to allow them to reach a final agreement by late 2026.⁴⁵ Other projects that entered the PJM queue earlier, designated by PJM as AG1 and prior, should expect their Final Interconnection Agreements to be complete by mid-2025.⁴⁶

Assuming that the first round of projects are notified of SREC-II awards in 2023, PJM’s timing suggests that projects through AG1 could reasonably expect to complete the interconnection process within a three-year timeframe, including about a year to allow for construction after reaching a Final Agreement. Developers of projects that entered the PJM queue later than the AG1 group will need to assess their ability to complete the interconnection process and the projects within the three-year timeframe. These developers may choose to wait for the next round

⁴⁵ PJM Interconnection, LLC, FERC Docket No. ER22-2110 -000, Tariff Revisions for Interconnection Process Reform, Request for Commission Action by October 3, 2022, and Request for 30-Day Comment Period.

⁴⁶ See PJM, Interconnection Queue Reform, [pjm.com](https://www.pjm.com/-/media/committees-groups/task-forces/iprtf/2022/20220315/20220315-item-02-transition-to-cycle-process-and-tariff-revision-information.ashx) (March 15, 2022) at 5, <https://www.pjm.com/-/media/committees-groups/task-forces/iprtf/2022/20220315/20220315-item-02-transition-to-cycle-process-and-tariff-revision-information.ashx>.

of procurement.

Accordingly, Staff is proposing that the prequalification requirement for the first round of procurement be a completed Feasibility Study (the first study in the current PJM process). Prerequisites for a Feasibility Study include a deposit and demonstration of site control. Staff does not recommend any additional requirements, such as demonstrating community engagement, since we are trying to avoid adding elements that bring in the need for subjective judgement and make decisions about pre-qualification less predictable. Projects will be allowed to apply for up to a one-year extension of their COD, provided they can demonstrate progress towards commercial operation.

For future procurements, Staff expects to continue to reevaluate prequalification criteria in light of the CSI participation results and developments within the PJM reform effort/backlog.

Potential for projects to avoid the PJM interconnection process: In an effort to better assess the potential pool of projects that might avoid the PJM queue, Daymark and Staff requested developer input on which developers expect to use state-jurisdictional interconnection processes or distribution-level interconnections to avoid the PJM queue, and how maturity requirements should be developed for such projects.

In response, CS Energy commented that, “[w]e see an opportunity for developers to pursue state-jurisdictional interconnections. Projects that are being studied under state-jurisdictional interconnection processes should be eligible to participate in the CSI program, on equal footing with PJM interconnected projects. Staff should ensure that considerations are in place for these projects to be part of the CSI program under an index-REC framework.”

The Joint Solar and Storage Parties commented that the proposal to require evidence of having conditional interconnection approval from the applicable distribution utility is “appropriate.” In addition, they recommended that “such projects have a completed interconnection study from the relevant EDC as well, subject to the condition that all deposits be fully refundable should the project not be selected in the bid process.”

PSE&G proposed a definition for the “conditional approval” mentioned in the proposal. PSE&G recommended that such conditional approval not be a full interconnection engineering study performed by the EDC, but rather a submission by the developer indicating that the developer has completed a study on the proposed location of the facility and can establish that the circuit serving that location has sufficient capacity for the proposed project. Should the EDC conclude that the developer made such a showing, the EDC could provide the developer with the “conditional approval” mentioned above, allowing the developer to apply to the CSI Program.

Response: As detailed above, Staff has recommended alternative pre-qualification procedures for projects under state-jurisdictional interconnection processes; these projects must provide evidence of an executed Part 1 Interconnection agreement. Because Indexed SREC-IIs are not recommended at this time, special accommodations will not be needed in order for these projects to benefit from SREC-IIs. As discussed in the body of the Board’s Order, Staff is not recommending that deposits be refundable.

The Storage Adder and Interconnection. Two (2) commenters, the Joint Solar and Storage Parties and CS Energy raised the issue that adding or subtracting storage in the middle of the

interconnection process could count as a “material modification,” potentially causing delays or additional costs in the interconnection process. CS Energy suggested that “NJBPU should propose a framework that would allow projects to move forward if a project seeking to add decoupled storage to an existing solar only queue position is denied via PJM’s Surplus Interconnection Request process.”

Response: Staff appreciates these comments, which raise an issue not previously considered. Given our prequalification requirements, projects will need to enter the PJM queue (with or without storage) prior to knowing if they will receive a storage adder through the SREC-II procurement process. It is Staff’s understanding that in cases in which projects enter the queue without storage, and subsequently seek to add storage, may be considered a “material modification” and require a new service request. As such, it could potentially create interconnection delays. Staff is not aware of any delay incurred by projects wishing to remove storage from their project.

Bid fees. JCP&L generally supported the bid fee recommendation; however, JCP&L suggested that in order to minimize costs to ratepayers, the Straw Proposal should expressly state that these bid fees would be applied as an offset to program administrative fees.

The Joint Solar and Storage Parties commented that the proposed bid fee is “at the low end of the bid fees imposed in other states,” but suggested that, in addition to the exemption for public entities, there should be an exemption for Tranche 3 (Contaminated Lands and Landfills) projects.

CS Energy commented that the proposed fee balances the interest in curbing speculative participation in the CSI program with the desire to offer an open opportunity to development companies of different size and experience levels.

Rate Counsel supported the bid fee, without caps or any provisions for returning the fee to bidders, and supports using the fee to help to cover CSI Program administrative costs.

Response: Staff’s recommendation, as Rate Counsel suggests, includes neither fee caps nor provisions for fee return and proposes using the fees to offset CSI Program administrative costs. Staff continues to recommend that only public entities be exempted from the fee, based on the principle of discouraging speculative bids for all tranches, including Tranche 3 projects.

Additional Requirements. Both CS Energy and the Joint Solar and Storage parties recommended that there be additional prequalification requirements requiring developers to demonstrate relevant project development experience and community outreach.

Response: Staff decided against an experience requirement for several reasons: 1) it would result in increased administrative burden; 2) it would limit the pool of potential applicants; and 3) Staff believes that the PJM/EDC interconnection processes impose sufficient barriers to wholly speculative projects. Regarding the community outreach requirement, there is not currently sufficient evidence that it would meaningfully increase project quality. Furthermore, underlying the limitation of prequalification requirements is the intention remove subjective judgments from the prequalification process as much as possible and make prequalification outcomes very predictable. If attrition among awarded projects becomes a significant problem, the approach for future procurements will be reconsidered.

Requirement for Commercial Operation Date

Project completion deadlines. The Joint Solar and Storage Parties commented that the deadline extension process should be “streamlined” and that projects should have the opportunity for two six-month extensions.

NJRCEV also commented that extensions may be necessary in order to allow time to complete the PJM study process, execute interconnection agreements, and construct the project. They recommended that “a project should be eligible for an extension, from the date the final interconnection agreement is executed.” Staff interprets this recommendation as requesting that a project have a certain amount of time to reach COD post interconnection agreement execution.

Response: Staff recognizes that not every project that qualifies to participate in the first procurement will be able to achieve a three-year COD after award. Accordingly, Staff has recommended that projects be eligible to receive one (1) six-month extension, provided that they can demonstrate progress towards meeting the COD.

It is necessary to balance the benefits of flexibility with the disadvantages of setting up a competition among projects that contemplate significantly different CODs in ways that might change the SREC-II values that will be necessary for their success. For this reason, we do not believe it is appropriate to set COD requirements contingent upon uncertain dates such as interconnection agreement execution dates.

The procurement process will occur annually, and our recommendation is that projects that doubt their ability to meet COD requirements participate in a subsequent year’s procurement.

Bid Process

Per-bidder award limits

Staff requested input on the advisability of per-bidder award limits and/or per-project size limits.

In response, Rate Counsel commented that “Staff should consider limiting the number of awards to a single bidder within a tranche in a given solicitation, particularly in the two specialized tranches for projects sited on the built environment and on contaminated sites or landfills. In the absence of such limits, there is the potential for a single developer to submit multiple bids that dominate a solicitation within an individual tranche, thus creating an appearance of a greater level of competition than is the case. Further, these limits will help assure that no individual developers receive a disproportionate share of CSI financial support.”

In contrast, the Joint Solar and Storage Parties opposed bidder award limits and project size limits. These commenters expect smaller projects to be more common in the early years “due to efforts to avoid the PJM queue.” In the longer term, they noted that siting restrictions will be important factors in determining the project sizes likely to be bid.

Response: Diversification of developers receiving funds has not been an explicit objective of the CSI Program design. To the extent that this were made a distinct program goal, it would potentially conflict with the objective of making awards to the most cost-effective projects. Furthermore, given that developers typically establish new companies for every development project and may develop projects in partnership with other developers, the challenge of tracing

ownership structures and determining which projects are in fact owned by the same developers would not be trivial. Accordingly, Staff has prioritized diversity of project type (through our proposed tranche procurement) but not, at this time, diversity of project developer. This recommendation could be re-examined in future years if it appears that the market is in danger of being dominated by a small number of developers.

Restrictions on ability to bid multiple project options. Staff requested input on whether developers would be likely to submit multiple bids representing different project options, and whether this should be allowed.

CS Energy recommended that the Board limit developers to a single solar-only proposal or a single solar + storage proposal, as applicable, stating that developers should be required to commit to a single conception of a project to ensure the lowest \$/MWh price.

Response: Staff agrees with the commenter that we want bidders to submit whichever option gives them the ability to offer the lowest SREC-II price and believes that the bid selection process will be simplified by requiring developers to submit only one project configuration option.

Auction Procedure

Single procurement approach. Staff requested comments on the proposal to conduct solicitations for all tranches in a single procurement.

Rate Counsel and the Joint Solar and Storage Parties supported the single solicitation approach, with Rate Counsel noting that this approach allows for greater administrative efficiency and the ability to transfer capacity across tranches

Response: Staff appreciates this feedback, and a single procurement approach is proposed.

Order of tranche evaluation

Commenters generally believed that it was unlikely that tranche order would have a significant impact on the amount of each category of project procured. Both the Joint Solar and Storage Parties and NJRCEV commented that it was unlikely that projects in Tranches 2 and 3 would be able to successfully compete in the Basic Grid Supply Tranche. Nevertheless, both parties supported the proposal to begin with Tranche 1; however, NJRCEV also recommended “that 40 MW of capacity from Tranche 1 be shifted equally to Tranches 2 and 3 – to ensure that more projects from those categories are selected.” BlueWave requested that the order of operations be clearly spelled out in the final CSI Program rules.

Rate Counsel indicated that it sees pros and cons in each approach to bid order. However, assuming that the bid price caps that Rate Counsel advocates are adopted, Rate Counsel suggested that considering specialized tranches first would allow for shifting any MWs in those tranches unable to be filled under price caps to the Basic Grid Supply tranche.

Response: Staff agrees that it may be unlikely that considering Tranche 2 and 3 projects in an initial selection competing with Tranche 1 projects will result in greater procurement of the more specialized projects. However, it is difficult to predict how prices will differ among the different

tranches or whether a price cap structure will prevent some tranches from meeting their targets. Given this uncertainty, Staff recommends allowing these projects to compete initially with Tranche 1 projects before competing in their own tranches to allow for the possibility of greater procurement of projects on the preferred land types. Staff has recommended leaving the Board the discretion to re-allocate targeted megawatts if the initial procurement leaves some targets unmet.

Award Process

Solar/Storage MW/MWh ratio.

CS Energy requested clarification on whether the proposed solar/storage ratio is 1 MWdc/4 MWh or 1 MWac/4 MWh (noting that the second is solar industry practice). The Joint Storage and Solar Parties commented that the Board should reconsider whether a solar project may be fully paired with more than four (4) hours of eligible storage in the future; they also suggest that the Board consider subsequent revisions to the CSI Program rules to enable different durations of storage to be proposed and considered.

Response: The goal of the proposed Solar/Storage ratio is not to dictate the duration of storage, or how storage is used, but rather to find a common standard by which solar projects with different quantities of storage can be proportionally compensated. The CSI Program is primarily intended to provide incentives for solar. Since it provides incentives based on solar electricity generation only, without specifying requirements for storage performance, solar projects that come matched with more than four hours of storage for every MW of nameplate capacity will not be eligible for additional compensation under the CSI Program. Staff acknowledges that industry practice is to measure solar generation in megawatts of alternating current rather than direct current; however, to be consistent with existing Board practice, Staff's recommendation is that the megawatts of solar used in the solar / storage ratio be measured in direct current.

Confidential Price Caps

Price cap comments. Rate Counsel and JCP&L both expressed support for price caps. In addition, for the net metered tranche, Rate Counsel suggested that "[t]he solicitation process should include considering net metering revenues when determining the confidential price cap that is used to evaluate bids from net metered projects." The Joint Solar and Storage Parties commented that it is "critical" that any price caps used should be transparent, "in order to ensure industry's ongoing participation."

Response: Staff recommends confidential price caps to help ensure that the CSI Program provides maximum benefit to ratepayers at the lowest cost. Prior to the first procurement, it is difficult to determine how the market will respond, and it is possible that in some tranches, it may not be possible to reach MW targets without paying unacceptably high prices. Additionally, the uncertainty regarding the PJM Queue process creates some doubt about the number of projects that will be ready for the first procurement. The confidential price cap will set a boundary on the commitment during this first procurement.

In response to the request from the Joint Solar and Storage Parties that price caps be transparent, Staff agrees that transparency in the solicitation is valuable, and Staff intends to set up procurement rules that are, overall, highly transparent. In the case of price caps, however, Staff

is concerned that making the price caps public would serve as an unintended signal to bidders and potentially make strategic bidding more likely. The benefits of price discovery through bidding may be lost if price caps are public, and instead recommends that the cost caps be kept confidential.

SREC-II Value Determination

Pay-as-bid pricing. The pay-as-bid received supportive comments from Rate Counsel, JCPL, and CS Energy. No comments advocated for a different approach.

Response: Staff concurs that the pay as bid approach is preferable.

Storage incentive: CS Energy commented on the proposed approach to compensating solar and storage, which ties compensation to solar MWh produced, and would therefore be expected to vary on a monthly basis. CS Energy argued that a steady annual compensation approach would produce better pricing. The commenter believes that the proposed approach may incentivize bidders to strategically “game” their production estimates in their initial bids.

Response: With respect to CS Energy’s concerns about annual vs. monthly solar compensation and its potential impacts on bids, Staff wishes to clarify that the proposed evaluation of solar bids does not include consideration of system production estimates. Solar bids will compete based on the per-MWh SREC-II cost that they bid, and the evaluation will not include an assessment of likely solar production profiles. Solar projects will only receive SREC-II payments for actual solar energy produced. Similarly, for storage, bids will compete based on the per MWh SREC-II adder cost they require, and solar production projections will not be required or considered in the evaluation of bids. Staff recognizes the variable nature of solar electricity generation, but the statute mandates SREC-IIs as the mechanism for incentives under the CSI Program. The permanent storage program may have a different structure.

SREC-II Payment Structure

Indexed SREC-IIs vs Fixed SREC-IIs. Many of the comments on SREC-II payment structure focused on the choice between Indexed SREC-IIs and Fixed SREC-IIs.

RECO, Rate Counsel, NJRCEV, and JCPL raised the concern that Indexed SREC-IIs shift risks from developers to ratepayers, particularly in an evolving regulatory landscape that may create volatility in wholesale energy markets.

Rate Counsel noted that spot energy market prices are likely to decrease, which would lead to higher Index SREC-II payments, as well as exposing consumers to SREC-II price volatility. RECO recommended that if Indexed pricing is used, the Board should impose a bid strike price ceiling and should review Indexed SREC-II pricing frequently to see if it is “providing financial benefits to ratepayers.”

NJRCEV commented extensively on their reasons for recommending a fixed-REC mechanism. These reasons include the importance of preserving market price signals; concerns that at this moment of high energy prices, declines over time, leading to increased Index-SREC-II payments, are likely; the administrative difficulty of managing hundreds or perhaps thousands of Indexed SREC agreements; and potential conflicts with PJM and FERC market rules.

Other comments (from CS Energy and the Joint Solar and Storage Parties) strongly supported an Indexed SREC-II approach. Commenters cited the need for price certainty and the ability to save costs through lower financing rates, and argue that these benefits will result in lower costs to consumers; they point to experience with indexed RECs in NYSERDA. They also note that under an indexed REC approach, ratepayers can benefit when developers receive higher wholesale market prices. CS Energy, observing that “energy and capacity prices tend to increase over time,” asserted that “the indexed-REC structure forces developers competing for limited capacity to bid the lowest bundled-rate they think they can deliver.”

The Joint Solar and Storage Parties cited Staff’s analysis as showing that in most scenarios, an Indexed REC approach leads to lower overall payments. They recommend, further, that given the upcoming PJM transition to using Electric Load Carrying Capacity (“ELCC”) to calculate generator capacity values, the Board should consider incorporating “the ELCC approach into its calculation of the capacity reference price.”

Response: Staff acknowledges that Indexed RECs provide risk management benefits to project owners and that the analysis did show that, on average, ratepayers could experience savings resulting from an Indexed REC approach. However, the potential ratepayer consumer benefits found were relatively small. The current market environment for solar power is particularly expensive in ways not reflected in Staff’s model, raising the risk that subsequent declining prices will find New Jersey ratepayers facing increasing SREC-II payments under an Indexed REC approach. Moreover, as pointed out in the comments, the potential exists for significant change coming in how capacity is compensated in PJM; another factor that increases the uncertainty of future Indexed SREC-II payments. Given the relatively small average benefits projected in the model, at this time a Fixed REC payment approach is preferred because of its lower risk for New Jersey ratepayers.

15-year vs. 20-year SREC-IIs. The Joint Solar and Storage Parties recommended a 20-year SREC-II award “to make prices more competitive” by reducing project risks, especially if an Indexed SREC-II approach is not chosen.

Response: Staff understands that a longer-term contract would reduce project risks for developers, but sees the need to balance developer risks with ratepayer risks around contract length. After analysis of the likely impact on SREC-II prices, Staff continues to recommend the 15-year contract length because the increase in costs to ratepayers in years 15 – 20 appears significant, while the net-present value of those incentives today is relatively low. Thus, 15 years appears to balance the need for a long-term incentive with the desire to ensure affordability.

Contractual vs. Administrative commitments. RECO supported the use of administrative rules, rather than contracts, on the grounds that such rules would provide transparency and avoid the administrative costs associated with contracts. The Joint Solar and Storage Parties further stated that “[t]he BPU should reconsider providing SREC-IIs through administrative rules developed pursuant to statute, not through contracts, particularly if BPU adopts the option for indexed RECs. This is consistent with how other states, such as New York and Illinois conduct their successful competitive solicitations.”

Response: Staff recommends an administrative commitment approach because it agrees that a contractual approach would result in greater administrative burdens and also in potentially

significant delays in the SREC-II award process.

Procurement Frequency

Procurement frequency. The Joint Solar and Storage Parties joined Rate Counsel in saying that an annual procurement was an adequate target. The Joint Solar and Storage Parties added, however, that this frequency should be “subject to review and revision in light of changes to the PJM interconnection process.”

In contrast, NJRCEV strongly supported both a larger program in terms of procurement targets and more frequent solicitations.

Response: An initial yearly procurement is proposed, with a target of providing at least three months between conclusion of one annual procurement and the due date for submission of proposals to the next annual procurement. Staff concurs that this schedule should be subject to review and revision if changes to the PJM interconnection process or other events merit such revisiting. Likewise, the size of the targets may be reviewed if developments in the market or other factors warrant a change.

Initial Procurement Targets

The New Jersey State Agricultural Development Committee comments that the 140 MW annual cap for Basic Grid Supply may be too high and may result in “an excessive amount of greenfield development and create a disincentive for the project innovation necessary to result in cost effective projects on preferred sites.” In a related comment, they suggest that more than 40 MW should be allocated to net metered projects.

Rate Counsel supported the proposed levels but cautioned that the target capacities for the specialized tranches may be aggressive. Rate Counsel recommended that Staff “develop a contingency plan in case there are undersubscribed levels in either or both two specialized tranches,” specifying that this should not involve “rolling over” underutilized capacities to future solicitations.

