

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

Proceeding on Motion of the Commission
Regarding a Retail Renewable Portfolio Standard

Case 03-E-0188

Proceeding on Motion of the Commission to
Consider a Clean Energy Fund

Case 14-M-0094

**PETITION REQUESTING ADDITIONAL NY-SUN PROGRAM
FUNDING AND EXTENSION OF PROGRAM THROUGH 2025**

Introduction

The NY-Sun Program is an initiative to expand solar photovoltaic (PV) capacity throughout New York State, with a current goal of installing 3 gigawatts (GW) of PV capacity by 2023. The New York State Public Service Commission (the “Commission”) first established the NY-Sun Program through its Order in Case 03-E-0188,¹ which directed the New York State Energy Research and Development Authority (NYSERDA) to administer the initiative through the authorization of \$1 billion to procure solar PV through a MW Block Program between 2014 through 2023. Since the inauguration of the program through September 30, 2019, NY-Sun has incentivized 934 MWdc of completed solar PV and built out a 1,053 MWdc pipeline of mature projects. The Statewide total of completed distributed solar PV capacity as of September 30, 2019 is 2,013 MWdc, providing strong evidence that NY-Sun is successfully stimulating statewide solar adoption in furtherance of the Commission’s directive under the original Order.

¹ Case 03-E-0188, Proceeding on Motion of the Commission Regarding a Retail Renewable Portfolio Standard, Order Authorizing the Redesign of the Solar Photovoltaic Programs and the Reallocation of Main-Tier Unencumbered Funds (issued and Effective December 19, 2013).

Since the inauguration of the NY-Sun Program, adjustments have been made to the Program as state energy policy has evolved. Of particular note are increasing the projects size in the Standardized Interconnection Requirements (SIR) from 2 MWac to 5 MWac allowing for scale of economy, the establishment and improvements to the Community Distributed Generation and the Value of Distributed Energy Resources tariff structures,² which have provided more transparent valuations of the energy and environmental attributes of solar PV to the distribution systems. More accurate and transparent values provide bankability for project developers of distributed energy resources (DERs) and has had a robust effect on the NY-Sun Program and the installation of solar PV in New York generally. Collectively the certainty and transparency of the NY-Sun declining MW Block program in addition to the mentioned policy improvements have driven down the costs for installation of solar PV in New York even faster than originally projected. Since the inception of NY-Sun in 2014 NYSERDA supported projects statewide average installed cost has fallen by 57% from \$3.68/Watt to \$1.59 /Watt and the NY-Sun incentive level has likewise fallen by 65% over that same time period.

Recognizing the success of the state's solar policies and incentives to date, Governor Andrew Cuomo announced as part of his 2019 State of the State address that distributed solar PV will continue to serve as a critical component for achieving the State's ambitious clean energy agenda, which includes a new target to obtain 70 percent of the state's electricity from renewable resources by 2030 and 100 percent from carbon free resources by 2040. Central to this new policy direction is the increase of the statewide goal for distributed solar PV deployment from 3 gigawatts (GW) DC to 6 GWdc by 2025. Following Governor Cuomo's announcement of his Green New Deal agenda, the Climate Leadership and Community Protection Act (CLCPA) was passed by the New York State legislature, signed by the Governor. The CLCPA specifically directs the Commission to adopt programs to effectuate the State's increased clean energy and solar objectives, including advancing a new goal for installations of solar PV

² See Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, Order on Net Energy Metering Transition Phase One of the Value of Distributed Energy Resources, and Related Matters (issued March 9, 2017) (VDER Transition Order); see, Case 15-E-0751, supra, Order Regarding Value Stack Compensation (issued April 18, 2019) (Value Stack Compensation Order).

of 6 GWdc by 2025. This Petition is advanced in light of these emerging State policies, as well as to ensure the solar PV market is able to respond to such policy changes in a timely manner to meet the new expanded State goal.

This Petition seeks authorization of an additional \$573 million to support the expanded 6 GWdc policy goal, and an extension of the NY-Sun Program through calendar year 2025. NYSERDA requests that funds may be expended beyond 2025 for program commitments, such as post-completion performance payments, program implementation, and administration. From this new allocation, NYSERDA seeks to make available \$290 million for the MW Block incentive program; \$111 million for a Community Adder incentive to support development of community solar once the Community Credit tranche capacity has been fully allocated; \$135 million for projects benefitting low-to-moderate income (LMI) customers, affordable housing, environmental justice communities, and disadvantaged communities; \$19 million for incentive adders for projects that meet certain criteria, such as being sited on brownfields or landfills; \$7.8 million for program administration; \$3 million for customer education; and \$6.6 million for the New York State Cost Recovery Fee. Each of these funding categories is described in more detail below and would be further detailed in an amended NY-Sun Operating Plan in the event of an affirmative decision on this Petition. NYSERDA intends to continue using the NY-Sun Operating Plan to provide details on program rules and incentives, in accordance with authorized procedures.³

These additional funds are expected to support the deployment of additional solar capacity beyond the 3 GW target authorized by the Commission's April 2014 Order Authorizing Funding and Implementation of the Solar Photovoltaic MW Block Programs (April 2014 Order) to help achieve the new statewide target of 6 GWdc of distributed solar PV by 2025. Progress towards the 6 GWdc target will

³ Case 03-E-0188, supra, Order Authorizing Funding and Implementation of the Solar Photovoltaic MW Block Programs (issued and effective April 24, 2014) (April 2014 Order). *See* Case 14-M-0094, Proceeding on Motion of the Commission to Establish a Clean Energy Fund, Order Authorizing the Clean Energy Fund Framework (issued and effective January 21, 2016) (CEF Order).

be tracked on a public-facing online dashboard, and will include and track all statewide distributed PV capacity regardless of whether it is supported through an expanded NY-Sun Program as requested under this Petition or otherwise.⁴ It is anticipated that an expanded NY-Sun Program coupled with an estimated 1,200 MWdc of capacity built without NY-Sun incentives, inclusive of approximately 700 MWdc of such capacity built to date, will result in total statewide deployment of 6 GWdc of distributed solar PV capacity by the end of 2025, thus achieving the target set forth by Governor Cuomo and in the CLCPA.

It is also anticipated that the expanded NY-Sun Program will be able to better advance state policy goals that are interrelated with achieving the 6GWdc deployment target, including: dramatically advancing access to solar energy for LMI customers, environmental justice communities and disadvantaged communities; improving air quality by allowing solar to participate in “backing down” fossil-fuel fired peaking units; reducing potential land use conflicts while protecting the integrity of forests, wetlands, and agricultural lands; and democratizing access to solar energy more broadly by supporting the widespread deployment of Community Distributed Generation.

Taken as a whole, NYSERDA strongly believes that this proposed expansion of the NY-Sun Program will support a range of substantial benefits for New York energy consumers by facilitating the continued and accelerated deployment of distributed solar statewide in furtherance of multiple state policy goals and with a continued declining cost trajectory that will benefit ratepayers as the State seeks to meet the renewable energy targets in the CLCPA.

⁴ Updates are available at <https://www.nyserda.ny.gov/About/Tracking-Progress/Statewide-Completed-Solar-Projects>.

Background

The NY-Sun Program was established and has been adjusted through a series of Commission Orders in the Renewable Portfolio Standard (RPS) and Clean Energy Fund (CEF) proceedings.⁵ The Commission's April 2014 Order in Case 03-E-0188 authorized NYSERDA to allocate funds to support, implement, and administer eligible PV programs under the RPS Customer Sited Tier (CST) during the term 2016 through 2023,⁶ approved initial design criteria for the MW Block program, and authorized NYSERDA to use program funds for projects to advance participation by Low-to-Moderate Income (LMI) customers. The combined funding authorized for the NY-Sun Program by the 2013, 2014 and 2016 CEF Orders, for years 2014 through 2023, was \$1,176,556,000.