The Joint Solar and Storage Parties supported the proposed procurement targets, but with a recommendation that 20 MW of the built environment capacity instead be dedicated to a “floating solar” tranche. They suggested if targets in any tranche cannot be met, the remaining MW should be allocated to other tranches where there are still competitive bids.

Response: Staff appreciates the concerns raised by these comments. It is difficult to predict, in advance of the solicitation, whether targets in any of these areas will be too high or too low. Given this uncertainty, Staff agrees that it is important to consider what steps will be taken if targets in any tranche cannot be met. For this initial solicitation, Staff will present the results of the auction to the Board, and the Board can exercise discretion in determining whether it is appropriate to shift additional MW into alternate tranches, or carry over the portion of any unfilled tranches to the next CSI Solicitation.

Redistribution of capacity: REV recommended redistribution of undersubscribed tranches to ensure 300 MW of installed solar annually.

Response: Staff has recommended that the Board exercise discretion in the case of undersubscribed tranches.

Comments on project attrition rates

Daymark and Staff requested comments on whether we should expect either higher or lower project attrition rates in the next few years.

Rate Counsel commented that by removing regulatory uncertainty and implementing a regulatory commitment to providing a long-term revenue stream to winning projects, the ADI Program and the new CSI program may experience lower attrition than in the past.

In contrast, CS Energy commented that they expect higher levels of attrition during the PJM interconnection transition cycles, when PJM will be undertaking larger than usual cluster studies, and also imposing higher readiness payments. Once the transition cycles are completed, however, CS Energy predicts lower attrition levels, “due to the higher costs associated with initial project applications and the smaller size of the clusters (relative to the transition cycles).”

The Joint Solar and Storage Parties also noted the proposed increases in cost of participation for developers under the new PJM interconnection rules, and noted that this may result in “fewer developers hav[ing] the financial wherewithal to submit an application.”

Response: Staff appreciates these perspectives. It is difficult to predict actual attrition rates. This is a program metric Staff plans to track carefully as an input into any future adjustments to annual procurement targets.

First Procurement Timing

Time between authorization and first procurement

Staff requested comments on the length of time needed between Board authorization and the first procurement.

CS Energy commented that “[t]here should be sufficient time for bidders to digest the final CSI program rules and ensure their projects are set up for success in advance of the first procurement,” and recommended that the first procurement occur within three (3) to six (6) months of authorization. The Joint Solar and Storage parties recommend that the first procurement occur “expeditiously.”

Response: The initial solicitation is planned within the timeframe suggested by the commenters.

Timing of procurements in relation to the PJM Queue

Staff requested comments on whether it would be beneficial to “time” the procurement with regard to the PJM queue.

In response, CS Energy recommended that “[p]rocurements should be timed to coincide with the

closing of whichever phase of PJM's new study process staff concludes should be a pre-qualification requirement.”

The Joint Solar and Storage Parties commented that as long as timelines and program requirements are clear, developers can manage development risk and timelines.

Response: Staff appreciates the suggestion to coordinate the procurement with PJM study phases and has recommended that the Board re-visit this idea in future procurements.

Program Registration Process and Requirements

Requirement for Verification of high Installation Density. CS Energy supported the proposal that any project which exceeds 300kW/acre must be verified by a licensed professional engineer. On the other hand, NJRCEV commented that “This policy does not provide for future efficiencies in panel technology or the like; and therefore, is inappropriate for long-term program design,” and suggested that this requirement be removed.

Response: Staff has taken the comment on potential future efficiencies under advisement and recommends reconsidering the requirement for future-year procurements if a large number of projects meet this threshold. Staff does not seek to bar participation by projects exceeding 300kW/acre, only that they must certify the design.

Siting constraints. The Joint Solar and Storage Parties requested additional details on how the procurement would work to ensure compliance with siting constraints; specifically, limits on development on agricultural soils and soils of statewide importance.

They expressed concern about “lack of clarity around how and when a project reserves their spot within the registration system for projects subject to caps” and they requested details on “how or when a project reserves their spot counting towards the statewide or county development limit for prime agricultural soils/soils of statewide importance within a county ADA.” The commenters stated that they need to know when and where the siting constraint cap calculator will be posted with up to date values, whether there is adequate land available, and whether a project site will fit within the cap before they are willing to invest considerable sums of money.

Response: Staff notes that the Order provides additional details on how compliance with land use caps will be incorporated into the procurement process. Covered agricultural land will be “reserved” upon a project receiving notice of conditional registration in the CSI Program.

Process for ensuring land use restrictions are not exceeded. CS Energy noted that it is important to notify developers as soon as possible when land use thresholds are in danger of being exceeded, so that developers do not continue to invest in projects that will not be able to be pursued due to development limits; “Sunk Spend” on such projects represents a significant risk in the commenter’s opinion. CS Energy recommended public release of this information as soon as possible.

Response: Covered agricultural land availability will be tracked and the number of acres developed or reserved for development publicly available. Each project that does not exceed the limits on covered agricultural land will be allowed to participate in the solicitation.

Program Deadlines and Post-construction certification

Project Certification requirements. The ADI Program includes a requirement that projects submit a Post Construction Certification Package. In response to a question about whether such a requirement would be appropriate for the CSI program, Rate Counsel commented that “A post construction certification package can help verify that a winning bid has met its completion and COD requirements.” The Joint Solar and Storage parties agreed, in general, but noted that “much of the current certification package elements would not be necessary” for the CSI program, so they suggest that a tailored Post Construction Certification Package be designed for the CSI Program.

Response: Staff agrees with both Rate Counsel and the Joint Solar and Storage parties, and has proposed to implement post-construction certification package with elements specifically targeted to CSI projects.

Other Comments

Administrative responsibility. JCP&L noted that the Straw Proposal does not detail whether the auction process will be administered by the Board and its staff and/or contractors, or by the EDCs. JCP&L recommended that the Board administer the program but suggested that if the EDCs are to administer the auction, cost recovery should be provided for.

In addition, JCP&L noted that the current agreement with InClime does not cover their participation as an administrator for the CSI component of the SREC-II program.

Response: The Board, Board Staff, and its contractors will administer the auction process; the Board will require the EDCs to procure an SREC-II Administrator.

Program reviews. The Joint Solar and Storage Parties commented that the BPU should consider a three-year full-scale review of the CSI program, similar to the ADI Program’s one-year ‘quick review’ and subsequent three-year full-scale reviews. The commenters stated that a three-year review of the CSI Program will enable the BPU to recommend adjustments based on unforeseen factors, such as unanticipated changes at PJM, how siting rules are impacting development, new federal policy, and significant market underperformance. They believe that this review would help evaluate the appropriateness of the tranches, capacity targets, and maturity requirements to ensure program success.

Similarly, the NJRCEV recommended that these procurements should be monitored, and the size and frequency adjusted based on installation trends and reevaluated on an annual basis - similar to the ADI Program.

Response: The Solar Act of 2021 specifies reviews and reports on the SuSI Program and these will be done accordingly.

Cost recovery. JCP&L urged that the Board ensure full recovery of SREC-II costs for EDCs, including program administration costs.

Response: Staff agrees with the comment and has recommended that recovery of prudent costs be included.

Participation of Public Entities. The Joint Solar and Storage Parties commented that “Public entities interested in participating in the CSI Program should be permitted to use an RFQ process in the selection of their development team. This would permit price and other factors to be evaluated by the public entity who will make the final selection so that they would not be constrained solely to the level of discounting offered to their residents.” Additionally, they supported exempting public entities from the proposed bid fee of \$1000 per MW and recommend that the BPU consider additional extensions to the proposed 3-year COD requirement for projects serving public entities.

Response: There is nothing in the proposed CSI procurement process that would prevent public entities from using an RFQ to select their development team and selecting that development team based on criteria other than price alone. One option for public entities would be to secure a potential development partner and work with that partner to develop a proposal for the SREC-II procurement. Staff has recommended exempting public entities from the proposed bid fee, while believing that it would be premature to assume that additional extensions will be needed for public entities, especially if many come to the bid process with a developer partner already selected.

Siting Straw Comments

The Board received a total of 11 written comments on the Siting Straw proposal published on March 26, 2022, DOCKET NO. QO21101186

Comments were received from:

1. New Jersey Division of Rate Counsel (Rate Counsel)

Electrical Distribution Companies

2. Public Service Electric & Gas Company (PSE&G)

Elected Officials / Public or Quasi-Public Entities

3. Montgomery Township (Montgomery)
4. Berkeley Heights Environmental Commission (Berkeley Heights EC)

Solar Developers / Industry

5. Joint Solar and Storage Parties, consisting of:
 - o Solar Energy Industries Association (SEIA)
 - o New Jersey Energy Coalition (NJSEC)
 - o Mid-Atlantic Renewable Energy Coalition Action (MAREC Action)
 - o American Clean Power Association (ACP)
6. Enel Green Power North America (ENEL)
7. CEP Renewables (CEP)
8. CS Energy (CSE)

NGOs / Community Organizations / Environmental Groups

9. American Farmland Trust (AFT)
10. New Jersey Conservation Foundation / New Jersey League of Conservation Voters (NJCF/ NJLCV)

Public

11. Mr. Menegus

Stakeholder comments are grouped by topic. Comments raised in multiple sections are addressed once.

Applicability of Siting Criteria

Applicability beyond incentivized projects. Many commenters, including Rate Counsel, the AFT, NJCF / NJCLV, and Berkeley Heights EC, supported the applicability of Siting criteria to all CSI-eligible solar facilities. Rate Counsel noted that general applicability of Siting criteria as well as maturity requirements will prevent “hoarding” of available space.

On the other hand, CSE disagreed that Siting requirements should apply to non-SuSI projects, claiming that general applicability will drive developers who otherwise would not need an incentive to seek one, and thus drive up cost to ratepayers. Enel advocated for separate Siting standards for solar installations awarded an incentive under the CSI Program versus installations who do not receive one.

Response: Staff has concluded that the legislature intends to limit the total impact of solar installations on open space and farmland while promoting further solar development in New Jersey. The Solar Act of 2021 provides a clear mandate to the Board to develop rules that would apply to all grid supply solar as well as all net metered non-residential solar over 5 MW, regardless of whether these projects seek an incentive. Staff further shares Rate Counsel's concern that differentiating between incentivized and non-incentivized solar could open the door to hoarding of available farmland or otherwise anti-competitive behavior.

Preferred land uses. The commenters who addressed preferred land uses, including Rate Counsel, PSE&G, NJCF/ NJLCV, Montgomery Township, Berkeley Heights EC, and Mr. Menegus, were unanimous in their support for the stated preference for solar on the built environment and contaminated sites and landfills.

PSE&G advocated for establishing a target for utility projects on contaminated lands using the "Solar 4 All" model, to control solar development on open space and agricultural land.

Response: Staff appreciates the commenters' support for the siting preferences. With respect to projects on contaminated lands, Staff notes that there has been robust interest in solar development on landfills and brownfields in New Jersey, as is clear from the current pipeline of solar projects. Staff also notes that the Solar 4 All model resulted in solar that was substantially more costly to ratepayers than solar procured from the competitive market. Further, Staff sees no sign that there is a lack of interest in the solar program that would necessitate allowing for development of solar where ratepayers bear all of the costs and risks associated with the development and operation of these facilities.

Floating solar. The Joint Solar and Storage Parties recommended allowing certain applications of floating solar to qualify as a preferred land use and compete in the CSI tranche corresponding to the preferred land use.

Response: Staff has consulted with NJDEP, and while it agrees that certain floating solar applications may constitute a beneficial land use, it is not apparent that all floating solar facilities are beneficial to the environment. Instead, there are a number of site-specific factors that determine whether a floating solar facility is beneficial to the environment, including the presence or absence of endangered species, marine and avian life, and other similar factors.

Classification of forested land

Definition of forested land. Both NJCF/ NJLCV and Montgomery Township expressed support for the prohibition of solar on forested lands. On the other hand, CSE proposed to use a tree maturity requirement such as tree trunk diameter, as part of a less restrictive definition of forested lands. In addition, both the Joint Solar and Storage Parties and CEP expressed concern with the Siting Straw's definition of forested lands to include all areas under the Anderson code classification 4000-series. These commenters proposed a more limited definition, including only Anderson codes 4120, 4220, and 4322, which all are defined as areas having over 50% crown closure. Furthermore, CEP requested additional consideration for areas dominated by invasive species or impacted by infestations such as the emerald ash borer, as well as an exception for commercially harvested areas.

Response: The definition as proposed follows the definition of forestland used by NJDEP, which uses 10% crown cover as the limit. Staff notes that, while the definition of forested lands may be somewhat restrictive, the waiver process offers a clear path for developers to get the Board's approval, and allows for appropriate consideration of all relevant facts, while the clear delineation of forested lands allows for a streamlined screening process for all projects. Staff recognizes, as noted by industry commenters, that the various parameters cited as indicative of quality of a forest could be appropriate factors to consider in the determination of whether solar development on a specific parcel is in the public interest. However, those site-specific factors are best addressed as part of the waiver process.

Screening for Specific Land Use Categories

Use of GIS data. The Joint Solar and Storage Parties commented that they believe that GIS data should not be determinative, since it can be incomplete or out-of-date.

Response: Staff recognizes the commenters' concern, but notes that the GIS data in most cases will be used primarily as a screening criteria, or in combination with other factors. In case of insufficient clarity, the stated definitions will apply.

Solar on Agricultural Land

Farmland designation. The Joint Solar and Storage Parties proposed using a clear land use definition in the farmland designation and excluding inactive cropland. CSE recommends including "prime soils if drained" in the calculations for available farmland and suggested not excluding land that may be identified for agricultural use, but overlaps with another resource. The AFT recommended using their "productivity, versatility, and resiliency" ("PVR") analysis in the identification of the best farmland. Montgomery Township and Mr. Menegus advocated for making all solar on farmland subject require a waiver.

Response: Staff notes that the definition of farmland included in the calculation of Statewide and per-county caps includes agricultural land use, and Staff sees no reason to change the definition to account for drained versus undrained soils. Staff further notes that the definition works both ways: all soils included in the calculated caps, will also be subject to them. Staff, in coordination with the Department of Agriculture and SADC has developed the definition proposed for farmland and considers this most in line with the text and intent of the Solar Act of 2021, which specifies limits for "prime soils and soils of Statewide importance."

Soil "marbling". The Joint Solar and Storage Parties noted that soils are often "marbled", so that projects will often need to be placed on several classes of soil.

Response: Staff is aware of the "marbling" of soils but feels that the caps provide for a reasonable opportunity to develop solar on land containing covered agricultural land. Only covered land as defined will be included in the calculations of solar towards the caps.

Calculation of land used for solar. Mr. Menegus recommended that the calculation of land used for solar should include setbacks.

Response: Staff considers the intent of the siting provisions regarding farmland in the Solar Act of 2021 to be to limit the quantity of farmland that will be taken out of active farming operation or severely limited in agricultural use and has defined the calculations accordingly, without a requirement for additional setbacks. While local zoning laws or developer preferences may include setbacks, Staff does not believe that they should be mandated as part of the siting program.

Calculation of 2.5% Statewide threshold. Rate Counsel and NJCF/ NJLCV argued that the calculation for the 2.5 percent Statewide threshold should exclude preserved farmland. NJCF/ NJLCV noted that with the calculation in the current form, 8,500 acres of the best farmland could be developed for solar.

Response: Staff notes that the Solar Act of 2021 specifically excludes preserved farmland from the designation of the 5 percent County Concentration Limit, but does not exclude preserved land in the designation of the 2.5 percent Statewide threshold. Staff relies on this distinction in the statutory language and declines to make the inference suggested by commenters.

5% County Concentration Limit applicability. The Joint Solar and Storage Parties and CEP both commented that they believe that the 5 percent limit in section 6(f) of the Solar Act of 2021 would only come into effect when the 2.5 percent Statewide Threshold has been reached. CEP claimed that Staff is making the determination based on section 6(b)(2) which states the Board is to "minimize, as much as is practicable, potential adverse environmental impacts;" and that the Board is making a policy determination that solar facilities present a more adverse environmental impact than farming. CEP argued that there is no justification for this policy decision and that the opposite is true. CEP further argued that several counties with the highest calculated available farmland do not have infrastructure to support solar development, which would eliminate a large portion of available farmland.

CSE argued that only preserved farmland, and not otherwise preserved land should be excluded from the calculation, and concurred with the Joint Solar and Storage Parties on the applicability of the 5 percent limit.

Response: Staff, in cooperation with the Department of Agriculture, SADC, and DEP, has developed the recommendation based on the agencies' common understanding of section 6(f) of the Solar Act of 2021; namely the 5% county concentration limit is a separately enforceable statutory requirement. Staff further notes that solar development on farmland that is either not in an Agricultural Development Area, or not classified as prime soils or soils of Statewide importance, will not be subject to any restrictions under the proposed siting rules, and that such farmland constitutes a significant land area that now is open to solar development.

"Reservation" of farmland. The Joint Solar and Storage Parties requested additional clarification on the timing of projects' farmland allocation, and suggest developing specific criteria in case of a tie in bid price when two (2) or more projects taken together would exceed a cap.

Response: As specified in the Board's Order, farmland subject to the caps will be allocated to projects at the time of the issuance of a notice of conditional registration for the CSI Program. Staff does not consider it likely that a tie as described by the commenter will occur and has recommended that the Board retain the right to make a determination in this case.

Waiver Process

Waiver provisions. Many commenters, including Rate Counsel, the Joint Solar and Storage Parties, NJCF/ NJLCV, Montgomery Township and Berkeley Heights EC requested clarity on the waiver process. All of these parties supported the proposal for an expedited waiver process for projects proposed on the built environment, although Rate Counsel noted a concern with extending this process to all impervious surfaces with potential “gaming” of the system. Several parties, including NJCF/ NJLCV, Montgomery Township and Mr. Menegus proposed a requirement for public participation as part of the waiver process.

Response: Staff thinks that the Board’s well established petition process, which will be conducted including appropriate consultation with other State agencies, provides sufficient due process, transparency, and opportunity for public input to satisfy these concerns. Staff appreciates the support for an expedited process concerning projects proposed exclusively on the built environment. Staff agrees with Rate Counsel about the desirability to prevent “gaming”, and has worked with other agencies in defining the built environment and eligibility for an expedited waiver to address this.

Contaminated Sites and Landfills waiver. CEP advocated for a “waiver by rule” to apply to contaminated sites and landfills, if located in otherwise prohibited areas of the State.

Response: Staff agrees with the sentiment that contaminated sites and landfills constitute preferred siting for solar. However, determination of whether a project is in the public interest will depend on, among other things, the specifics and extent of the contamination, where the land is located, the nature of the conflict with the siting rules, and other similar factors. Contamination analysis can be a complicated process and is best done on an individual basis through the consultation process with NJDEP or other agency with subject matter expertise in the underlying land use that will be part of a determination on a waiver petition.

Mitigation guidelines for waivers. Several commenters, including Rate Counsel, the AFT, NJCF/ NJLCV, and Berkeley Heights EC commented that mitigation should not be used as a substitute for the determination of whether a project is in the public interest. NJCF/ NJLCV and Berkeley Heights EC proposed mitigation guidelines that follow Green Acres diversion rules.

Response: Staff agrees that mitigation does not supersede or diminish the statutory requirements that will allow the Board to grant a waiver. However, proposed mitigation is one of many factors that the Board may consider in determining whether a waiver is in the public interest. Since there are a wide variety of lands subject to the waiver requirement, general mitigation guidelines do not seem appropriate at this point. Instead, consideration of mitigation will be handled on a case-by-case basis.

Construction guidelines

Applicability of Construction standards. Rate Counsel expressed support for the Construction guidelines proposed in Appendix B of the Siting Straw, which it sees as in line with the legislative directive to preserve the State's agricultural resources.

Rate Counsel further requested clarification that all CSI-eligible facilities are included, not just grid supply facilities, and notes the statutory requirement for pollinator standards.

Response: Staff appreciates Rate Counsel's support. Staff agrees with and has clarified the definition of solar projects subject to the guidelines, as well as the requirement for adherence to the pollinator standards developed by DEP.