The NY-Sun Program is administered through a "Megawatt Block" design, which provides various incentive levels for different regions of the State and different solar market sectors. NY-Sun program incentive levels are established in known capacity blocks for different regions of the state and customer class or sector. Incentive levels are appropriately paired to market conditions, and in response to market uptake will decline as growth in that market develops. This design has proven highly successful and responsive to dynamic market conditions. For instance, Long Island experienced early growth in both residential and commercial solar deployment. Accordingly, this market maturity led the incentive block structure on Long Island to step-down more quickly than other regions of the State. The last residential block incentive in the Long Island region closed in April 2016, and the last nonresidential block closed in February 2019, making it the first solar market in the State able to sustain growth without direct consumer-based incentives. NYSERDA remains cognizant of the opportunities and challenges facing the Long Island market, and will continue to work with stakeholders and the Long Island Power Authority

⁵ Case 03-E-0188, supra, April 2014 Order. The April 2014 Order authorized the NY-Sun budget, and through the "Order Authorizing the Clean Energy Fund Framework," incorporated the NY-Sun Program into the Clean Energy Fund (CEF). Case 14-M-0094, supra, CEF Order.

⁶ The former CST PV program became the NY-Sun Program through the Commission's December 2013 "Order Authorizing the Redesign of the Solar Photovoltaic Programs and the Reallocation of Main Tier Unencumbered Funds," in Case 03-E-0188, supra.

(LIPA) to ensure that Long Island continues to play an important role in achieving the statewide target of 6 GWdc of distributed solar PV capacity by the end of 2025.

In tandem with the implementation of the declining MW Block program, NYSERDA aggressively works to drive down the non-material “soft costs” associated with the installation of PV systems. These soft cost reducing initiatives target project siting, permitting, interconnection, and information to municipalities regarding appropriate payments in lieu of taxes (PILOT). When combined with realized system hardware cost declines, total realized PV system installed cost has decreased 71% since 2008.

As NYSERDA reported in its Third Quarter 2019 report, 994 MWdc of PV supported with NY-Sun funding have been installed, with an additional 1,039 MWdc of solar in the pipeline (Table 1). Energy generated from these NY-Sun supported systems produces almost 1.1 million megawatt-hours (MWh) of electricity each year, reducing carbon dioxide equivalent (CO₂e) emissions by over 576,000 metric tons (MT) each year. Program activities and progress in specific regions and sectors is reported in the NY-Sun 2018 Annual Report.⁷

Table 1: NY-Sun MWdc Capacity Toward 3GW Goal, Q3 2019

Program	Projects Completed (Installed Units) with Adjustments through 6/30/19	Projects Completed (Installed Units) 7/01/19 - 9/30/19	Projects Completed (Installed Units) through 9/30/19	Applications Approved but Not Yet Contracted (Current Pipeline)	Projects Contracted but Not Yet Completed (Current Pipeline)	Total (Current Pipeline + Installed Units) through 9/30/19
Residential / Small Commercial	525.54	24.36	549.90	6.93	87.00	643.83
Commercial / Industrial	258.71	25.11	283.81	47.42	895.03	1,226.26
Competitive PV	100.14	0.00	100.14	0.00	16.24	116.37
Grand Total	884.38	49.47	933.85	54.35	998.26	1,988.46

⁷ NY-Sun’s annual and quarterly Performance Reports are available at <https://www.nyserra.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/NY-Sun-Performance-Reports>.

Analysis

In preparing this Petition, NYSERDA conducted in-depth analysis and market research of solar PV project economics and development potential. This analysis considered current industry cost data and projections, siting/interconnection constraints, current interconnection queues, market saturation potential, financing, and potential policy changes. NYSERDA also performed research into the impacts of the forthcoming step-down of the federal investment tax credit (ITC) and the potential to “safe harbor” projects at each ITC level.

To design an expanded NY-Sun Program and associated budget, NYSERDA drew upon its market research and professional expertise to project and model potential solar PV deployment by year, sector, and geographic region, while considering historic deployment rates, market conditions, and anticipated policy changes. NYSERDA acknowledges that this design is based on current market intelligence, and that underlying assumptions may be subject to change based on unknown future market and policy forces. NYSERDA’s analysis specifically assumes the following:

- The improvements to the Value of Distributed Energy Resources (VDER) compensation tariff that were ordered by the Commission in April 2019 have been implemented.⁸ The improvements provided industry certainty and bankability as evidenced by the rapid uptake in the Community Credit tranches and the NY-Sun Commercial/Industrial MW Block Program.
- Federal tax credits and trade tariffs will step down.⁹ Through numerous conversations with tax equity partners, financiers, and solar developers, NYSERDA understands that most of the new capacity in development now and in the future will receive a less than the 30% tax credit absent a change in federal tax law.
- Solar PV hardware costs will continue to decline (~4% per year).

⁸ Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, Order Regarding Value Stack Compensation (issued and effective April 18, 2019) (Value Stack Order).

⁹ Although NYSERDA is aware of stakeholder efforts to extend the ITC, the analyses assume the current rate of the ITC step-down, as described in the Internal Revenue Code.

- More kWh per kW will be generated through single axis trackers, which adjust a solar PV panel's direction to track the sun, and bi-facial solar modules, which generate electricity on both sides of the solar PV panel, which will be incorporated into an increasing proportion of larger ground mounted solar PV projects.
- Consolidated Billing for Community Distributed Generation (CDG) will be implemented by the investor owned utilities by 2021 and will reduce soft costs for community solar both effecting customer acquisition and ongoing billing costs.
- Labor costs for distributed solar projects of less than 5 MWac will remain stable and consistent with historic trends.

NYSERDA's analysis demonstrates that the most cost-effective and achievable path to reaching the 6 GW goal is through commercial/industrial scale projects – predominantly ground mounted and sized at 5 MWac – located in the upstate utility territories. NYSERDA's analysis further suggests that the residential solar market in the Consolidated Edison (ConEd) region will continue to grow without further incentives beyond the current MW Blocks, and that this market will contribute approximately 120 MW in new solar PV deployed outside of the NY-Sun Program. Similarly, NYSERDA's analysis demonstrates that the current Upstate Nonresidential MW Blocks and ConEd Nonresidential MW Blocks are sufficient to support all projected new capacity in those sectors through 2025.

Requested Actions

I. Extend the NY-Sun Program and Add Funding

a. Base Program Incentives

NYSERDA requests that \$290 million of the total requested funding be added to the MW Block incentive program to support approximately 1,800 MWdc of new solar capacity. Pending additional analysis and stakeholder input, it is anticipated that:

- Approximately \$199 million of the requested funding will be added to the Upstate Commercial/Industrial MWdc Block incentives, which supports projects between 750 kWdc and 7,500 kWdc (equivalent to the maximum allowable system size of 5 MWac under the Standard Interconnection Requirements). This funding will be used for additional Blocks to supplement the current Commercial/ Industrial MW Blocks. This sector has the greatest projected growth through 2025 based on the NYSERDA analysis described above.
- Approximately \$48 million of the requested funding will be added to the Upstate Residential MW Block, which supports residential projects up to 25 kWdc. This funding will be used to restructure the current block design to support the continued maturation of this market segment amidst the decline in the federal Investment Tax Credit and the anticipated transition from net-metering.
- As stated above, assumptions are based on current market intelligence, and as such, underlying assumptions may change based on unknown future market and policy forces. Therefore, NYSERDA proposes that approximately \$44 million of the total requested funding be available as unallocated incentive funds to supplement MW Block incentives as may be required by changing policy, economic, and technological conditions over time. The

process for adjusting incentive levels using these funds will remain unchanged, following the process described in the current NY-Sun Operating Plan.¹⁰