General comments on construction guidelines. The Joint Solar and Storage Parties commented that they believe that the proposed construction guidelines are overly broad and prescriptive. CEP Renewables indicated that it sees no justification in the statute for developing construction guidelines, claiming that solar development is more environmentally friendly than farming. CEP Renewables further noted that solar facilities are already subject to existing soil erosion and sediment control regulations, which address topsoil removal and erosion mitigation.

Response: Staff is sensitive to the potential for duplication of and conflict between different agencies' regulations, and has worked with the Department of Agriculture and SADC to eliminate requirements that are already covered under the N.J. Soil Erosion and Sediment Control Act (N.J.S.A. 4:24-39 et seq.) and implementing Rules at N.J.A.C. 2:90-1.0 et seq. Staff notes that the Solar Act of 2021 contains the provision that the siting criteria shall "*minimize, as much as practicable, potential adverse environmental impacts.*"⁴⁷

Specific comments on construction guidelines. CS Energy objected to the prohibition of "cut and fill" on all covered agricultural land, stating that these activities are often required for access roads, pads, stormwater controls and other pieces of infrastructure and that best management practices, such as topsoil segregation, could minimize the impacts. In addition, the commenter asserted that requiring timber mats or topsoil stripping across the entire occupied area is unnecessary and inconsistent with the prohibition on cut and fill. In the commenter's opinion, stripping topsoil from the entire solar panel area, or just in the travel lanes between panel rows is not feasible for the size of projects contemplated by this program. The commenter recommended reviewing the New York construction standards, which allow low-ground pressure vehicles to operate without timber mats or topsoil removal, in conjunction with post-construction decompaction requirements for temporarily impacted areas and following project decommissioning. Finally, the commenter found the proposal does not allow work when soil moisture is excessive to be very detrimental to large solar projects, since such project construction involves coordination of contractors from multiple trades as well as the delivery and offloading of equipment and materials delivered to the site. The commenter recommended that instead the Board and NJDA staff, in consultation with the industry, place the burden of managing and mitigating these impacts on the project and Project Inspector.

Response: Staff appreciates the detailed input and has worked with NJDA and SADC to minimize the requirements specifically identified as onerous or unclear, largely replacing them with a reference to existing regulations. Further, Staff agrees with assigning responsibility for compliance to the environmental inspector as required in the Board Order and proposed rules.

⁴⁷ See L. 2021 c.169 § 6(b)(2).

Soil compaction monitoring. AFT stated that bulk testing, which is done in a laboratory, must be distinguished from penetrometer testing, which is done in the field, and that the requirements for each should be clarified. AFT also requested greater clarity regarding how soil compaction baseline test results are shared and recommends making this data publicly available in aggregate for analysis and comparison following decommissioning and restoration. The Joint Solar and Storage Parties claimed that soil compaction testing every 250 feet both pre- and post-construction is unduly burdensome and impractical for larger facilities, given their stated belief that compaction is largely only a concern at access roads and laydown areas.

Response: Staff appreciates the detailed input and has worked with NJDA and SADC to minimize the requirements specifically identified as onerous or unclear, largely replacing them with a reference to existing regulations.

Timeline for seeding and mulching. The Joint Solar and Storage Parties asserted that the requirement for seeding and mulching within seven (7) days of disturbance may be impractical and should be expanded to 90 days or the length of the planting season for the contemplated seed mixture, whichever is longer. On the other hand, AFT recommended changing the “7-day rule” to a “3-day rule,” stating that exposed soils and particularly prime farmland soils are quickly impacted.

Response: After consultation with the other agencies, Staff defers to NJDEP’s “Standards for the use of Pollinator-Friendly Native Plant Species and Seed Mixes in Grid Supply and Select Net Metered Solar Facilities” for vegetation management practices.

Environmental inspector. The Joint Solar and Storage Parties requested that the guidelines allow an employee of a developer rather than a third party to be the environmental inspector. On the other hand, AFT suggested using environmental inspectors experienced in solar development to ensure both compliance and adherence to Best Management Practices, (“BMPs”) during construction, operation, and return to agricultural production.

Response: Staff notes that the guidelines specify a requirement for experience with solar development as well as agricultural practices, but do not prohibit the environmental inspector from being a developer employee.

Solar designation as “permeable”. CEP Renewables claimed that, since solar facilities are considered permeable, they do not significantly add to runoff that contributes to erosion.

Response: Staff is aware of the “non-impervious” designation in L. 2010 c.4, but interprets this law as amending various planning board laws and generally exempting solar panels from impervious surface definitions when those panels are added to an existing (usually developed and otherwise regulated) property. However, Staff also aware that runoff from solar panels has been known to cause significant erosion and should be addressed. None of the definitional proscriptions in the 2010 solar panel law apply to Title 48 (public utilities) or to Title 4 (Agriculture). In addition, the Solar Act of 2021 generally supports managing erosion in grid-supply solar facilities, and directs NJDEP to develop pollinator friendly plant standards to this end. It also permits the Board to consider the environmental impacts of solar facilities. These provisions support Staff’s conclusion that the Legislature intended for the Board, NJDEP and Agriculture to model the various environmental effects of the solar panels as those panels act on location, and

not presume that they are, for instance, non-impervious cover as a matter of law.

Intention for return of land to agricultural use. CEP Renewables called the rationale that land should be preserved to return to farming "speculative", claiming that the Legislature intended the amount of land available under the caps to be permanently converted to solar if the land owner decides so.

Response: Staff is aware of the potential for permanent conversion away from farmland as well as the Legislature's clear intent to limit the impact of solar on New Jersey's best farmland. In consultation with other agencies, Staff has determined that it is desirable in the case of solar on covered agricultural land to retain the option of either full restoration to agricultural use, or a combination of agricultural production with solar in a future dual use installation. The construction standards are designed to enable this future optionality.

APPENDIX B: DAYMARK REPORT



NEW JERSEY COMPETITIVE SOLAR INCENTIVE (CSI) PROGRAM DAYMARK REPORT TO THE BOARD

NOVEMBER 21, 2022

PREPARED FOR

New Jersey Board of Public Utilities

PREPARED BY

Daymark Energy Advisors

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LIST OF ACRONYMS

ADA	Agricultural Development Area
ADI Program	Administratively Determined Incentive Program
Board	New Jersey Board of Public Utilities
COD	Commercial Operation Date
CSI	Competitive Solar Incentive
CVar	Conditional Value at Risk
Daymark	Daymark Energy Advisors
dc	direct current
EMP	New Jersey's 2019 Energy Master Plan
FERC	Federal Energy Regulatory Commission
GATS	PJM Generation Attribute Tracking System
IPRTF	PJM Interconnection Process Reform Task Force
LMP	locational marginal price
MW	megawatt
NJBPU	New Jersey Board of Public Utilities
NJDEP	New Jersey Department of Environmental Protection
NPV	net present value
OREC	offshore wind REC
PPA	power purchase agreement
REC	Renewable Energy Certificate
ROW	right-of-way
RPS	Renewable Portfolio Standard
SEIA	Solar Energy Industry Association
SREC	Solar Renewable Energy Certificate
Staff	New Jersey Board of Public Utilities Staff
Straw	Competitive Solar Incentive Program Straw Proposal
SuSI Order	In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C. 17, NJBPU Docket No. QO20020184, Order dated July 28, 2021
SuSI Program	Successor Solar Incentive Program
TI Program	Transition Incentive Program
TPS/BGS Providers	Third Party Suppliers and Basic Generation Service Providers
WACC	Weighted Average Cost of Capital

I. INTRODUCTION

This report was developed by Daymark Energy Advisors (“Daymark”). The recommendations in this report are the product of Daymark’s analysis and of a collaborative process with the New Jersey Board of Public Utilities (“NJBPU” or “Board”) Staff (“Staff”) and of consideration of stakeholder input provided through a series of four stakeholder meetings and written stakeholder comments.

A. Background and procedural history

On July 28, 2021, the NJBPU voted unanimously to adopt the Successor Solar Incentive (“SuSI”) Program (“SuSI Order”).¹ The SuSI Program is designed to implement the Clean Energy Act of 2018 (P.L. 2018, c. 17) and the Solar Act of 2021 (P.L. 2021 c. 169). The SuSI Program sets the State on a path to double its solar capacity by 2026 with 3,750 megawatts (“MW”) of new capacity. This target is informed by New Jersey’s 2019 Energy Master Plan (“EMP”) and Governor Murphy’s goal of achieving 100% clean energy by 2050.

There are two components of the SuSI Program: (1) the Administratively Determined Incentive (“ADI”) Program and (2) the Competitive Solar Incentive (“CSI”) Program. The ADI Program offers a fixed incentive for net metered residential projects, net metered non-residential solar projects of 5 MW or less, and all community solar programs. Additionally, the ADI Program includes an interim program for solar projects located on properly closed sanitary landfills, brownfields, and areas of historic fill that were previously eligible for certification under Subsection (t) of the 2012 Solar Act.² The CSI Program, which is the subject of this report and its recommendations, will cover grid supply projects (that is, projects connected to the grid in front of the meter that sell electricity into the wholesale markets) and net metered non-residential projects greater than 5 megawatt (MW).³

This report is informed by legislative mandates, prior Board actions, and stakeholder feedback, as summarized in “Section III: Background,” and lays out recommendations for the design and implementation of the CSI Program in “Section IV: Recommendations”. It

¹ In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C. 17, NJBPU Docket No. QO20020184, Order dated July 28, 2021.

² P.L. 2012, c. 24. Subsection (t) provided SRECs to owners of solar electricity power generation projects located on such areas.

³ For the purposes of this Report, all MW will be direct current (DC), unless specifically indicated.

is submitted for the Board's review in considering the approval of proposed rules that will govern the CSI Program.

II. SUMMARY OF RECOMMENDATIONS FOR THE CSI PROGRAM

A. Tranche procurement

As stated in the Solar Act of 2021, the CSI Program will be structured as a competitive procurement that will target an average of 300 MW of new solar projects annually. Eligible projects will include all grid supply projects and net metered non-residential projects greater than 5 MW.

Daymark recommends that the CSI Program be structured so that it consists of separate categories, or tranches, to ensure that a range of competitive solar project types are able to participate, despite, in some cases, potentially different project cost profiles. Our recommendation is that the CSI Program should establish the following tranches:

Tranche 1: Basic Grid Supply

Tranche 2: Grid Supply on the Built Environment

Tranche 3: Grid Supply on Contaminated Sites and Landfills

Tranche 4: Net Metered Non-residential Projects above 5 MW

Tranche 5: Storage Paired with Grid Supply Solar

B. Project qualification and maturity

Daymark recommends adopting project qualification and maturity requirements designed to ensure that selected projects have a high likelihood of reaching commercial operation. Our recommendations include a project pre-qualification step that would require that a project meet one of the following criteria: (i) demonstrate completion of a PJM Feasibility Study (under the old process), or, under the new process (if approved by FERC), have completed Phase 1, (ii) demonstrate a comparable interconnection position in a state-jurisdictional queue, or (iii) for net metered projects, demonstrate equivalent approval of their utility interconnection request by the energy distribution company. In addition, projects would be required to pay a \$1,000 per MW non-refundable solicitation participation fee and demonstrate their qualification to participate in the tranche to which they wish to apply. Using pre-qualification through queue position

would avoid having to engage in a more complex, subjective process relating to permitting, securing right of ways, or evidence of public support.

All projects under the CSI Program would be required to achieve a Commercial Operation Date (“COD”) deadline of three years after registration in the Program,

C. Auction procedure

For each tranche, this Daymark proposes a MW procurement target. Two options were considered regarding the order of evaluations:

1. An initial competition of all projects from Tranche 1, 2, and 3, followed by targeted competitions for remaining projects in Tranches 2 and 3.
2. Competitions for projects in Tranches 2 and 3 conducted first, with all remaining grid supply projects competing in Tranche 1.

In their comments, some stakeholders noted that they liked the idea of allowing projects in Tranche 2 and 3 to compete with Tranche 1 projects, though they were doubtful that, for the most part, the more specialized projects would be competitive with basic grid supply projects. Other stakeholder comments expressed concern that there might not be enough well-priced bids for the more specialized tranches to reach procurement targets.

We recommend Option 1, which gives Tranche 2 and Tranche 3 projects additional opportunities to compete. If MW targets for any tranche are not met, we further recommend that the procurement administrator will report to the Board and the Board may, at its discretion, choose to award additional MWs in other tranches to reach overall procurement targets.

D. Auction price result

The Solar Act of 2021 specifies that incentives for solar projects in New Jersey will be provided through the creation and distribution of solar renewable energy certificates known as “SREC-IIs.” We recommend that SREC-II values should be determined using a pay-as-bid approach, which will ensure that ratepayers are not paying any individual project above the amount bid.

E. SREC-II payment structure

After considering both Indexed SREC-IIs and Fixed SREC-IIs, Daymark’s final recommendation is that although our analysis suggests that in general, an Indexed SREC-II approach may lead on average to lower ratepayer costs, in the current high-price and

shifting policy environment, a Fixed SREC-II approach should be adopted because of the greater ratepayer certainty it offers.

F. Incentive term

The SuSI Order set the SREC-II Qualification Life for projects participating in the ADI Program at 15 years “following the date of commencement of commercial operations based on metered generation supplied to GATS, with one MW-hour being the basis for the creation of one NJ SREC-II.”⁴ Daymark proposes to set the qualification life for projects participating in the CSI Program at 15 years.

G. Procurement frequency

Daymark recommends that all tranches be procured in a single procurement, and that procurement be held once per year.

⁴ In re A Solar Successor Incentive Program Pursuant to P.L. 2018,c. 17, NJBPU Docket No. QO20020184, Order dated July 28, 2021 at 51.

III. BACKGROUND

A. Solar in New Jersey

New Jersey has been a longstanding national leader in solar development despite its small size, high population density, and lower solar insolation relative to some of the western and southern states.⁵ As of August 31, 2022, the State had over 1,312 MW of residential solar installations, over 2,007 MW of commercial and industrial installations, and over 781 MW of grid supply installations for a total exceeding 4,137MW.⁶ This places New Jersey eighth among all states in the country in terms of installed solar capacity through the end of 2021.⁷

New Jersey has had several successive programs that have supported the growth of solar buildouts. The State's Renewable Portfolio Standard ("RPS") was originally established in 1999, setting increasing targets for renewable energy procurement by Third Party Suppliers and Basic Generation Service Providers ("TPS/BGS Providers"). The State has instituted incentive programs to directly support the installation of solar, including the recently closed Legacy Solar Renewable Energy Certificate ("SREC") Program and subsequent Transition Incentive ("TI") Program.

On May 23, 2018, Governor Murphy signed the Clean Energy Act of 2018 into law.⁸ This law directed the NJBPU to redesign New Jersey's solar incentive programs. Specifically, it called on the NJBPU to adopt rules and regulations to close the Legacy SREC Program to new applications once the Board determined that 5.1 percent of the kWh sold in the State by electric power suppliers and basic generation providers had been generated "from solar electric power generators connected to the distribution system."⁹ This milestone was reached on April 30, 2020.

The TI Program, which opened to registrations after the closure of the Legacy SREC Program, was designed to be a temporary program that would remain in effect only until the Board opened the new SuSI Program, of which the CSI Program is a part.

⁵ NREL, "Global Horizontal Solar Irradiance, National Solar Radiation Database Physical Solar Model," February 22, 2018, available at: <https://www.nrel.gov/gis/assets/images/solar-annual-ghi-2018-usa-scale-01.jpg>.

⁶ New Jersey Board of Public Utilities, Solar Activity Reports, available at: <https://njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports>.

⁷ Solar Energy Industries Association, *Top 10 Solar States* (last visited March 23, 2022), available at <https://www.seia.org/research-resources/top-10-solar-states-0>.

⁸ P.L. 2018, C. 17.

⁹ P.L. 2018, C. 17., 2.d(3).

On June 9, 2021, Governor Murphy signed the Solar Act of 2021. The Solar Act directs the NJBPU to establish a program to incentivize the development of 3,750 MW of solar by 2026. It directs the Board to target the development of at least 300 MW of net metered solar annually, at least 150 MW of community solar annually, and an average of 300 MW of grid-scale solar annually.¹⁰

On July 28, 2021, the Board voted unanimously to implement the SuSI Program. The SuSI Program was designed to meet the targets laid out in the Solar Act of 2021, and thereby support Governor Murphy's goal of reaching 100% clean energy by 2050.

There are two components of the SuSI Program: the ADI Program and the CSI Program. The ADI Program offers a fixed incentive for net metered residential solar projects, net metered non-residential solar projects of 5 MW or less, and all community solar programs. The CSI Program covers grid supply projects and net metered non-residential projects greater than 5 MW and will provide incentives for which the value will be determined through a competitive solicitation process.

B. Stakeholder process

This proposal is part of a process of ongoing stakeholder engagement regarding the development of the ADI and CSI Programs. Five stakeholder workshops were held in the spring and summer of 2021, prior to the July 28, 2021, Board Order that established the SuSI Program.¹¹ Daymark and Board Staff held an additional four stakeholder meetings in the process of developing this proposal:

- An initial CSI Program stakeholder meeting on November 30, 2021
- Three meetings to discuss the Straw Proposal, held on May 26, June 2, and June 6, 2022.

Initial CSI Program stakeholder meeting

On November 1, 2021, the Secretary of the Board issued a notice inviting all interested parties and the public to participate in a stakeholder meeting regarding the CSI Program. Included with the notice was a list of six questions on which Daymark and Staff sought feedback from stakeholders. The questions covered topics such as the designation and treatment of project categories, adequate maturity requirements and financial

¹⁰ N.J.S.A §48:3-117(3)(a)

¹¹ In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C. 17, NJBPU Docket No. QO20020184, Order dated July 28, 2021.

assurances, and other aspects of program design.¹² The stakeholder meeting was held on Tuesday, November 30, 2021, via Zoom Virtual Webinar and included a short presentation on the CSI Program and areas for stakeholder input followed by an opportunity for stakeholder spoken comments. One hundred and thirty-three stakeholders registered to attend the session, with fourteen providing verbal comments during the session. Stakeholder representation included a large number of developers, the ratepayer advocate, representatives of environmental organizations, and others.

Table 1. Attendees of November 30, 2021 Stakeholder Meeting (self-reported by the attendees based on categories defined by Daymark)

	Attendees by Stakeholder Category
Developer	42
EDC	7
Advocacy/Trade Association	5
ESCO	4
Financing	3
Law Firm	3
Professional Services	3
REP/Community Solar	3
Solicitation Manager	3
NJ Govt	2
REP/IPP	2
Education	1
Gas Company	1
Industrial	1
Integrated Energy Company	1

Stakeholders were also invited to provide written comments following the meeting; twelve stakeholders provided comments in written form following the session.

Staff, working with Daymark, considered stakeholder verbal and written comments while working to develop a Straw proposal.

Straw proposal

Following the initial stakeholder meeting Daymark and Staff developed a Straw proposal for further stakeholder discussion. The Straw Proposal was posted to Docket Number

¹² Notice in re Competitive Solar Incentive (“CSI”) Program Pursuant to P.L. 2021, C. 169, Docket No. QO21101186, Notice issued November 1, 2021.

QO21101186 on April 26, 2022, along with a notice of three stakeholder meetings to discuss the Straw Proposal.¹³

Stakeholder meetings to receive input on the CSI Straw Proposal

After release of the Straw Proposal on April 26, 2022, NJBPU hosted three additional stakeholder sessions to present specific elements of the proposal and solicit stakeholder feedback:

- May 26, 2022. Topics: Solicitation tranches, implementation of the “Grid Supply Solar Paired with Storage” tranche, auction procedure, and procurement frequency
- June 1, 2022. Topics: Project pre-qualification, bid participation fees, and commercial operation date requirements
- June 6, 2022. Topics: Auction price result, SREC-II payment structure

C. CSI Program principles

In drafting the Straw Proposal and this subsequent Report, Staff and Daymark adhered to several principles important to New Jersey’s solar policy and cited in the SuSI Program Straw Proposal:¹⁴

1. Provide maximum benefit to ratepayers at the lowest cost;
2. Support the continued growth of the solar industry;
3. Meet the State’s commitment to 50% Class I Renewable Energy Certificates (“RECs”) by 2030¹⁵ and for “total conversion of the State’s energy production profile to 100% clean energy sources on or before January 1, 2050”¹⁶;
4. Provide insight and information to stakeholders through a transparent process for developing the Solar Transition and Successor Program; and
5. Comply fully with applicable statutes.