- Finally, NYSERDA anticipates that additional funding will become available from projects that are canceled in the existing MW Block program. It is also anticipated that certain MW Blocks existing under the current NY-Sun Program may not be fully allocated by 2025. In either event, funds from these sources will be reallocated to support market segments that demonstrate market potential and need, following the procedure described in Section 2.1.2 (“Flexibility to Adapt to Market Conditions”) of the current NY-Sun Operating Plan.¹¹

b. Incentive Adders to Support Focused Market Segments

NYSERDA requests a series of specific incentive adders in order to support and drive solar PV deployment in specific market segments. Incentive adders are an effective way to encourage projects that contribute to the NY-Sun capacity goals while also meeting other policy or market objectives, such as opening new types of project sites to development. To better accommodate changing market conditions, NYSERDA may shift funds between different adder offerings, and between adder incentives and base incentives, as required to better accommodate changing market conditions following the procedure described in the current NY-Sun Operating Plan.

1. Community Adder

First, NYSERDA requests that the Commission authorize NYSERDA to use \$111 million of the \$573 million in requested funding to provide additional incentives for community solar projects in utility territories that have exhausted their VDER Community Credit tranches (the “Community Adder”).

¹⁰ Cases 03-E-0188 and 14-M-0094, supra, NY-Sun 2018-2024 Operating Plan (effective June 6, 2019) (current NY-Sun Operating Plan).

¹¹ Id. at 10.

On March 9, 2017, the Public Service Commission issued the VDER Transition Order,¹² which directed that the compensation structure for eligible distributed energy resources (DERS) transition from net energy metering (NEM), a blunt compensation mechanism designed to appropriately open up markets and drive initial development at the time, to the VDER Phase One tariff (the “Value Stack”). The VDER Transition Order improved the compensation structure for DERs by clarifying the value DERs provide to the electric system and provided a foundation for continual improvement of the Value Stack.

The VDER Transition Order established Phase One NEM and an adder to the Value Stack for mass market customers, referred to as the Market Transition Credit (MTC). CDG projects compensated under the Value Stack tariff were eligible for an MTC. Eligibility for MTC compensation was subject to the availability of capacity allocations (in megawatts) in each utility that were derived from the incremental 2% net revenue impact limitation.

On April 18, 2019, the Commission issued the Order Regarding Value Stack Compensation (the “Value Stack Compensation Order”), which established, *inter alia*, a Community Credit for new CDG projects, in place of the MTC.¹³ Through the Value Stack Compensation Order, the Commission also authorized NYSERDA to fund a Community Adder incentive from previously collected, uncommitted ratepayer funds, for CDG projects in Central Hudson or Orange and Rockland (O&R) service territories.

In the Value Stack Compensation Order, the Commission further stated:

It would be appropriate to consider extending the Community Adder to projects in other utility territories not receiving an MTC or Community Credit, as well as to extend its availability in Central Hudson and O&R. Any such extension would require further Commission consideration of funding source and incentive levels.¹⁴

Accordingly, NYSERDA proposes to administer a Community Adder of \$0.18/Watt DC, consistent with its administration of the existing Community Adder for Central Hudson and O&R, for CDG projects developed in utility territories that have fully exhausted their existing Community Credit or

¹² Case 15-E-0751, *supra*, VDER Transition Order.

¹³ Case 15-E-0751, *supra*, Value Stack Compensation Order.

¹⁴ *Id.* at 30.

Community Adder tranches. The Community Adder will be sized to leverage the project cost savings from consolidated billing, which is assumed to be available for CDG projects by 2021.

On November 1, 2019, in response to the imminent closure of the Community Credit tranche for the NYSEG service territory, NYSERDA filed a petition with the Commission requesting, among other relief, that the Commission authorize up to \$35 million of currently uncommitted NY-Sun funds to support a Community Adder in the utility territories where the existing Community Credits are exhausted.¹⁵ The \$111 million that is requested for a Community Adder in this Petition includes the Community Adder funding requested in the November 1, 2019 Petition. In other words, NYSERDA requests that the Commission authorize a total of \$111 million for the Community Adder, which would be further detailed in a revised NY-Sun Operating Plan.

2. Other Adders

Second, NYSERDA requests that the Commission authorize NYSERDA to use \$19 million of the \$573 million in requested funding for added incentives for projects that meet certain criteria and achieve other State policies and objectives. For example, in June 2018, NYSERDA introduced added incentives for projects sited on a brownfield or landfill and projects utilizing a parking or rooftop canopy design, as a strategy for balancing land use pressures. NYSERDA proposes to extend these types of additional incentives that are currently offered. In addition, NYSERDA will continue to explore and consider other incentive-based strategies, adopting when appropriate, in order to ensure that an expanded NY-Sun program is both responsive to evolving market conditions and addresses other State policy priorities. In particular, NYSERDA expects to engage interested stakeholders in considering ways to ensure that deployment of solar under the NY-Sun program is done so in a manner that is sensitive and responsive to the need to support the agricultural industry and agricultural land use.

¹⁵ See Case 15-E-0751, In the Matter of the Value of Distributed Energy Resources, NYSERDA Petition for Community Adder Expansion (filed Nov. 1, 2019), at 1.

c. Framework for Solar Energy Equity, Additional Funding, and Potential Benefits

Finally, NYSERDA presents an initial Framework for Solar Energy Equity – an expansion of the NY-Sun Program activities focused on low-to-moderate income (LMI) customers, affordable housing, environmental justice communities, and disadvantaged communities as will be defined at a later date through the process established by the CLCPA. NYSERDA requests that \$135 million be dedicated exclusively to this purpose, complimented by funding from base MW Block incentives as described below, and with acknowledgement that the identification of disadvantaged communities and associated definitions will be subject to implementation of the CLCPA¹⁶. Specifically, the CLCPA prioritizes and stipulates addressing the needs of disadvantaged communities, and ensuring that relevant program activities are responsive to the CLCPA provisions that 40% of the benefits of New York State’s energy investments be targeted to disadvantaged communities, with no less than 35% of the benefits to be received by disadvantaged communities.¹⁷ Given these provisions of the new climate law, NYSERDA anticipates revisiting program design for its Solar Energy Equity Framework, and to modify as appropriate, upon implementation steps related to the CLCPA. In the interim, NYSERDA requests authorization to focus on these critical market segments in order to significantly expand its initiatives that serve these communities and constituencies.

The funding requested for this purpose will supplement and greatly expand upon the existing \$13 million for “projects to help advance participation by low to moderate income customers” that was authorized by the Commission in the April 2014 Order.¹⁸ Although approximately \$8.6 million of these funds, or 66%, remain uncommitted as of September 30, 2019, given the critical need to provide clean energy solutions to individuals and communities most impacted by energy affordability and climate change, NYSERDA requests a significant scale-up of these activities.

¹⁶ See S.6599, A.8429, 2019-2020 Leg., Reg. Sess. (June 18, 2019) (CLCPA).

¹⁷ See Id.

¹⁸ Case 14-M-0094, supra, April 2014 Order.

The majority of the \$135 million being requested will be structured as additional funding for eligible projects that will receive the MW Block “base” incentives for which they are eligible. Based on its initial assessment of market uptake and other policy and regulatory factors, NYSERDA estimates that at least \$65 million in base incentives and Community Adder incentives (described above) would be coupled with the additional funding discussed in this section, resulting in a total of at least \$200 million available to support projects for the benefit of LMI customers, affordable housing, environmental justice communities, and disadvantaged communities. Inclusive of funds remaining from the initial LMI allocation under the original NY-Sun Program,¹⁹ this request represents projected annualized funding commitments of at least \$34 million per year through the end of 2025— an approximately twenty-fold increase in the rate of funding commitments by the Program to date.

This structure — additional funding, such as incentive adders, coupled with base incentive funding — has been utilized for a range of LMI clean energy programs and offers a number of advantages for the NY-Sun Program and the targeted market segments, including: maximizing the total funding for projects that benefit LMI households, affordable housing, environmental justice communities, and disadvantaged communities; leveraging an existing network of NY-Sun contractors and an established process for applying for incentives; and encouraging mass market solar providers to adapt their product offerings to LMI households. Alternatively, potential disadvantages include: the potential for faster-than-expected declines in the MW Block base incentives, which could undercut program objectives; and possible limitations in maximizing the full range of benefits that solar energy has the potential to deliver for disadvantaged communities through the incentive adder mechanism. NYSERDA will address these potential disadvantages through the Program design process. Nevertheless, NYSERDA is confident in its ability to mitigate these potential risks through the program design process, and on balance we recommend that the incentive adder structure is the optimal approach for implementing the Solar Energy Equity Framework.