In addition, the Solar Act of 2021 includes specific siting provisions which direct that “[t]he development of grid supply solar should be directed toward marginal land and the

¹³<https://nj.gov/bpu/pdf/publicnotice/20220426%20Consolidated%20Straw%20Version%2013%20with%20Notice.pdf>

¹⁴ In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C.17, NJBPU Docket No. QO20020184, Staff Straw Proposal, April 8, 2021, revised April 26, 2021, and May 5, 2021, p. 6.

¹⁵ As called for by A.B. 3723, enacted in May 2018.

¹⁶ Executive Order No. 28, issued May 28, 2018, by Governor Philip D. Murphy

built environment and away from open space, flood zones, and other areas especially vulnerable to climate change” and call for a policy approach that will “affordably expand New Jersey’s commitment to renewable energy while not compromising the State’s commitment to preserving and protecting open space and farmland.”¹⁷ Siting rules applicable to CSI Program participants are being discussed in a companion proceeding.¹⁸

The intention of the CSI Program is to promote the development of new solar projects that allow the State to progress toward meeting its renewable energy goals by leveraging the maturing solar industry to achieve maximum benefits to ratepayers at the lowest reasonable cost. The targets set and the transparency of the process are intended to support the continued growth of solar deployment throughout the State.

IV. RECOMMENDATIONS: COMPETITIVE SOLAR INCENTIVE PROGRAM DESIGN

A. CSI Program bid tranches

We recommend that the CSI Program be structured into separate procurement categories, or tranches, to ensure that a range of types of competitive solar projects qualify to receive SREC-IIs, despite, in some cases, potentially different project cost profiles.

Background

The report that accompanied the July 28, 2021, Board Order creating and implementing the SuSI Program¹⁹ recommended several kinds of projects that the CSI Program should consider. Those included four categories proposed in the earlier Solar Successor Program Straw Proposal²⁰ and an additional two sub-categories that Staff noted could require additional consideration based on stakeholder comments.

2021 Staff-suggested CSI categories:

- Basic grid supply

¹⁷ N.J.S.A §48:3-117(4)(c).

¹⁸ See Docket No. QO21101186.

¹⁹ In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C. 17, NJBPU Docket No. QO20020184, Order dated July 28, 2021, pp. 2-48.

²⁰ In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C.17, NJBPU Docket No. QO20020184, Staff Straw Proposal, April 8, 2021, updated April 26, 2021, and May 5, 2021, p. 15.

- Grid supply on desirable land uses (rooftops, the built environment, landfills, contaminated sites)
- Storage paired with grid supply solar
- Net metered non-residential above 5 MW

Sub-categories for additional consideration:

- Solar on contaminated land
- Public entity projects

In developing a Straw Proposal for the CSI Program, Daymark and Staff considered initial stakeholder comments to better understand the reasons for potential special consideration of each of these categories (other than basic grid supply). The Straw Proposal's recommendation was to develop a bid process that includes specific tranches (separate competitions) for specific categories of projects. In this report, we continue to recommend the same project categories, as discussed in detail below.

Discussion

Tranches, targets, and competition across categories

The Solar Act of 2021 gives the NJBPU discretion in designing the tranches in the CSI Program, provided the tranche system enhances the diversity of energy resources and results in environmental and public health benefits to New Jersey. The Act states:

The board may establish a system of distinct bidding categories within the competitive solicitation process set forth in this section, such that only bids from the same category compete with one another. The category system may take into account the size of the facility, location of the facility on a contaminated site or landfill, as determined by the board in consultation with the Department of Environmental Protection, or any other feature of a facility, provided that the category system enhances the continued diversification of the energy resources used to meet consumer demand in this State and results in environmental and public health benefits to New Jersey residents, as determined by the board.²¹

In the case of Grid Supply on the Built Environment and/or Grid Supply on Contaminated Sites and Landfills, the intention is to ensure a minimum level of participation, but not to limit participation to that minimum. At equivalent prices, Grid Supply on the Built Environment or Grid Supply on Contaminated Sites and Landfills is preferred to grid

²¹ N.J.S.A. § 48:3-117 (4)(b).

supply located on greenfield sites. One potential outcome of the procurement, theoretically, is that 250 MW of awards are made to Grid Supply on the Built Environment and zero MW are made to greenfield projects. The bid review procedure discussed in Section IV.C, below, is intended to ensure this kind of outcome is possible, depending on the bids received.

Recommendations on tranches

We recommend the following bid tranches, based on a consideration of the categories above:

1. Basic Grid Supply;
2. Grid Supply on the Built Environment;
3. Grid Supply on Contaminated Sites and Landfills;
4. Net Metered Non-residential Projects above 5 MW; and
5. Grid Supply Solar Paired with Storage.

Tranche 1. Basic Grid Supply. The basic grid supply category would include all grid supply projects that do not qualify for one of the tranches below (e.g., greenfield solar projects).

Proposed definition: Basic Grid Supply projects include all grid supply solar projects that do not qualify for Tranches 2 or 3 and are connected to the distribution or transmission system owned or operated by a New Jersey public utility or local government unit.

Tranche 2. Grid Supply on the Built Environment. The Solar Act of 2021 directed the NJBPU to ensure that the “development of grid supply solar ... be directed toward marginal land and the built environment and away from open space, flood zones, and other areas especially vulnerable to climate change[.]”²² This report proposes to prioritize grid scale solar located on the built environment in furtherance of these statutory goals by creating a specific tranche open exclusively to such projects. Considering these projects in a separate tranche recognizes that NJBPU may choose to select these projects even if they come at some premium over greenfield solar development, while establishing a competitive structure to set an appropriate market price for these projects. We do not recommend differentiating between different types of built environment (for example, rooftops vs. carports). As Staff stated in their report that prefaced the July 28, 2021, Board Order, “[t]he environmental and open space

²² N.J.S.A. § 48:3-117 (1)(c).

impacts of both types of projects [rooftop and carport projects] are generally comparable in the sense that they are both installed on the built environment [.]”²³

Proposed definition: Grid Supply on the Built Environment refers to all grid supply solar projects for which 100% of the photovoltaic panels are installed on rooftops, raised carports over parking lots or parking decks, or similar installations on the built environment, and connected to the distribution or transmission system owned or operated by a New Jersey public utility or local government unit.

Tranche 3. Grid Supply on Contaminated Sites and Landfills. We recommend that this specific subset of projects be broken out into its own category, at least in the first procurement. The Solar Act of 2021 calls out solar on contaminated sites and landfills specifically, stating that the solar solicitation program must “ensure that the environmental and public health benefits of solar electric power generation facilities on contaminated sites or landfills are recognized, including accommodating the long development timescale for these projects.”²⁴ Solar on contaminated sites and landfills may need special consideration to be competitive in the CSI Program, due to the additional costs of mitigating the contamination and securing permits. Consideration within a separate tranche increases the chance that these projects will be able to qualify for SREC-IIs in the CSI Program.

In addition to the direction provided by the Solar Act of 2021, another reason to provide for potentially higher payments to solar on contaminated sites and landfills is the potential long-term benefits of continuing to support this kind of development in New Jersey. The Board has long recognized the benefits of solar on contaminated sites and landfills, not least since it has enabled clean-up and mitigation activities on such sites, and because, given the limited availability of land, using contaminated sites and landfills for solar development, reduces development pressure on open space.

New Jersey is a leader in solar development on landfills and brownfields, with approximately 241 MW operational under Subsection (t) as of August 31, 2022.²⁵ A separate tranche for development on contaminated sites and landfills is a prudent step to ensure that capabilities to support this kind of development are preserved. In the

²³ In re A Solar Successor Incentive Program Pursuant to P.L. 2018, C. 17, NJBPU Docket No. QO20020184, Order dated July 28, 2021, pp. 17-18.

²⁴ N.J.S.A. § 48:3-117(4)(c).

²⁵ SRP, ADI, and TI Installation Report through February 28, 2022, “Interconnection & Customer Type” tab, available at: <https://www.njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports>.

near term, these projects may be more expensive than projects not located on contaminated land. As solar development continues and potential solar development sites become scarcer, however, this type of solar development may become more competitive with other solar projects, and savings may result from preserving the knowledge and infrastructure that currently exists in New Jersey to support such development.

Accordingly, we propose creating a separate Grid Supply on Contaminated Sites and Landfills tranche to target a certain amount of MW to award to this category, even if awards potentially come at some premium, in order to sustain contaminated land development capabilities in New Jersey. Allowing solar projects on contaminated sites and landfills to compete in a separate tranche would allow NJBPU to target at least a minimum MW amount of such procurement, while at the same time, as appropriate, establishing tailored solicitation requirements (such as maturity and COD requirements).

In order to administer this tranche, it is necessary to clearly define what projects are included. We propose to adopt the statutory definition for Grid Supply on Contaminated Sites and Landfills:

'Contaminated site or landfill' means: (1) any currently contaminated portion of a property on which industrial or commercial operations were conducted and a discharge occurred, and its associated disturbed areas, where 'discharge' means the same as the term is defined in section 23 of P.L.1993, c.139 (C.58:10B-1); or (2) a properly closed sanitary landfill facility and its associated disturbed areas.²⁶

We further propose that land that is designated as "Agricultural Lands" in the modified Anderson Classification system developed by New Jersey Department of Environmental Protection ("NJDEP") (the 2000 series)²⁷ will be excluded from participation in Tranche 3. This exclusion is in keeping with New Jersey's longstanding policy of prohibiting active farmland from receiving the higher solar incentives associated with development on contaminated lands. Further, we propose that an Agricultural Lands designation should be controlling--even if the land could otherwise qualify, farmland usage will trump other considerations. For example, land with an Agricultural Lands designation would be

²⁶ P.L. 1999, c.23 § 3.

²⁷ A Land Use and Land Cover Classification System for Use with Remote Sensor Data, U.S. Geological Survey Professional Paper 964, 1976; edited by NJDEP, OIRM (Office of Information Resources Management), BGIA (Bureau of Geographic Information and Analysis), 1998, 2000, 2001, 2002, 2007, 2012, 2015.

prohibited from participating in Tranche 3, even if the land may otherwise be “contaminated,” and should compete on an equal basis with other agricultural sites.

Administratively, projects would pre-qualify for participation in Tranche 3 by demonstrating that the property targeted for solar development is a property listed on the New Jersey Known Contaminated Sites List,²⁸ or on the New Jersey Landfill List maintained by DEP,²⁹ and providing preliminary evidence that the contaminated portion of the property and its associated disturbed areas cover or exceed the area targeted for solar development. Associated disturbed areas will include areas, which may themselves not have been contaminated, but are clearly associated with contaminated areas or landfills. Examples include access roads, lay-down areas and former building sites that were previously part of an industrial or landfill complex. The associated disturbed areas cannot exceed 10% of the total land area targeted for solar development.

After an award through the solicitation, but prior to registration in the CSI Program, NJBPU, in cooperation with NJDEP, will conduct a more rigorous eligibility review, similar to the process currently used for qualification under subsection (t).

Tranche 4. Net Metered Non-residential Projects above 5 MW. As specified in the Solar Act of 2021, net metered solar projects in New Jersey of 5 MW or less qualify for inclusion in New Jersey’s ADI Program. Net metered non-residential projects greater than 5 MW qualify for this CSI Program.

It is not known how many qualifying large net metered projects are likely to compete in the CSI Program. Some stakeholder comments suggest that developers of net metered projects may find it hard to navigate the unpredictability of a competitive procurement. In addition, there may be some inherent limitations on the number of appropriate sites for such large net metered projects. However, the TI Program received a robust response from large (> 5 MW) net metered projects of approximately 120 MW, suggesting that there could be significant potential participation by large net metered

²⁸ “The Known Contaminated Sites List for New Jersey are those sites and properties within the state where contamination of soil or ground water has been confirmed at levels equal to or greater than applicable standards. This list of Known Contaminated Sites may include sites where remediation is either currently under way, required but not yet initiated, or has been completed and addressed via an Institutional Control.”

Source: Known Contaminated Site List for New Jersey (Envr_NJEMS_KCSL) (Web Mercator ArcGIS Online Service) vector digital data NJDEP, available at:
<https://www.arcgis.com/sharing/rest/content/items/b167bb2ae09c43f8ab9e954700be45d9/info/metadata/metadata.xml?format=default&output=html>.

²⁹ <https://www.nj.gov/dep/dshw/lrm/landfill.htm>.

projects.³⁰ In fact, net metered projects may have some inherent advantages in a competition against wholesale projects, since they already receive a significant subsidy, in the form of net metering credits higher than the wholesale cost of power. For the purpose of supporting the “continued diversification of...energy resources” as the Solar Act of 2021 requires,³¹ it would not be desirable to risk awarding all CSI Program capacity to net metered projects. By breaking these projects out into their own tranche, NJBPU will be able to award SREC-IIs to the most competitive net metered projects, while ensuring that there is still room in the program for other types of projects.

Within the net metered project tranche, we do not propose to differentiate between different types of sites being developed (i.e., no additive preference for contaminated sites or built environment projects).

Proposed definition: Net metered non-residential Projects above 5 MW must meet the requirements of their New Jersey utility to qualify as net metered projects serving customers in non-residential rate classes.

Tranche 5. Grid Supply Solar Paired with Storage. New Jersey does not currently have an independent energy storage program, although mechanisms for achieving energy storage goals are required to be developed under the Clean Energy Act of 2018,³² and development of the New Jersey Energy Storage Incentive Program is underway³³. In the interim, the Board has expressed an interest in piloting support for storage in the context of the CSI Program by offering competitively set incentives for grid supply solar projects that are paired with storage.

Adding storage to a solar project carries some benefits that can result in increased project revenues over time. Solar projects that include storage can benefit from increased capacity ratings in PJM wholesale markets and from being able to store energy produced when local wholesale prices are low and sell when those prices are higher. For the purposes of price discovery, we propose a dedicated storage tranche, for which projects that pair grid supply solar and storage would be eligible. This would potentially

³⁰ Source: Pipeline Data and Installation Data, available at <https://www.njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports>.

³¹ N.J.S.A. § 48:3-117(4)(b).

³² P.L. 2018, c.17 § 1.

³³ The Straw Proposal for the New Jersey Energy Storage Incentive Program is available at https://nj.gov/bpu/pdf/publicnotice/Notice_StakeholderMeetings_NewJerseyEnergyStorageProgram.pdf

provide a storage adder to solar projects that qualify for SREC-IIs in competition with other solar projects as further described in the next paragraph .

In order to compete in the Storage Paired with Grid Supply Solar tranche, a solar plus storage project would provide a two-part bid: a solar-only SREC-II price and a storage adder price. The project would first be considered as a solar-only project in the appropriate tranche. Assuming it received an SREC-II award, its proposed storage adder price would then be considered separately in the storage tranche for award of a storage adder.

The intention of this approach is to encourage projects to consider the addition of storage, to ensure that projects that do consider adding storage are not penalized in the selection process by additional costs associated with storage, and to assist in gathering information about the cost to developers of incorporating storage into their solar projects. The CSI Program would avoid dictating how much storage each project should include or how the storage should be operated once built. At the same time, because the CSI Program is focused on promoting solar projects, the storage incentive MWhs eligible for the adder are limited in this proposal to four times the total MW of the solar project (that is, a solar project may be fully paired with no more than 4 hours of eligible storage for each MW of solar project capacity, as discussed in more detail below.)

To accomplish these goals, bidders would be instructed as follows:

Bidders should indicate the amount of MWh of storage they are proposing and the overall MW size of their solar project. They should include:

- *An SREC-II bid for the solar portion of the project.*
- *An SREC-II storage adder bid for the storage portion of the project, expressed in \$ per MWh of solar production, and specifying the number of MWh of energy storage capacity offered.*
- *A statement as to whether the storage element of their project is separable—in the event they receive SREC-II award only for the solar portion of their project, should this bid remain under consideration as a solar-only SREC-II award, or is the solar bid contingent on the project’s storage bid also being awarded?*

These bids will be evaluated first independently as projects without storage. Second, projects that are awarded SREC-IIs as solar projects will be considered in the storage tranche. Projects must succeed in both categories to be awarded the storage SREC-II adder. Projects that indicate that they are separable and succeed as solar projects but

do not succeed in the storage tranche will still be awarded solar capacity in the appropriate grid supply tranche. In case the developer has indicated in its initial bid that they do not wish to proceed with a solar-only project, the capacity associated with its solar project will be put back into the appropriate grid supply tranche and the market will be re-cleared.

A key element in the design of the Solar paired with Storage tranche is including a capacity adjustment mechanism to account for the fact that projects with very different amounts of storage (both in absolute terms and in proportion to the capacity of the proposed solar unit) may be competing with each other. For the purpose of storage adder bid *evaluation*, bids will be compared on a \$/MWh (of solar production) adder cost basis. However, the application of the awarded adder to generated SREC-IIs will be adjusted to reflect the percentage of the solar project's MW capacity that is paired with four hours of energy storage capacity. A solar project will be considered to be 100% paired with storage if its energy storage capacity (in MWh) is four times the nameplate capacity of the project (in MW). So, for example, a 20 MW solar project will be considered to be 100% paired with storage if storage capacity is 80 MWh. The final storage adder will be multiplied by the percentage of the solar facility that is paired with 4 MWh of storage. In no case will the adder be multiplied by an amount greater than 100%. So, for example, a project that pairs only 50% of its solar capacity with 4-hour storage will receive an adder for each SREC-II of 50% of the adder value established in the solicitation.

Because SREC-IIs can only be created by the generation of solar electricity, all bids must be expressed in terms of dollars per solar MWh of generation. Qualifying projects will not be able to claim SREC-IIs in excess of the total MWh of power generated by the solar portion of their facility on a monthly basis.

A hypothetical bid for a storage paired with grid supply solar project is provided below as an illustrative example of the proposed bidding structure.

EXAMPLE

Participation of a Grid Supply Solar Project Paired with Storage in the CSI Program

Sample case: The developer of a 20 MW grid supply solar project plans to pair the solar unit with a battery capable of storing 20 MWh of electricity. They wish to bid both for SREC-IIs in the Basic Grid Supply Tranche and for a storage adder in the Storage Paired with Grid Supply Solar Tranche.

Bid submission: After prequalifying as a Storage Paired with Grid Supply Solar project, the developers submit a bid with two prices: (1) their SREC-II bid (what they would require per MWh of solar production to support their solar unit, independent of support for the storage component); (2) their SREC-II normalized storage adder bid. The normalized storage adder bid should equal the additional amount that would need to be added to their SREC-II award, per MWh of *solar* production, in order to support inclusion of storage component sized to provide 4MWhdc for every MWdc of solar unit nameplate capacity.

Bid review: The solar component of the bid would be considered in its appropriate tranche (in this case, Basic Grid Supply). Assuming the project succeeded in being awarded SREC-IIs within that tranche, the project's proposed SREC-II storage adder would be considered in the Storage Paired with Grid Supply Solar tranche. The lowest bids in that tranche would be selected, until awards had been made for up to 160 MWh of energy storage capacity.

If the developer's storage adder bid was not accepted, the solar-only portion of the project would still clear, unless the developer indicated in its initial bid that it did not wish to proceed with a solar-only project. In that case, an additional 20 MW of additional capacity would be put back into the Basic Grid Supply Tranche and the market would be re-cleared.

SREC-II implementation: Assuming the project's SREC-II storage adder was also selected, the project would be awarded SREC-IIs with the storage adder bid on a pay-as-bid basis. This adder would be applied to all SREC-II payments for that project. In the case in which the actual storage project as constructed was sized smaller than the normalized project bid, the adder would be reduced proportionally. SREC-II payments, as always, would be made only for MWh of solar generation.

Because of the complexity inherent in this two-bid structure and the resulting difficulty in predicting bidding behavior, we recommend that the Board consider adopting confidential price caps (that is, price caps known only to NJBPU staff and procurement administrators) that will apply to the storage tranche. Staff also recommends that this storage adder, at least initially, be limited to grid supply solar projects (net metered non-residential projects would not be permitted to participate).

Appendix 2 includes two flow-chart examples of how different solar plus storage proposals would make their way through the tranche evaluation process based on this proposal.

Proposed definition: Storage Paired with Grid Supply Solar is any project that qualifies to participate in Tranches 1, 2, or 3 and which includes a battery storage unit that meets PJM's definition of either a co-located or hybrid storage resource. (In the case of co-located storage, pre-qualification must include evidence of separate PJM queue status.)

Project types not recommended for distinct tranches

The following three project types, though they may participate in the CSI Program, are not recommended for separate tranches: public entity projects, dual-use projects, and floating solar projects.

Public entity projects. Daymark believes that the primary obstacles for public entities participating in the CSI Program are: 1) limited staff bandwidth to navigate the process; and 2) difficulty managing the uncertainty inherent in the competitive process.

After considering the concerns raised about the difficulties faced by public entities in participating in this type of solicitation, we do not propose establishing a separate procurement tranche for these projects. Although it is important that the procurement be structured so that it is possible for public entity projects to compete, these concerns are not best addressed by establishing a separate tranche of the procurement, since it is not clear that a separate tranche would address the staffing and uncertainty obstacles identified above. Instead, we suggest establishing a process and/or making public education resources available that would support participation by public entity projects in the overall competitive solicitation. In addition, we are proposing to waive bid fees for public entity projects.

Dual-use projects. Although some stakeholder interest was expressed in establishing specific program carve-outs for dual-use solar, as also known as agrivoltaic projects, we do not recommend special consideration for dual-use projects in the CSI Program at this

time. A Pilot program for dual-use projects will be available as part of New Jersey's Dual-Use Solar Energy Pilot Program, to be established under P.L. 2021 c. 170. Dual-use projects may compete in any of the above tranches for which they are eligible, on a comparable basis with other projects, but we do not recommend creating a process by which they would be eligible to receive a higher incentive through the CSI Program at this time.

Floating solar projects. Although several stakeholders suggested that some special provision for floating solar projects should be made, either through establishing a dedicated tranche for these projects or by allowing floating solar to compete in Tranches 2 or 3, we do not recommend any special treatment for floating solar projects at this time. It is Daymark's understanding that the environmental impacts of floating solar are still being studied.³⁴ In the absence of a clear understanding of these impacts, we believe it is premature to recommend special favorable treatment of floating solar in the upcoming SREC-II procurement, although these projects are eligible to compete in the Basic Grid Supply tranche. However, the eligibility of floating solar for special tranche status can be re-evaluated in future procurements, as greater understanding of its environmental impacts is reached.

B. Project pre-qualification, bid participation fees, and commercial operation date requirements

It is not sufficient to select the lowest-priced SREC-IIs proposed, but rather it is necessary to select the proposed projects with the lowest SREC-II costs that also have a reasonable likelihood of successful and timely completion. Project qualification and maturity requirements aim to strike a balance between awarding sufficiently early in the development process to not create undue development risk or burden on developers, but also to support projects that can be successfully built and that can produce SREC-IIs within a reasonable timeframe.

Background

One way that solicitations sometimes balance cost and quality of proposal is to conduct a simultaneous quantitative and qualitative bid review, which may result in the winning projects not being the cheapest projects but being the least expensive among those

³⁴ Exley, G., R.R. Hernandez, T. Page, M. Chipps, S. Gambro, M. Hersey, R. Lake, K.-S. Zoannou, and A. Armstrong. "Scientific and stakeholder evidence-based assessment: Ecosystem response to floating solar photovoltaics and implications for sustainability." *Renewable and Sustainable Energy Reviews* 152 (2021): 111639. Available online at: https://wildenergy.org/wp-content/uploads/2021/10/Exley_et_al._2021.pdf.

projects which best satisfy certain qualitative criteria. However, in order to make sure that consumers benefit from the lowest cost qualified project in each category, bids into each category within the CSI Program will be ranked exclusively on price.

For this reason, we recommend requiring projects to pre-qualify before they submit price bids. The intention of pre-qualification is to eliminate projects that cannot reasonably be expected to be successfully completed within the solicitation's COD timeline. Projects that fail to pre-qualify in one solicitation round are free to reapply in subsequent rounds, as their plans become more developed.

The discussion of pre-qualification is paired with a discussion of Commercial Operation Date requirements because of the relationship between project pre-qualification requirements and how quickly a project can be expected to be completed after receiving an SREC-II award. The more stringent the pre-qualification requirements are in terms of how far advanced a project must be in order to participate in the CSI Program solicitation, the less time should be needed between SREC-II award and Commercial Operation Date.

In developing our final recommendations, we considered the impacts of PJM's proposed queue reform, discussed in greater detail below.

PJM's Queue Reform Proposal

PJM convened an Interconnection Process Reform Task Force ("IPRTF") in April 2021. The reform effort sought to increase certainty for cost responsibility, reduce the overall time projects are in the interconnection queue by focusing on improvement to study phases, explore options to obtain interim service prior to completion of interconnection study work, and investigate requirements for admission into the New Service Queue and requirements to proceed through subsequent phases.³⁵

PJM's proposal to FERC was filed on June 14, 2022.³⁶ In its filing, PJM asked FERC to approve the proposal by Oct. 3 (as of the date of this writing, FERC action is still pending). Upon approval of the proposal, PJM will hold a 60-day readiness posting window and a queue retool of AE1-AG1 to determine fast lane eligibility.

³⁵ <https://pjm.com/-/media/committees-groups/task-forces/iprtf/postings/iprtf-problem-statement.ashx>.

³⁶ FERC Docket No. ER 22-2110-000.

Some of the major points of the PJM reform proposal that may be especially relevant to the CSI Program procurement are the following:

- **Conversion from a first-come, first-served review process to a “first ready, first served” process within each queue cycle.** This change may give priority to projects that can demonstrate elements of readiness such as (potentially) site control and final financing arrangements.
- **Start of the next queue cycle is dependent on progress in the previous cycle.**
- **A “unified application” for all generation interconnections replaces separate applications for different project sizes.**
- **The process itself, its phases, and the related studies are redefined.**³⁷

The most significant immediate impact for the CSI Program is the change in queue timing as PJM transitions from the current process to the proposed new process. PJM expects to complete queues through the end of the AD2 cycle³⁸ by the projected October 2022 transition date. PJM expects to complete 300 projects per year that remain in the existing process following the transition date.

PJM’s Transition Proposal also includes a “fast lane” process which will allow qualifying projects already in the queue³⁹ to proceed using standing cost allocation rules if they meet certain requirements.

At a high level, assuming PJM’s proposed queue reform is implemented as planned, the CSI procurement will need to accommodate the following important timing implications for potential solar projects:

- Projects currently in the PJM queue are expected to be able to execute final interconnection agreements between mid-2024 and mid-2026.
- PJM’s transition plans indicate that all queue projects in the category AH1 and prior (that is, projects that entered the PJM Queue by September 30, 2021) will be processed on a timeline intended to allow them to reach a final agreement

³⁷ See PJM Solution Proposal Framework Changes. 3.11.2022 meeting of the Interconnection Process Reform Task Force. Slide 5: <https://pjm.com/-/media/committees-groups/task-forces/iprtf/2022/20220311/20220311-interconnection-queue-reform.ashx>.

³⁸ Projects in cycle AD2 joined the queue prior to 2019. See PJM. Interconnection Queue Reform. March 15, 2022. Slide 5: <https://www.pjm.com/-/media/committees-groups/task-forces/iprtf/2022/20220315/20220315-item-02-transition-to-cycle-process-and-tariff-revision-information.ashx>

³⁹ This applies to projects in queue cycles in queue cycles AE1-AG1. Projects in cycle AE1 joined the queue in late 2018. Projects in cycle AG1 joined the queue in mid-2020.

by late 2026.⁴⁰ Assuming awards are made in 2023, this schedule should make it possible for some projects that are only in the early stages of the PJM study process to have the potential to meet a 3-year Commercial Operation Date requirement.

- Projects not already in the PJM queue will not be able to apply to enter the queue under the new process until mid-2023, with completion of the interconnection process anticipated by mid-2026; Phase 1 review work will not begin until mid-2026, and final interconnection agreements are not expected to be completed until late 2027.

As of March 2022, there were 76 New Jersey solar projects active in the PJM queue, with a total MW capacity of 1,583 MW.⁴¹ Of these, 37 (totaling 861 MW) had at least completed a System Impact Study. (See Figure 1 below). These numbers do not imply that there are a full 861 MW of viable projects available to compete for SREC-IIs, however. Some projects have already received awards under the TI Program's subsection (t) awards. Other projects may be withdrawn for a variety of reasons—between 2013 and 2019, approximately 43% of solar projects that had completed System Impact Studies were eventually withdrawn from the queue. (See Appendix 4, Figure 9). Additional grid supply projects interconnecting at distribution voltage may also be available to participate in the CSI Program.

⁴⁰ RE: PJM Interconnection, LLC, Docket No. ER22-2110 -000 Tariff Revisions for Interconnection Process Reform, Request for Commission Action by October 3, 2022, and Request for 30-Day Comment Period. p.30

⁴¹ Includes Energy Capacity of all solar and solar + storage projects active in the PJM queue with projected in-service dates 2021 and beyond.

NJ Solar, Solar+Storage Projects Active in the Queue as on 03/17/2022

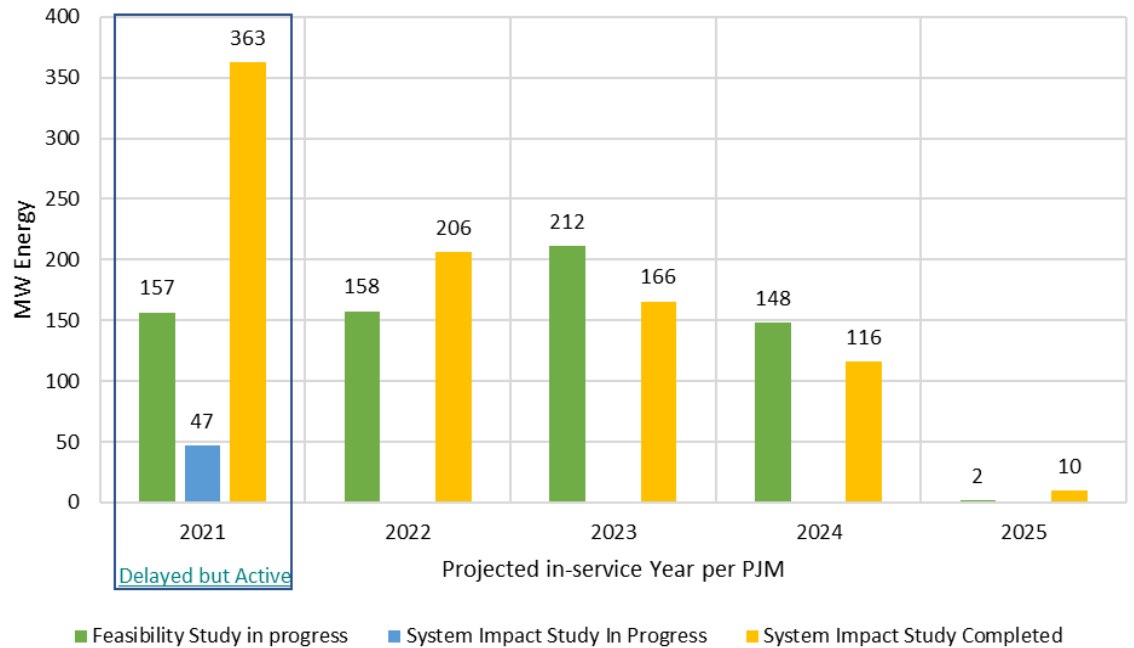


Figure 1. NJ Solar and Solar + Storage Projects Active in the PJM Queue⁴²

Discussion

Pre-qualification requirements

Pre-qualification requirements for participation in the CSI Program should ensure that only serious projects are considered for awards and that projects are only eligible to bid into the tranche(s) for which they qualify. We recommend that projects be asked to demonstrate compliance with pre-qualification requirements in a prequalification process that would be conducted approximately one month before bid submission deadlines. Only pre-qualified projects would be allowed to bid into the solicitation. The CSI Program aims to conduct the pre-qualification process in a way that is minimally burdensome for project developers, is transparent and easy to administer, and provides clear, unambiguous guidance for pre-qualifying bidders.

⁴² Data from PJM New Services Queue, <https://www.pjm.com/planning/services-requests/interconnection-queues.aspx>, downloaded 3/17/2022.

Queue position as a pre-qualification requirement

For grid supply projects, queue position, while it is not a perfect indicator of remaining time in the queue or certainty of project completion, is well-suited to the pre-screening process in that it is a clear benchmark that is transparent to both bidders and evaluators, so that it will be clear whether or not projects meet this criterion.

PJM's proposed queue revision would change the phases of the queue, the names of the required interim interconnection reports, and the structure of fees and deposits for projects in the queue. Our recommendation for the first year of procurement, however, would apply to projects currently in the queue, which PJM proposes will follow the current study steps.

Assuming that PJM's queue reform, or some version of it, is adopted, it seems likely that projects not already in the PJM queue will be unable to demonstrate any queue position (other than a submitted application) until 2026, and that prospects for commercial operation for these projects will be delayed until at least 2028, once allowance is made for completion of the interconnection process and final interconnection, including the construction of any required transmission upgrades. However, for projects currently in the PJM queue, assuming awards are made in 2023, PJM's transition schedule should make it possible for some projects that are only in the early stages of the PJM study process to have the potential to meet a 3-year Commercial Operation Date requirement. Accordingly, Daymark is proposing that the prequalification requirement for the first round of procurement be a completed Feasibility Study (the first study in the current PJM process).⁴³ Prerequisites for a Feasibility Study include a deposit and demonstration of site control. Daymark does not recommend any additional requirements, such as demonstrating community engagement, since we are trying to avoid adding elements that bring in the need for subjective judgment and make decisions about pre-qualification less predictable. Projects will be allowed to apply for up to a one-year extension of their COD, provided they can demonstrate progress towards commercial operation.

Bid participation fee

Fees or deposits for projects applying for state subsidies are frequently used as means of ensuring the seriousness of bidders, incentivizing bidders to follow through on project commitments and (in some cases) helping to defray the cost of administering state

⁴³ Under the new PJM interconnection procedure, the roughly equivalent requirement would be completion of Phase 1.

subsidy programs. Three models can be found in New York, Massachusetts, and Illinois, each of which are described below.

- New York.** In the New York Renewable Energy Certificates Program (administered by NYSERDA), bidders are assessed non-refundable bid fees in amounts that vary with the size of the projects, ranging from \$1,000 per MW to \$4,000 per MW, as follows:⁴⁴

Table 2. NYSERDA Bid Fees

NAMEPLATE CAPACITY (MW)	BID FEE
Less than 5.00 MW	\$5,000
5.00-19.99 MW	\$20,000
20.00 – 49.99 MW	\$50,000
50.00 MW or more	\$100,000

- Massachusetts.** In Massachusetts, bidders in the SMART Program are required to provide a performance guarantee deposit in amounts that may vary but must not exceed \$25 per kW of capacity (equivalent to \$25,000 per MW).⁴⁵ These amounts are refunded to unsuccessful bidders and to selected bidders who meet Program Effective Date requirements.
- Illinois.** In Illinois, renewable energy product procurements are administered by the Illinois Power Agency. In Illinois’s Renewable Resources Procurement, applicants must pay a non-refundable application fee of \$10 per kW, with a not-to-exceed cap of \$5,000 per project.⁴⁶ This amount is not returned to applicants; rather it is used to offset program costs and decreases “the administrative fees that would otherwise be taken from the utility RPS budgets.”⁴⁷

⁴⁴ NYSERDA, “Purchase of New York Tier 1 Eligible Renewable Energy Certificates (RECs) Request for Proposals (RFP) No. RESRFP21-1,” April 22, 2021, available at: <https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt000000UOhG5EAL>.

⁴⁵ 225 CMR 20.00: SOLAR MASSACHUSETTS RENEWABLE TARGET (SMART) PROGRAM, available at: <https://www.mass.gov/doc/225-cmr-2000-final-071020-clean/download>.

⁴⁶ Illinois Power Agency, “Long -Term Renewable Resources Procurement Plan,” June 7, 2021, p. 172, available at: [https://www2.illinois.gov/sites/ipa/Documents/Final%20Reopening%20Revised%20Long-Term%20Plan%20\(7%20June%202021%20rev\).pdf](https://www2.illinois.gov/sites/ipa/Documents/Final%20Reopening%20Revised%20Long-Term%20Plan%20(7%20June%202021%20rev).pdf).

⁴⁷ *Ibid.*, p. 172.

Recommendations on pre-qualification and bid participation fees

We recommend that projects be asked to comply with pre-qualification requirements in a process that would be conducted approximately one month before bid submission deadlines. The following pre-qualification requirements are proposed:

- In the first year of procurement, projects would be required to demonstrate that they have completed a PJM Feasibility Study. For subsequent years, the appropriate PJM queue benchmark would be adjusted, based on PJM's progress in implementing its new interconnection process, and would correspond to completion of the new Phase 1.
- We recommend the implementation of a bid fee of \$1,000 per MW, paid prior to pre-qualification. Such a fee is at the low end of the bid fees imposed in other states. These fees would be applied to help defray the cost of administering the bid process. Projects serving public entities would be exempt from the bid fee. Storage projects associated with solar projects would not have to pay any additional fee.
- For projects not interconnecting via the PJM interconnection process (including grid supply projects interconnecting at distribution voltage or PURPA-eligible projects that qualify to sell energy directly to the utility under a pre-established rate), projects must provide evidence (in the form of an email or letter from the utility) of having filed an interconnection application with the applicable distribution utility and having received approval to proceed to the installation phase.
- Projects will be asked to provide evidence of qualification for participation in the specific tranche(s) for which they wish to be considered. For instance, they will be asked to provide siting details, including any intended use of land in restricted categories, such as farmland. Projects intending to construct on such sites will only achieve pre-qualification if there is room under the regulatory cap for development of the project. See the Solar Siting Straw Proposal (the "Siting Straw"), released to the public for comment on March 16, 2022, for further details.⁴⁸
- Projects that intend to construct on land categories where a waiver is required will need to obtain the waiver from the Board as a pre-registration requirement.
- Projects claiming an installed capacity that exceeds 300 kW per acre would need a statement from a certified engineer confirming feasibility of the installation.

⁴⁸ Staff Straw Proposal. In the Matter of Competitive Solar Incentive Program Pursuant to P.L. 2021, C. 169. Published March 16, 2022. <https://nj.gov/bpu/pdf/publicnotice/Notice%20Stakeholder%20Meeting%20Siting%20with%20Straw%20included.pdf>.

- A list of the information that would be required for prequalification for each of the tranches is included as Appendix 1.

C. Commercial Operation Date Requirement

Daymark recommends a three-year Commercial Operation Date requirement, to establish the allowable length of time between when notification of an SREC-II award is received and when the unit must be in commercial operation. In order to achieve commercial operation, the project must not only be fully constructed, but it must also have completed the full PJM interconnection process, including construction of any required interconnection upgrades.

Projects that do not meet the Commercial Operation Date requirement forfeit their eligibility to receive previously awarded SREC-IIs. (However, such a project would be eligible to re-apply in a subsequent procurement). Daymark recommends that projects be able to request a one-year extension of the COD requirement, provided they can show progress towards the COD.

Daymark also considered project escrow requirements that would further incentivize completion by the Commercial Operation Date. A project escrow requirement would require bidders who are awarded SREC-II eligibility to provide a security, or an escrow amount, that would be returned only upon successful completion of the project. This requirement is not recommended, for the reasons discussed below.

Discussion

Projects previously granted conditional certification under the subsection (t) process have received a deadline of two years, indicating that developers have experience developing complex projects on this timeline. The three-year Commercial Operation Date requirement has been developed in conjunction with the determination to tie PJM queue position requirements to completion of a Feasibility Study. Because the Feasibility Study is the first study in the current PJM interconnection process, more time must be allowed for projects to reach commercial operation. Daymark understands that the PJM interconnection process has historically been subject to delay, which cannot always be predicted by developers. It is unknown whether adoption of the proposed queue reform will fully address problems with delay in the queue. Accordingly, we recommend that projects be able to apply for a one-year extension of their COD.

PJM's current queue reform proposal includes projections for transition timing that would result in completion of Final Interconnection Agreements by mid-2025 for

projects in groups up through AG1—that is, projects that entered the queue by mid-2020. Projects that entered before the fourth quarter of 2021 are projected to reach Final Interconnection Agreements by mid-2026. All other projects would be delayed in reaching Final Interconnection Agreements until mid-to-late 2027.⁴⁹

Assuming that the first round of projects are notified of SREC-II awards in 2023, PJM’s timing suggests that projects in the first group (through AG1) could reasonably expect to complete the interconnection process within a three-year timeframe, including about a year to allow for construction after reaching a Final Agreement.

An analysis of the PJM queue limited to this first group of projects (queue positions AE1 through AG1) expected to complete the PJM interconnection process by mid-2025 AND having a Feasibility Study already completed, but not having already completed construction, shows 857 MW of potentially eligible projects (keeping in mind that some of these projects may be participating in the TI or SREC programs, and therefore be ineligible to participate in the CSI Program, and that others may drop out of the PJM interconnection process for a variety of reasons).⁵⁰ Projects with queue numbers after AG1 but with completed feasibility studies will also be eligible to participate. It will be up to their developers to assess whether the three-year COD deadline is likely to be adequate for them to complete the interconnection process and construct their project, or whether they prefer to wait for a subsequent procurement.

Recommendations on Commercial Operation Date and project escrow requirements

This Report proposes the following related to commercial operation and project escrow requirements:

- A COD deadline of three years from notification that the project has qualified for SREC-IIs
- Projects that miss their COD deadline without receiving an extension, or that receive an extension and miss their extended COD deadline, will lose their SREC-II qualification as well as any eligibility to construct solar on farmland that may apply. Such projects will be eligible to compete again in subsequent competitive SREC-II procurement rounds without advantage or disadvantage, on

⁴⁹ See PJM. Interconnection Queue Reform. March 15, 2022. Slide 5: <https://www.pjm.com/-/media/committees-groups/task-forces/iprtf/2022/20220315/20220315-item-02-transition-to-cycle-process-and-tariff-revision-information.ashx>.

⁵⁰ PJM New Services Queue data accessed 8/2/2022: <https://www.pjm.com/planning/services-requests/interconnection-queues>.

equal footing with other projects. However, any siting waiver obtained by a project not selected in the CSI program would remain valid for five years, at which point they would have to reapply for a waiver.

- Projects can demonstrate that they have reached commercial operation by receiving permission to operate and submitting a post-construction certification package to the SuSI Program registration administrator.⁵¹

D. Auction procedure

Within each tranche, winning bids will be determined by ranking the offers in terms of proposed price per SREC-II and selecting the lowest-priced offers, as required by Section 4(f) of the Solar Act. This section discusses the following:

- MW procurement targets for each tranche
- The order in which tranches will be evaluated/provisions for projects to compete in multiple tranches

Background

The Solar Act of 2021 mandates that New Jersey's competitive solar solicitation process should result in contracts of at least 300 MW per year, on average, through 2026.⁵² The proposed tranche system is intended to ensure that the overall procurement will include at least some solar in certain targeted categories. The procurement is intended to provide the best possible value for New Jersey consumers.

Discussion: Procurement targets

An approach initially contemplated was to establish spending targets, rather than quantity targets, for each tranche. This approach might have had the desirable effect of introducing flexibility into the procurement, with lower prices resulting in more MW procured and higher prices resulting in fewer MW procured.

However, in considering how such an approach would be implemented in the CSI Program, it became apparent that it would require that the Board make assumptions regarding the price of bids received which might inadvertently skew bidding behavior. One of the key benefits of competitive bidding is that it reveals competitive prices. In future years, once price information is available from the first procurement, it may be appropriate to revisit a per-tranche spending target approach.

⁵¹ [https://njcleanenergy.com/files/file/TI%20Program/Transition%20Incentive%20Program%20Final%20As-Built%20\(Post%20Construction\)%20Checklist%20.pdf](https://njcleanenergy.com/files/file/TI%20Program/Transition%20Incentive%20Program%20Final%20As-Built%20(Post%20Construction)%20Checklist%20.pdf)

⁵² For the purposes of this Report, this is considered to be 300 MWdc.

Recommendations: Procurement targets and confidential bid caps

For the initial procurement, we recommend a per-tranche MW procurement target, with total per-tranche procurement targets summing to 300 MW (the storage target does not count toward the total 300 MW target, since it does not, in itself, represent additional solar capacity). Because at this early point it is difficult to predict the prices likely to be seen in each tranche, we recommend that the Board reserve the right to supplement these MW targets with confidential, pre-determined price caps for any or all tranches, above which further procurement in the tranche will not be undertaken, even if the result is less procurement in that tranche than was initially targeted for that year.

Proposed per tranche MW procurement targets

The initial procurement targets are set with the aim of balancing least-cost procurement with support for the particular kinds of projects represented in the tranches. In cases in which Basic Grid Supply is more expensive than Grid Supply on the Built Environment or Grid Supply on Contaminated Sites and Landfills, the more specialized tranches will be preferred, even if it means exceeding their targeted procurement amounts and procuring less Basic Grid Supply than targeted.

Daymark and Staff considered the following data points in proposing targets for the specific tranches:

- In the ten years from 2012 through 2021, an average of 22 MW per year of Subsection (t) solar capacity (on “brownfield, on an area of historic fill or on a properly closed sanitary landfill facility”) received Permission to Operate.⁵³
- The TI Program received a robust response from large (> 5 MW) net metered projects of approximately 120 MW, or on average 40 MW per year,⁵⁴ suggesting that there could be significant potential participation by large net metered projects. The initial target of 40 MW is intended to ensure adequate scope for other targeted project types.

⁵³ Source of data: Installation Data, <https://www.njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports>.

⁵⁴ Source of data: Pipeline Data and Installation Data, available at <https://www.njcleanenergy.com/renewable-energy/project-activity-reports/project-activity-reports>.

Table 3. Proposed Year 1 Target Procurements by Tranche

TRANCHE NUMBER	TRANCHE	INITIAL PROCUREMENT TARGET
1	Basic Grid Supply	140 MW
2	Grid Supply on the Built Environment	80 MW
3	Grid Supply on Contaminated Sites and Landfills	40 MW
4	Net Metered Non-residential Projects above 5 MW	40 MW
Total		300 MW
5	Storage	160 MWh

Projects will be awarded SREC-II qualifications up to the last project that does NOT exceed the procurement target. When two projects with exactly the same bid price, taken together, will exceed the procurement target, but one or either by itself, does not, the Board would reserve the right to make a determination.

In proposing these initial targets, Daymark recognizes that there may be “lumpiness” in the procurement that means that targets cannot be met exactly. In these cases, the Board may choose to exceed targets if the marginal projects offer good value to New Jersey consumers.

Discussion: The order of tranche evaluation and provisions for projects to compete in multiple tranches

Projects may compete in all tranches for which they are eligible; however, each project can be awarded SREC-IIs only once. One of the issues considered in developing this proposal is the potential impact of the order in which tranches are considered.

The possible significance of tranche evaluation order can be explained by walking through two hypothetical examples of a procurement: one in which the first tranche considered is Basic Grid Supply (Method 1) and a second in which the first tranches considered are the specialized tranches of Grid Supply on the Built Environment and Grid Supply on Contaminated Sites and Landfills (Method 2).

Method 1: In the initial Basic Grid Supply evaluation (Method 1), all grid supply projects (that is, Basic Grid Supply, Grid Supply on the Built Environment, and Grid Supply on Contaminated Sites and Landfills) would be eligible to compete, with the lowest-priced projects gaining awards, up to the projected annual SREC-II MW target for the Basic Grid Supply tranche. Some of these awards might go to well-priced projects in specialized

tranches—for instance, to projects otherwise eligible to compete in the Grid Supply on the Built Environment tranche. These projects, having been awarded SREC-IIs in the first round under the Basic Grid Supply tranche, would then be removed from consideration in the specific Grid Supply on the Built Environment tranche. As a result, other, less-competitive projects in that tranche would be able to qualify for SREC-IIs in the solicitation run specifically for Grid Supply on the Built Environment. The result might be that more projects in preferred categories would be awarded, but at a potentially higher SREC-II costs for the specialized tranches. These costs might be offset by lower overall procurement costs for Basic Grid Supply.

Method 2: In this approach, the specialized tranches of Grid Supply on the Built Environment and Grid Supply on Contaminated Sites and Landfills would be evaluated first (the order of the evaluation of these two tranches does not matter). The lowest-cost projects from each would be selected, up to the tranche MW target, and selected projects would be removed from further consideration. All remaining projects from these tranches and all Basic Grid Supply projects would be considered next in the Basic Grid Supply tranche. Because the lowest-cost projects from the specialized tranches would have already been removed from consideration, however, it would be less likely that projects from specialized tranches would be selected in the Basic Grid Supply round.

The figures below use a hypothetical sample of projects to illustrate how the different procurement methods could impact overall procurement results.

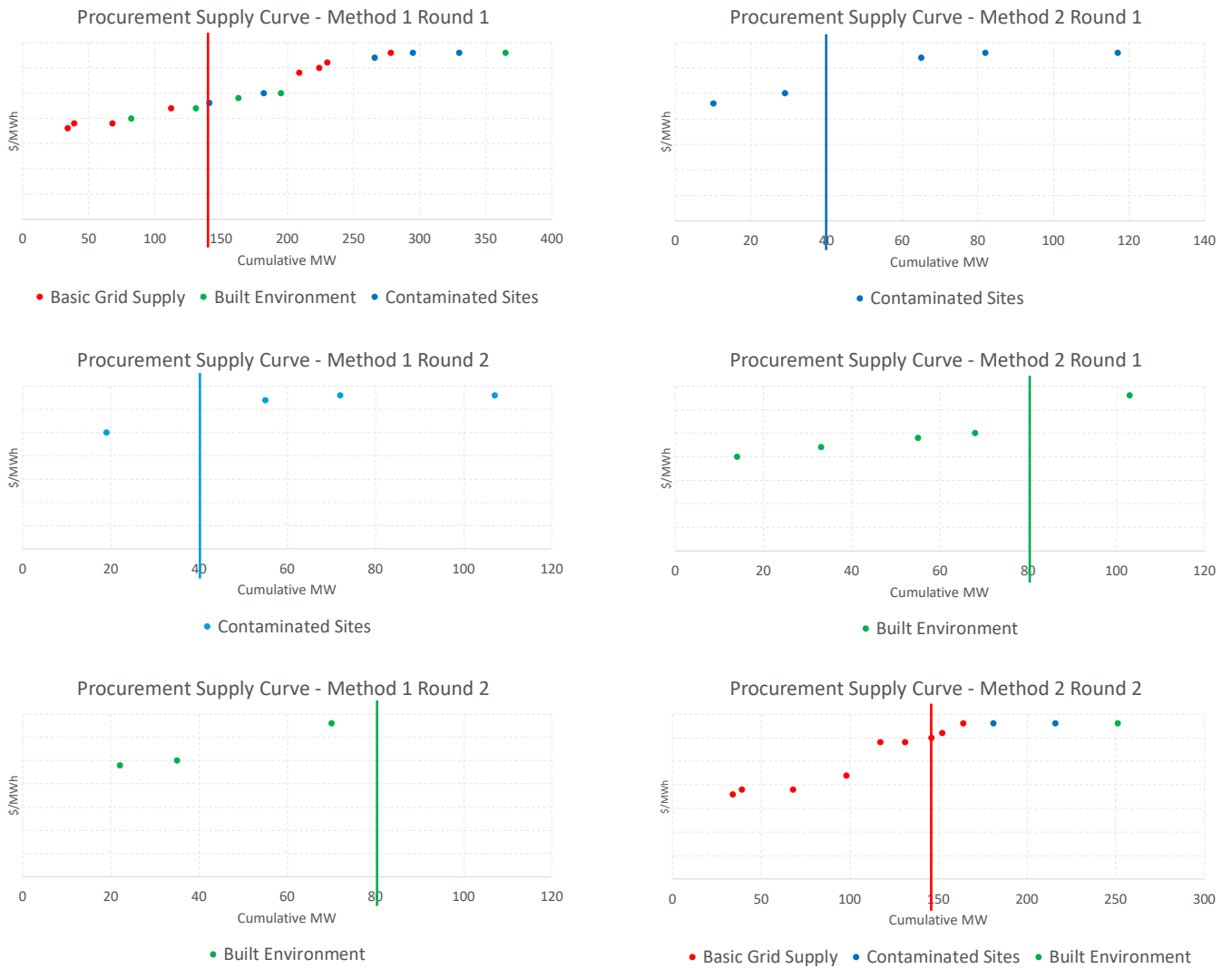


Figure 2. Comparison of Procurement Results, Method 1 and Method 2

As is shown in Figure 2, given the hypothetical sample projects used, in Method 1, the first-round procurement selects a mix of the best-priced grid supply, built environment, and contaminated land projects. The Round 2 procurement meets the MW targets for specialized tranches by choosing among the projects not selected in Round 1. In Method 2, Round 1 only selects projects in the specialized tranches of contaminated land and built environment, and Round 2 selects basic grid supply projects, as well as contaminated land and built environment projects not otherwise selected in Round 1.

The overall cost result in this hypothetical example is a slightly higher SREC-II price in Method 1, but the increase is modest, because higher prices in the specialized tranche procurements are offset by a lower price for Basic Grid Supply. Method 1 results in more of the total MW acquired coming from Built Environment and Contaminated Sites and Landfills projects.

The above example and figure is merely illustrative, however. Actual price and quantity effects of tranche evaluation order would depend on the comparative profile of the projects that bid into the process. If Contaminated Sites and Landfills projects and Built Environment projects are all significantly more expensive than most Basic Grid Supply projects, evaluation order would end up having no impact on the final portfolio of selected projects. Input from stakeholders suggest that this is likely to be the case. On the other hand, if there is a wide cost spread for projects within the Contaminated Sites and Landfills and Built Environment categories, adoption of a Method 1 approach could tend to raise overall procurement costs. The risk of a significant increase in costs would be limited if confidential project cost caps are established within each tranche.

Recommendations related to tranche evaluation order:

Given that potential cost impacts can be minimized by confidential project cost caps, and that Method 1 opens up the possibility for greater procurement from preferred tranches, Daymark recommends the use of procurement Method 1. The order of evaluation would therefore be as follows:

Tranche 1: Basic Grid Supply. These projects would be awarded up to the point at which the tranche MW target is met, assuming there are sufficient projects below the confidential bid cap. Projects from Tranche 2 and Tranche 3 would be eligible to compete in this category. Projects selected in this first tranche would no longer compete in Tranche 2 or Tranche 3.

Tranche 2: Grid Supply on the Built Environment. These projects would be awarded up to the point at which the tranche MW target is met or the confidential bid cap is exceeded.

Tranche 3: Grid Supply on Contaminated Sites and Landfills. These projects would be awarded up to the point at which the tranche MW target is met or the confidential bid cap is exceeded.

Tranche 4: Net Metered Non-residential Projects above 5 MW (these projects are only eligible for consideration in this tranche). These projects would be awarded up to the point at which the tranche MW target is met or the confidential bid cap is exceeded.

Tranche 5: Storage Paired with Grid Supply Solar. Only projects that receive SREC-II awards as stand-alone projects in Tranche 1, 2, or 3 and that also include storage would be considered. Storage awards would then be made by price of the proposed storage adder, up to the targeted amount of support for 160 MWh of storage or until the confidential bid cap is exceeded.

It is possible that MW targets for any of the above tranches may not be met, either because sufficient proposals were not received, or because confidential price caps were exceeded. In this case, we propose that the Board will have the discretion to re-allocate unfilled MW targets to other categories, if good value projects are still available.

Compliance with land use restrictions

Throughout the bid selection process, the CSI Program administrator will track awarded projects that intend to use land categories subject to a cap, as set forth in the Siting Straw.

The restrictions involve solar development on prime agricultural soils or soils of Statewide importance that are in Agricultural Development Areas (“ADAs”). The specific definitions and calculation methods are defined in the Siting Straw.

If at any point the acreage of projects selected for bid awards reaches any of the caps on use of covered farmland, no further projects using that category of farmland will be selected. Instead, once an agricultural land use cap is reached, any projects sited on farmland subject to that specific cap will be skipped and the next-most-competitive bid will be selected instead.

Projects that intend to construct on land categories where a waiver is required will need to obtain the waiver from the Board as a pre-registration requirement.

E. Auction price result (pay-as-bid vs. single clearing price)

Daymark considered both a pay-as-bid approach to SREC-II awards and a single clearing price approach. We recommend a pay-as-bid approach.

Background

The Solar Act of 2021 mandates the creation of renewable energy certificates, or SREC-IIs, “for each megawatt hour of energy produced by a qualifying solar electric power generation facility...” and mandates that SREC-II renewable energy incentive payments “shall be measured in dollars-per-megawatt-hour of solar power generation” and “shall represent the value of the environmental attribute produced by the solar electric power generation facility.”⁵⁵ For competitively awarded SREC-IIs, the Board is given the power to establish the value per megawatt-hour for selected projects.⁵⁶ There is no requirement that the SREC-II value should be the same for all awarded projects.

Discussion

Single clearing price approach

Under a single clearing price approach, within each tranche, bidders would all receive the same value of SREC-II (this price would be at or near the price of the highest-priced bid selected). Under this approach, low-priced bids would benefit from receiving a higher SREC-II price than their minimum requirement. A version of a single clearing price approach is used in RTO energy markets. The chief benefit of this approach is that bidders all have the incentive to offer the lowest price that would be acceptable to them—knowing that if they succeed in being awarded SREC-IIs, they will likely receive a higher price than what they bid. This incentive to enter the lowest acceptable bid may result in lower costs to consumers. There is a secondary benefit of greater simplicity of administration, as all bidders within a given tranche would receive the same SREC-II value.

One major concern with this approach is that in a tranche with relatively few bids and a wide range of bids, the savings obtained through bidding incentives might be offset or more than offset by the influence higher-priced bid could have on overall prices. Given

⁵⁵ N.J.S.A §48:3-117(2)(b).

⁵⁶ N.J.S.A §48:3-117(4)(c).

that NJBPU will be conducting this process for the first time and has little basis for anticipating likely bid prices or number of bids likely to be received in each tranche, the potential for this kind of price distortion is a serious concern.

Of greater concern for this procurement, however, is how a single clearing price approach would interact with the proposed tranche procurement structure. If all successful bids in each tranche receive a single clearing price, but these prices differ from tranche to tranche, there could be significant financial benefits to being in one tranche as opposed to another—setting up a situation in which bidders would need to strategically target their bids to try to ensure they end up in the highest-priced tranche, resulting in distorted bidder behavior.

Pay-as-bid approach

A pay-as-bid approach is widely applied in other state renewable energy procurements and is well-adapted for procurements that must consider bids from diverse types of projects.⁵⁷ Under a pay-as-bid approach, successful bids receive SREC-IIs valued at the amount of their bid. The advantage here would be that in no case does New Jersey end up paying higher SREC-IIs than bid. The disadvantages are, first, that bidders in this system are incentivized to submit the highest bids they think might be successful, and, second, the administrative complexity of a system in which each successful bid gets a distinct SREC-II price.

In preparing the Straw Proposal, Daymark conducted a preliminary exploration of the issue of administrative complexity through discussions with Incline, the contracted administrator for New Jersey's SREC-IIs. This initial conversation suggests that the administrative burden of a pay-as-bid approach would be minimal.

Recommendation on single clearing price vs. pay-as-bid

We recommend a pay-as-bid approach for these SREC-II procurements. The recommendation for the use of the pay-as-bid approach is primarily based on considerations of how the payment structure will interact with the proposed tranche system and the impact on bidding behavior. In a single clearing price approach, the value of SREC-IIs received may vary greatly depending on the award tranche—an effect that may create unintended bidder behavior incentives.

⁵⁷ See NYSERDA Report 15-12 at Section 5.3.1 and Illinois Power Agency Long Term Renewable Resources Procurement Plan, 8/16/2021, at Section 5.3.

F. SREC-II payment structure

The Solar Act of 2021 specifies that projects selected under the CSI Program have the “right to receive a renewable energy incentive payment, in the form of an SREC-II value per megawatt-hour established by the board, for the environmental attributes produced by the solar electric power generation facility.”⁵⁸ Given this language, the CSI Program is limited to compensating projects for their environmental attributes but does have some freedom as to the structure of the SREC-II.

The two general options Daymark considered are Fixed SREC-IIs and Indexed SREC-IIs. In the Fixed SREC-II option, the project would be awarded a fixed incentive for each MWh generated by the project. In the Indexed SREC-II option, the project would receive a variable incentive SREC-II payment that is a function of a bid strike price and indices linked to actual outcomes in the energy and capacity markets.

In theory, the Indexed SREC-II approach would provide greater revenue certainty for project developers, enabling them to receive better project financing terms, and thus also enabling them to present lower cost offers in the solicitation. NYSERDA provides bidders in its Tier 1 procurements with an option for an Indexed REC structure with this consideration in mind.⁵⁹ However, to the extent that Indexed SREC-IIs remove risk from developers, they may increase the risk to ratepayers, since total paid subsidy amounts would be less predictable from year to year and overall under an Indexed SREC-II approach.

Discussion: Indexed RECs vs. Fixed RECs

In order to assess the likelihood that, in general, an Indexed SREC-II approach, in addition to providing greater certainty for developers, would also result in savings for ratepayers in terms of the total subsidy amount required, Daymark performed a Monte Carlo analysis of expected outcomes in terms of project cash flow for projects with Indexed RECs and projects with Fixed RECs. The analysis used historical data and hypothetical project costs to create a range of possible outcomes and analyze the likely

⁵⁸ N.J.S.A §48:3-117(4)(c)(4).

⁵⁹ Case 15-E-0302. “Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard, Order modifying tier 1 Procurements,” January 16, 2020.

impact of the two approaches on the Weighted Average Cost of Capital (“WACC”) for each project and on the total REC payments expected over time.⁶⁰

For Daymark’s hypothetical 300 MWdc procurement, our analysis found that in the majority of cases, estimated total Indexed REC payments were lower than estimated Fixed REC payments. However, there were some scenarios in which Indexed REC payments were higher overall, and the estimated cost difference was relatively small—only \$1.56/MWh.⁶¹

It should also be noted that the analysis makes the implicit assumption that the overall market structure will remain relatively static. In the light of current spikes in renewable construction prices, the evolving regulatory landscape, and the accelerating energy transition, this assumption may prove inaccurate, which would increase the risk to ratepayers of Indexed RECs.

Recommendation on Indexed RECs vs Fixed RECs

We recommend a Fixed REC approach. Daymark acknowledges that Indexed RECs provide risk management benefits to developers and that our analysis did show that, on average, ratepayers could experience savings resulting from an Indexed REC approach. However, the potential consumer savings we found were relatively small. The current market environment for solar power is particularly expensive in ways not reflected in our model—raising the risk that subsequent declining prices will find New Jersey ratepayers facing increasing SREC-II payments under an Indexed REC approach—and there is, as pointed out in the comments, significant change upcoming in how capacity is compensated in PJM, which also increases the uncertainty of future Indexed SREC-II payments. Given the relatively small average benefits projected in our model, we conclude that at this time, a Fixed REC payment approach is lower risk for New Jersey ratepayers.

Discussion: SREC-II term

Daymark recommends that New Jersey establish a standard term for CSI Program SREC-IIs of 15 years, consistent the term for administrative SREC-II awards. Although a longer term was preferred by some of the project developers who commented, a shorter term

⁶⁰ This Report refers to “Indexed SREC-IIs” and “Fixed SREC-IIs” when referring specifically to proposals for SREC-IIs in New Jersey. References to “Indexed RECs” and “Fixed RECs” are used when what is being discussed is the general properties of Indexed RECs and Fixed RECs, not specific to New Jersey.

⁶¹ See Appendix 3 for more information.

carries benefits in terms of consistency of administration and also in terms of minimizing the risk to New Jersey ratepayers inherent in a longer payment commitment.

Recommendation on SREC-II term

Daymark recommends maintaining the 15-year SREC-II term.

Discussion: Administrative vs. contract implementation

All of New Jersey's REC payments take the form of administrative awards, rather than individual contracts. Although contracts might seem to offer greater certainty to project developers, the process of developing individual contracts that would need to be tailored to (and perhaps negotiated with) individual SREC-II recipients would be time-consuming and might result in significant delays between completion of the SREC-II award process and implementation of SREC-II awards.

Recommendation on administrative vs. contract implementation

Because the administrative approach is well-established precedent and is working well in New Jersey, Daymark and Staff propose that the CSI Program SREC-IIs also be awarded administratively, avoiding complexity and effort associated with executing individual SREC-II contracts.

G. Procurement frequency

The Solar Act of 2021 requires that solicitation rounds "occur at least as frequently as once every 18 months."⁶²

In setting a proposed procurement frequency, it is desirable to make the process frequent enough that there are multiple entry points for developers. On the other hand, minimizing administrative costs and maximizing the opportunity for robust competition in each procurement are also important considerations.

Recommendation on procurement frequency

In order to promote access to the program, Daymark proposes that solicitation rounds be held annually.

⁶² N.J.S.A §48:3-117(4)(c).

Appendix 1. Pre-qualification required information

A. Basic Grid Supply

- Bidder name, contact information
- MW nameplate capacity of proposed project
- Description of Project
- Is the project for a public entity? (Y/N)
- Site Plan
- Waivers received (in case of project being located on prohibited site or more than the agricultural land Statewide Threshold)
- GIS coordinates
- Project Address
- Link to PJM Feasibility Study
- Number of acres proposed for development
- If greater than 300 kW per acre, include a statement from a certified engineer confirming feasibility of the installation.
- Does the proposed solar project include a storage component submitted for the storage adder? (Y/N)
- If there is a storage component that is not awarded an adder, does the solar offer stand alone? (Y/N)

B. Grid Supply on the Built Environment

- Bidder name, contact information
- MW capacity of proposed project
- Type of proposed installation (rooftop, carport, etc.)
- Description of project
- Is the project for a public entity? (Y/N)

- Site Plan
- Waivers received (in case of project being located on prohibited site or more than the agricultural land Statewide Threshold)
- Link to PJM Feasibility Study
- GIS coordinates
- Project address
- Number of acres proposed for development
- If greater than 300 kW per acre, include a statement from a certified engineer confirming feasibility of the installation.
- Does the proposed solar project include a storage component submitted for the storage adder?
- If there is a storage component that is not awarded an adder, does the solar offer stand alone? (Y/N)

C. Grid Supply on Contaminated Sites and Landfills

- Bidder name, contact information
- MW capacity of proposed project
- Type of proposed installation/proposed site
- Description of project
- Is the project for a public entity? (Y/N)
- Site Plan
- Link to PJM Feasibility Study
- GIS coordinates
- Project address
- Site ID (for contaminated sites) or Landfill Name (for landfill sites)
- Estimated size of area designated as “contaminated site” or “properly closed sanitary landfill” (in acres)

- Number of acres proposed for development [Note for possible automated check: this number should not exceed the number given in the previous answer by 10% or more]
- If greater than 300 kW per acre, include a statement from a certified engineer confirming feasibility of the installation.
- Does the proposed solar project include a storage component submitted for the storage adder?
- If there is a storage component that is not awarded an adder, does the solar offer stand alone?
- DEP Permit Readiness Checklist
- Self-attestation that the project will not be on prohibited sites, or waiver

D. Net Metered Non-residential Projects above 5 MW

- Bidder name, contact information
- Description of Project
- Is the project for a public entity? (Y/N)
- Site Plan
- MW capacity of proposed project
- Waivers received (in case of project being located on prohibited site or more than the agricultural land Statewide Threshold)
- Part 1 Interconnection Approval form
- GIS coordinates
- Project address
- Number of acres proposed for development
- If greater than 300 kW per acre, include a statement from a certified engineer confirming feasibility of the installation.

E. Storage Paired with Grid Supply Solar

- Bidder name, contact information
- Description of Project

- Storage technology
- Identify the (system-generated) solar project ID number with which it is paired (project must also be entered into the solicitation), and MW nameplate capacity of that project
- GIS coordinates

Figure 1. Example of Bidder Form Contents. Note this is illustrative only. Information will be entered online by bidders. Final user interface will be developed in consultation with web designer.

New Jersey Competitive Solar Incentive (CSI) Program Prequalification Application

Please enter the tranche-specific pre-qualification information requested below. Sections for tranches not being competed for can be left blank.

Tranche 1: Basic Grid Supply

Basic Grid Supply projects include all grid supply solar projects that do not qualify for Tranches 2 or 3 and are connected to the distribution or transmission system owned or operated by a New Jersey public utility or local government unit.

Contact Information

Bidder Name: _____ Phone: (____) _____ - _____
 Email: _____

Proposed Project Details

Project Address: _____ City: _____ ZIP: _____
 GIS Coordinates: _____ Nameplate Capacity (MW): _____
 PJM Feasibility Study (link): _____
 No. of Acres proposed for development: _____
 If greater than 300 kW / acre, provide a statement from a certified engineer confirming feasibility in addendum to this application.

Does the project include a storage component submitted for the storage adder? Yes No

If there is a storage component that is not awarded an adder, does the solar offer stand alone? Yes No

Tranche 2: Grid Supply on the Built Environment

Grid Supply on the Built Environment refers to all grid supply solar projects for which 100% of the photovoltaic panels are installed on rooftops, raised carports over parking lots or parking decks, or similar installations on the built environment, and connected to the distribution or transmission system owned or operated by a New Jersey public utility or local government unit.

Contact Information

Bidder Name: _____ Phone: (____) _____ - _____
 Email: _____

Proposed Project Details

Project Address: _____ City: _____ ZIP: _____
 GIS Coordinates: _____ Nameplate Capacity (MW): _____
 PJM Feasibility Study (link): _____
 Description of Project: _____

 Type of installation (e.g., rooftop, carport, etc.): _____

No. of Acres proposed for development: _____
 If greater than 300 kW / acre, provide a statement from a certified engineer confirming feasibility in addendum to this application.

Does the project include a storage component submitted for the storage adder? Yes No

If there is a storage component that is not awarded an adder, does the solar offer stand alone? Yes No

Site Plan attached? Yes No

Note: A Site Plan must be included in addition to this application for full consideration in this tranche.

Tranche 3: Grid Supply on Contaminated Sites and Landfills

'Contaminated site or landfill' means: (1) any currently contaminated portion of a property on which industrial or commercial operations were conducted and a discharge occurred, and its associated disturbed areas, where 'discharge' means the same as the term is defined in section 23 of P.L.1993, c.139 (C.58:10B-1); or (2) a properly closed sanitary landfill facility and its associated disturbed areas.

Contact Information

Bidder Name: _____ Phone: (____) _____ - _____
Email: _____

Proposed Project Details

Project Address: _____ City: _____ ZIP: _____

Link to place on Landfill / Contaminated sites list: _____

GIS Coordinates: _____ Nameplate Capacity (MW): _____

PJM Feasibility Study (link): _____

Description of Project: _____

Type of installation (e.g., rooftop, carport, etc.): _____

No. of Acres proposed for development: _____

If greater than 300 kW / acre, provide a statement from a certified engineer confirming feasibility in addendum to this application.

Does the project include a storage component submitted for the storage adder? Yes No

If there is a storage component that is not awarded an adder, does the solar offer stand alone? Yes No

Site Plan attached? Yes No

Note: A Site Plan must be included in addition to this application for full consideration in this tranche.

Tranche 4: Net Metered Non-residential Projects above 5 MW

Net metered non-residential Projects above 5 MW must meet the requirements of their New Jersey utility to qualify as net metered projects serving non-residential customers.

Contact Information

Bidder Name: _____ Phone: (____) _____ - _____
Email: _____

Proposed Project Details

Project Address: _____ City: _____ ZIP: _____

GIS Coordinates: _____ Nameplate Capacity (MW): _____

PJM Feasibility Study (link): _____

No. of Acres proposed for development: _____

If greater than 300 kW / acre, provide a statement from a certified engineer confirming feasibility in addendum to this application.

Please provide an email or letter from utility indicating approval to construct in addendum to this application.

Note: The exact title of approval will vary by utility – e.g., Approval to Install, Conditional Approval, etc.

Tranche 5: Storage Paired with Grid Supply Solar

Storage Paired with Grid Supply Solar is any project that qualifies to participate in Tranches 1, 2, or 3 and which includes a battery storage unit that meets PJM’s definition of either a co-located or hybrid storage resource. (In the case of co-located storage, pre-qualification must include evidence of separate PJM queue status.)

Contact Information

Bidder Name: _____ Phone: (____) _____ - _____
Email: _____

Proposed Project Details

Proposed Storage (MWh): _____ Storage Technology: _____

Identify the solar project with which this storage is paired: _____

_____ GIS Coordinates: _____

Nameplate Capacity (MW): _____

Has the paired solar project also been entered into the solicitation? Yes No*

*If No: please ensure that the paired solar project has been entered into the solicitation.

APPENDIX 2: SOLAR PLUS STORAGE FLOW CHART EXAMPLES

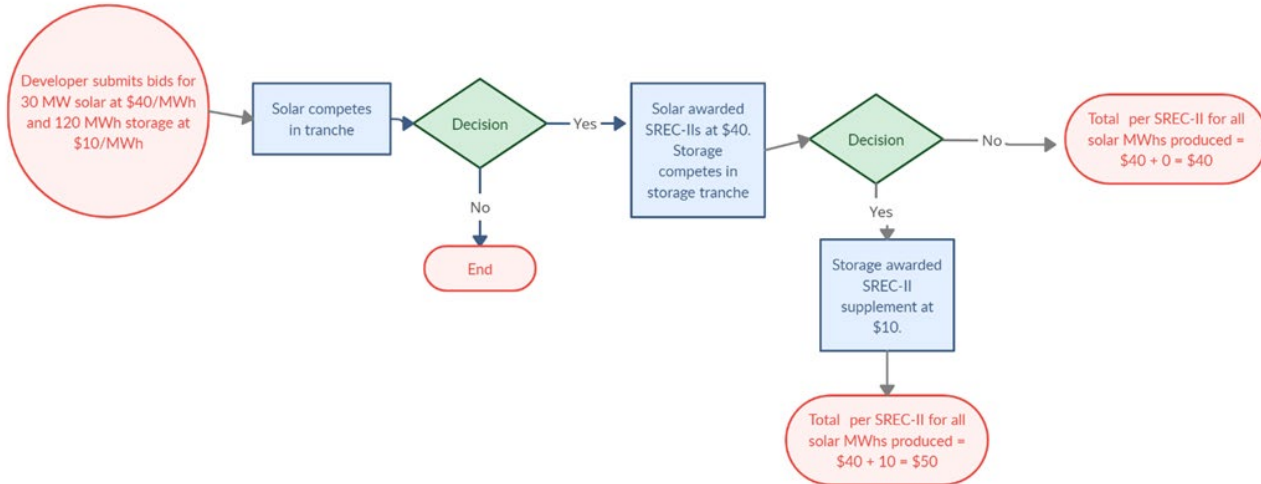


Figure 3. Solar Plus Storage Project, 100% Capacity Match

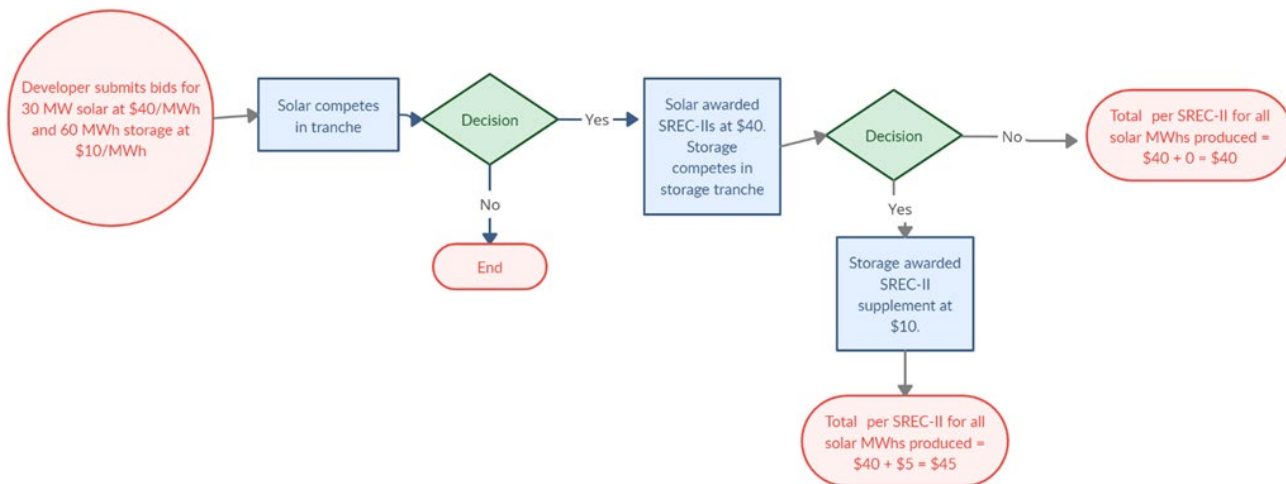


Figure 4. Solar Plus Storage Project, 50% Capacity Match

APPENDIX 3. INDEXED RECS VS. FIXED RECS ANALYSIS

Some stakeholders, including the Solar Energy Industry Association (“SEIA”) and several developers, mentioned that Indexed RECs are a key feature they desired in the CSI Program design. New York has adopted an Indexed REC approach to their state renewables procurements.⁶³ Daymark conducted an analysis to understand if switching to an Indexed REC approach would benefit New Jersey ratepayers. The objective of the analysis was to understand both the impact of switching to Indexed RECs on the expected cost to ratepayer and the risk to ratepayers if market conditions differed from expectations.

What is an Indexed REC?

In previous NJBPU procurements, developers have been awarded Fixed RECs. With Fixed RECs, the project is awarded a fixed incentive for each MWh generated by the project for a defined number of years. While the developer’s REC revenue is fixed, a grid supply project’s revenue from energy and capacity markets varies with wholesale markets. With Indexed RECs, the developer would bid a “strike price,” which represents the per MWh all-in revenue sought by the developer. The project receives a variable incentive payment that is a function of a bid strike price and indices linked to actual outcomes in the energy and capacity markets. This means that in the Indexed REC construct, ratepayers pay a variable REC incentive. Below is a graphical representation of the two options.

⁶³ An overview of New York’s “Index REC” approach can be found in the document, *NYSERDA Comments on the AWEA/ACE-NY Petition Regarding Integration of an Index REC Procurement Structure into Tier 1 REC Procurements Under the Clean Energy Standard*. Submitted by the New York State Energy Research and Development Authority, October 2, 2019. Available at: <https://www.nyserda.ny.gov/-/media/Files/Programs/Clean-Energy-Standard/2019/2019-10-02-NYSERDA-Comments-on-Petition-on-Index-REC-Structure.ashx>.

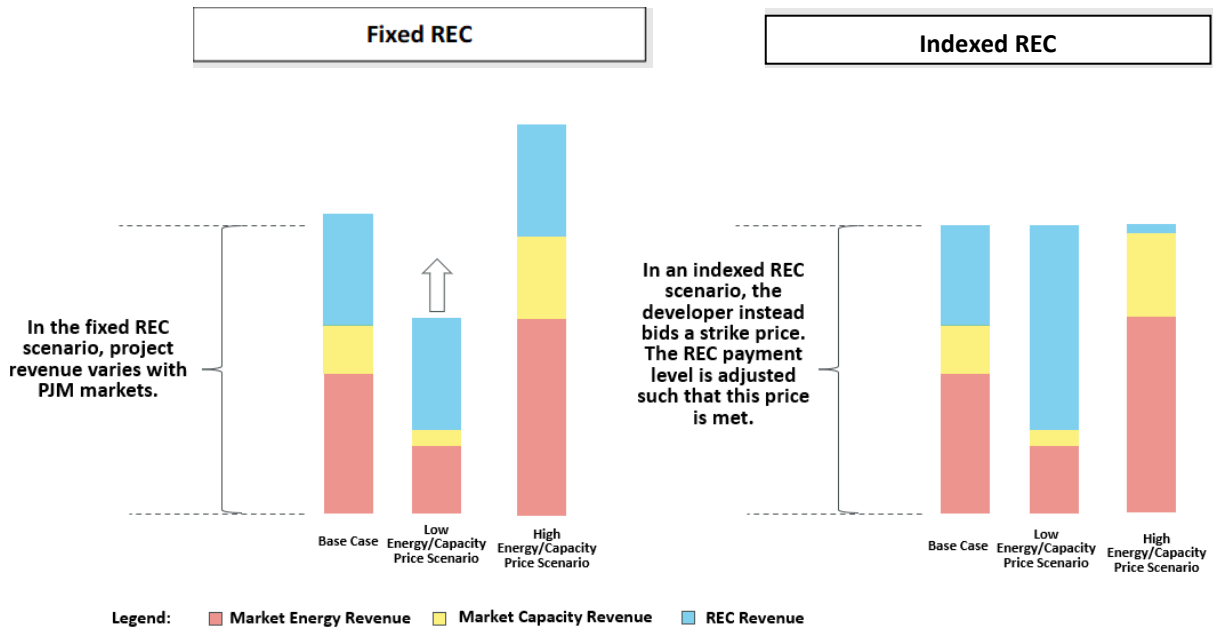


Figure 5. Fixed RECs vs. Indexed RECs

Impact on developer risk

Developer revenue risk impacts the weighted average cost of capital for a project. Less risky projects are expected to be able to access less expensive capital and would therefore be able to bid lower prices in the CSI Program. Under a Fixed REC contract, the developer has four primary types of risk: capacity market risk, energy market price risk, production risk, and basis risk. By providing the project an all-in price per MWh of energy produced, the Indexed REC contract would remove two of these risk factors – capacity and energy market risk. These two risk factors are shifted to ratepayers, who effectively serve as an underwriter in cases where capacity or wholesale energy market revenues are lower than expected. The production risk and basis risk would continue to be borne by developers.

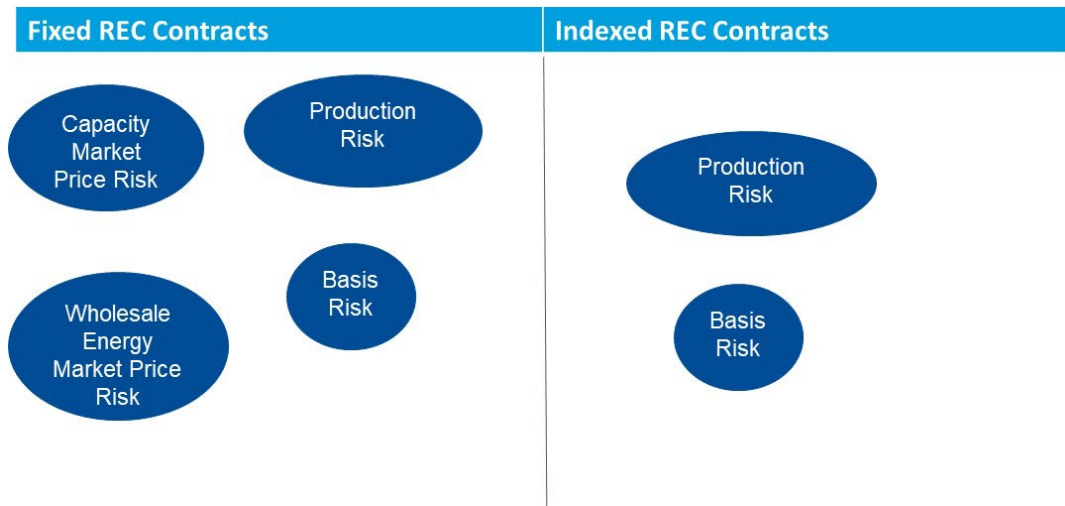


Figure 6. Developer Risk with Fixed REC and Indexed REC Contracts

Daymark analysis

Daymark developed an analysis to understand two potential impacts of switching to Indexed RECs:

- Impact on REC price associated with developers’ revenue uncertainty risk; and
- Impact on overall ratepayer cost due to risks associated with variable REC payment structure.

Calculating impact on REC price associated with developers’ revenue uncertainty risk

The first step in the analysis was to calculate the impact on expected REC prices associated with the reduced risk in an Indexed REC contract. To do this, Daymark first calculated the impact of using Fixed versus Indexed RECs on the WACC and then calculated the impact on expected REC price.

Daymark developed an Excel model of two identical solar projects (same nameplate capacities, capital and operating expenses and production profiles). One of the projects had a Fixed REC contract structure and the other had an Indexed REC structure.

Daymark then developed a Monte Carlo analysis of the revenues for the projects under the two different contract structures. The revenue in the Fixed REC structure was assumed to be market energy and capacity revenues plus the Fixed REC, and the revenue for the Indexed REC structure was assumed to be the strike price bid by the

developer. The distribution of energy and capacity revenues was based on historical energy and capacity market prices over the last 10 years. The median values for energy and capacity were used to create a shared forecast of revenues for both projects. The initial Fixed REC and strike price values were calculated by determining the required price to yield an NPV of zero, assuming median historical energy and capacity revenues and a WACC of 5%.⁶⁴

The Monte Carlo distributions of deviations from energy and capacity reference price forecasts were applied to both projects. The Indexed REC project witnessed a constant cash flow in all simulations during the contract period, whereas the Fixed REC project had a varying cash flow for each year.

To determine the impact of the Indexed REC on the hypothetical developer's WACC, Daymark determined the WACC that would make the variable cash flows in the Fixed REC contract equal to the fixed cash flows in the Indexed REC contract. Daymark did this by equating the REC cash flow distribution risk to the Indexed REC cash flow distribution risk by varying the Fixed REC project WACC through a Conditional Value at Risk ("CVar") methodology.

Next, Daymark used the new increased WACC to estimate the required Fixed REC price that corresponds to the index price calculated above. Daymark completed the analysis for the base assumption capital expenditures of \$1200/kW and a higher cost sensitivity.

Figure 7, below, summarizes the structure of the model described above, and Table 4, below, shows the results of the analysis. It shows that for the base assumptions, the impact on WACC is about 0.25 percent, which results in an expected REC savings of about \$1.56/MWh.

⁶⁴ <https://www.nrel.gov/docs/fy20osti/76881.pdf>.

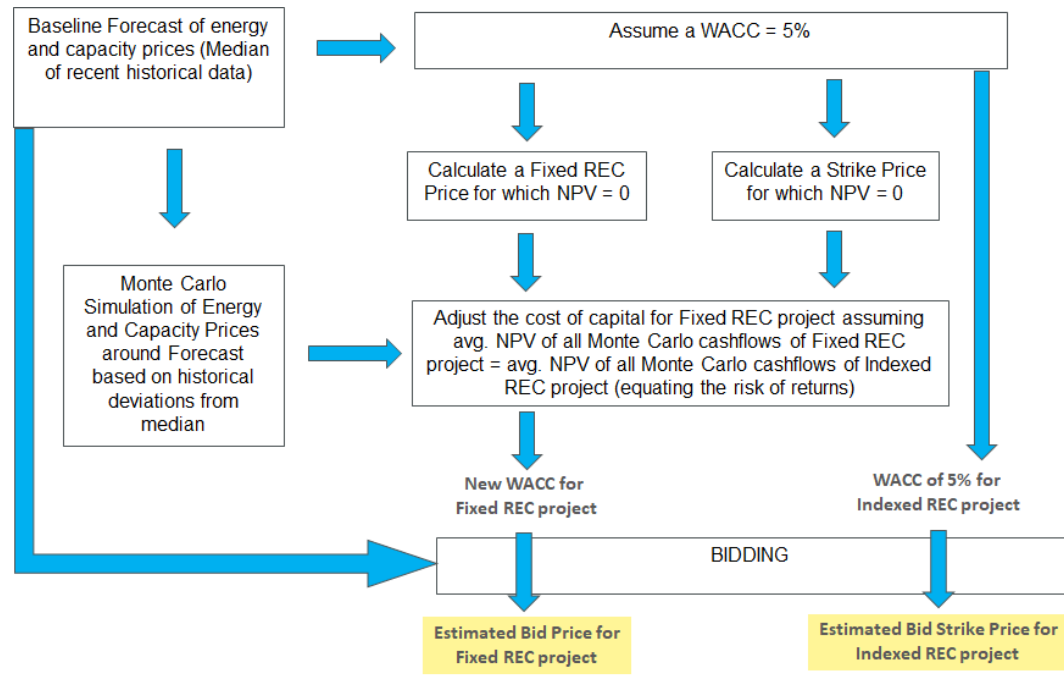


Figure 7. Daymark Model Structure

Table 4. Results of Analysis

	CAPEX \$/kW _{DC}	WACC DIFFERENCE	15-YEAR FIXED REC PRICE	15-YEAR STRIKE PRICE	AVERAGE INDEXED REC PRICE	INDEXED REC PRICE – FIXED REC PRICE
Base Assumption	\$1,200	0.24%	\$41.11	\$76.58	\$39.55	\$1.56
Higher Cost Solar	\$1,950	0.16%	\$83.34	\$117.97	\$80.94	\$2.40

Impact on ratepayers

The next step in the analysis was to understand how ratepayers would be impacted by a change to Indexed RECs. Daymark used the same model to simulate ratepayer REC costs with a Monte Carlo analysis. In the case of the Fixed REC, the ratepayer costs were constant across all draws, while the ratepayer costs varied with market costs for the Indexed RECs. According to this analysis, ratepayers were better off more than 75 percent of the time in the Indexed REC case.

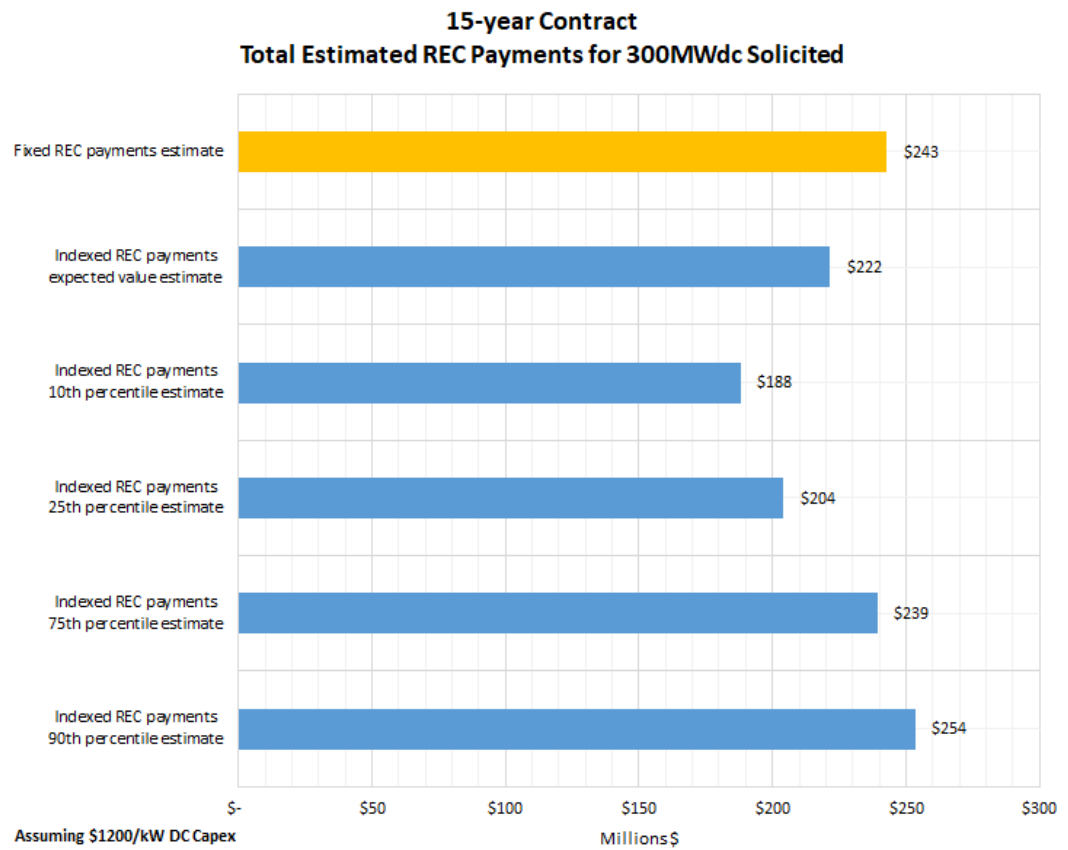


Figure 8. Ratepayer Costs

APPENDIX 4. PJM’S CURRENT QUEUE PROCESS

Queue phases

Under the current PJM queue process, large projects (greater than 20 MW) in the PJM queue move through the following phases:

- Feasibility Study underway
- System Impact Study underway
- Facilities Study underway
- Development of Interconnection Service Agreement
- Signed Interconnection Service Agreement. Smaller projects (20 MW or less) may be eligible for a streamlined process, in which the Feasibility and System Impact Studies are combined, and the Facilities Study is waived.

Each of the required studies requires time to complete and requires funding from the applying project. Throughout the process, projects drop out of the queue for a variety of reasons. A review of withdrawn solar projects in New Jersey from 2013–2019 shows that, among the roughly 65% of projects that withdrew at some point, almost two thirds withdrew before completion of the System Impact Study, and more than three quarters withdrew before completion of the Facilities Study.

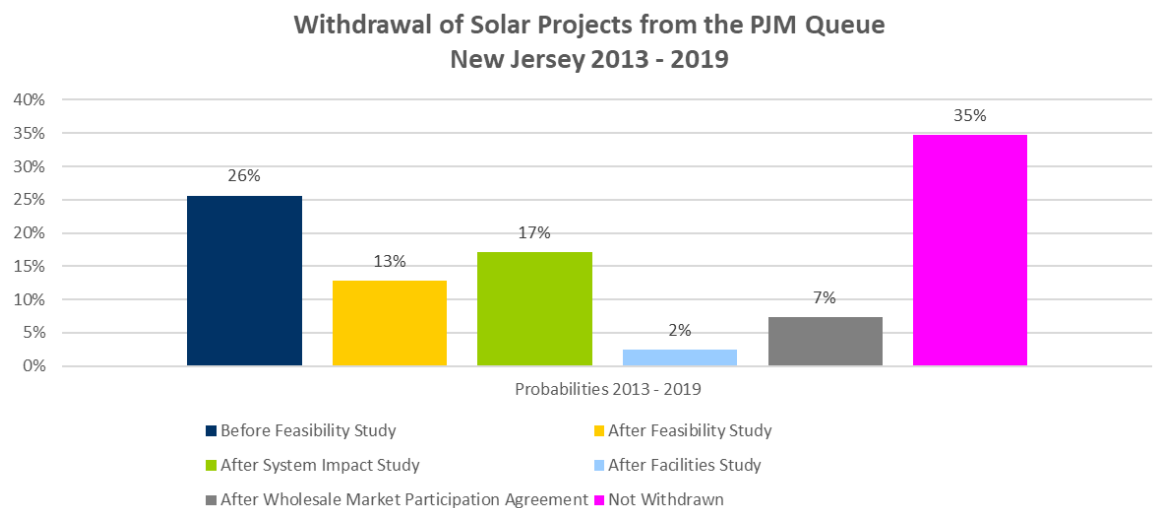


Figure 9. Withdrawal of Solar Projects from the PJM Queue

Queue costs

In order to proceed through the PJM queue, projects must pay for the costs of the required studies. For smaller projects (20 MW and below), the most significant potential cost is a \$50,000 charge for the facilities study, if it is required. For larger projects, costs prior to the facilities study depend on project size, but are capped at \$410,000. The facilities study is at least \$100,000, or higher, depending on the complexity of the study. PJM is currently evaluating a proposal that may significantly increase these deposit amounts.

Queue timing

The timeline for the PJM queue process for larger projects is designed to be about 26 months.⁶⁵ For smaller projects, an abbreviated process that should take about a year is available, provided the project does not “cause transmission system violations” and only requires a single point of interconnection. In practice, for large projects, developers commented that completion of the process all the way to an Interconnection Service Agreement is a necessary part of the development process.

Recently, many of the delays in the process occur at the very beginning, as more than a year can go by between the deadline to register for a queue position and when the queue position becomes active.

⁶⁵ PJM, “Interconnection Process Overview,” 2020, p. 12, available at: <https://www.pjm.com/-/media/committees-groups/task-forces/iprtf/postings/interconnection-process-overview.ashx>.

APPENDIX C: SOLAR SITING GEOGRAPHIC INFORMATION SYSTEM (GIS) DATA SOURCES & ANALYSIS PROCEDURE

Required Environment Coordinate System:

NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet projected coordinate system

Required Spatial Data:

- County Boundaries of New Jersey
 - [County Boundaries of NJ | County Boundaries of NJ | NJDEP Open Data \(arcgis.com\)](#)
- New Jersey Agricultural Development Areas
 - [New Jersey Agricultural Development Areas - Overview \(arcgis.com\)](#)
- Land Use/Land Cover 2015
 - [Land Use/Land Cover of New Jersey 2015 \(Download\) | NJDEP Open Data \(arcgis.com\)](#)
- Preserved Farmland
 - [Preserved Farmland of New Jersey | Preserved Farmland of New Jersey | NJGIN Open Data \(arcgis.com\)](#)
- NJ Highlands Preserved Lands "
 - Link: : [Preserved Lands | Preserved Lands | NJ Highlands Council Open Data \(arcgis.com\)](#)
- Pinelands PDC SEV Area"
 - Link: [New Jersey Pinelands Commission | Pinelands Interactive Map \(nj.gov\)](#)
- NRCS Soils Data (New Jersey's Important Farmland Soils)
 - [New Jersey Important Farmland Soils - Overview \(arcgis.com\)](#)
- State, Local and Nonprofit Open Space (Contains Green Acres)
 - [State, Local and Nonprofit Open Space of New Jersey | State, Local and Nonprofit Open Space of New Jersey | NJDEP Open Data \(arcgis.com\)](#)

Analysis Procedure

Upon acquiring the input data listed above, the following procedure was used to determine the approximate acreage values shown in the table below. All area calculations must be performed in an environment using the NAD_1983_StatePlane_New_Jersey_FIPS_2900_Feet projected coordinate system.

1) 2.5% Statewide Threshold:

- a. Create a new layer derived from the NRCS Soils data that isolates the features representing the Soils of Interest. To do this, select and export the features using the following query: [ClassName = Farmland of Statewide Importance, OR ClassName = Prime Farmland]
- b. Use the clip tool to crop this area to LULC15 designated as Agriculture. Use the clip tool again to crop this new data layer within the ADA boundary layer.
- c. Calculate the Total acreage of prime agricultural soils and soils statewide importance (within the ADA by creating a new field and calculating the geometry using the projected coordinate system listed above).
- d. Calculate the statistics in the Attribute Table to sum the total for statewide acres of the new field. Multiply this sum by 0.025.

2) County-by-county 5% Development Limit

- a. Merge the exclusion areas (Highlands, Pinelands, Open Space and Green Acres, and Preserved Farmland) data into one layer.
- b. Use this layer and the ADA soils layer created in the Statewide Threshold procedure above in the Pairwise Erase tool to remove the exclusion areas.

Approximate 2.5% Statewide Threshold	
Designations	Approximate Area Calculations
Land Use–Land Cover areas designated as Agriculture that are co-located with Prime Farmland Soils and Soils of Statewide Importance within ADAs	339,700 acres
0.025 * 339,700	8,493 acres
Calculations performed using Esri ArcGIS Pro version 2.9	

County-By-County 5% Development Limit	
County	Approximate Area Calculations
SALEM	1,635
HUNTERDON	1,388
CUMBERLAND	1,188
WARREN	904
GLOUCESTER	819
BURLINGTON	724
MONMOUTH	678
SOMERSET	507
ATLANTIC	416
MERCER	267
SUSSEX	260
CAMDEN	199
MIDDLESEX	130
CAPE MAY	85
OCEAN	77
MORRIS	70
BERGEN	4
PASSAIC	2
UNION	0
HUDSON	0
ESSEX	0
Calculations performed using Esri ArcGIS Pro version 2.9	