¹⁹ See Id.

Specific program design mechanisms for additional funding include: incentive adders calculated on a per Watt basis, as is currently used for the NY-Sun Multifamily Affordable Housing Incentive; incentive adders calculated based on a targeted total per Watt incentive, as is currently used for the NY-Sun Affordable Solar Residential Incentive; and additional funding offered to projects through a competitive solicitation (i.e., Request for Proposals), like NYSERDA's Solar for All program.²⁰ As discussed in the "Initial Strategies" section below, NYSERDA will utilize the mechanism and program design best suited to the specific strategy and market sector.

Actual expenditures associated with the Solar Energy Equity Framework will ultimately be determined by the specific program strategies and incentive levels that will be developed based on the strategies discussed below, with adjustments as needed, based on annual market uptake through 2025. Moreover, successful implementation of this framework and full expenditure of the \$135 million in funding being requested depends on the general policy and market assumptions discussed above; the regulatory adjustments identified in this Petition; the overall market conditions for the deployment of solar PV; and the continued efforts of NYSERDA's partners in the public, private, and nonprofit sectors.

As a result of the prioritization and expansion of its program activities described under this section, NYSERDA anticipates that the following categories of benefits will be directly realized and accrue to the individuals and communities prioritized under the Solar Energy Equity Framework: cost savings to LMI households; cost savings to affordable housing providers; jobs and training opportunities; resilience at the building and community level; reduced co-pollutants in environmental justice communities; and opportunities to own and/or directly participate in community energy projects. Benefits are also anticipated to accrue from solar PV projects that do not directly receive funding from the strategies discussed in this section. For example, an LMI resident of a disadvantaged community may choose to subscribe to, and receive cost savings from, a community solar project that does not receive any of the incentive adders under the Solar Energy Equity Framework.

²⁰ See Clean Energy Fund Investment Plan: Low-to Moderate-Income Chapter (revised August 8, 2019) at www.nyserda.ny.gov/About/Funding/Clean-Energy-Fund.

To operationalize the aspects of the Solar Energy Equity Framework as described in this section, NYSERDA requests authorization for the following activities: (1) to continue implementation of program activities under the approved NY-Sun Operating Plan, subject to any necessary or appropriate modifications; and (2) to further develop the initial framework described in this Petition into more detailed program strategies in consultation with stakeholders and in coordination with NYSERDA's other clean energy initiatives. If authorized to carry out these activities, NYSERDA will revise the current NY-Sun Operating Plan as necessary to implement these strategies.

To lay the foundation for the implementation work, below NYSERDA proposes a set of strategies for expanding NY-Sun program activities focused on low-to-moderate income (LMI) customers, and affordable housing, environmental justice communities, and disadvantaged communities. In developing these strategies, NYSERDA has reviewed its current program activities, reviewed related program offerings in other states, and has consulted with a range of stakeholders.

1. Predevelopment and Technical Assistance

NYSERDA proposes to continue supporting community organizations, local governments, housing providers, and other entities to advance solar initiatives in their communities. This strategy will build on the successful NYSERDA Affordable Solar Predevelopment & Technical Assistance Program,²¹ which has funded 21 community initiatives around the state. NYSERDA will leverage the models developed through that program to date. In doing so, NYSERDA will be able to create a pipeline of projects that are eligible for the sector-specific incentive adders or other additional funding mechanisms, and the associated MW Block "base" incentives.

Based on the results of the community initiatives funded to date, stakeholder feedback, and a review of similar programs in other states, NYSERDA plans to make several adjustments to the NY-Sun Program design. These adjustments include support for earlier-stage planning, post-predevelopment

²¹ See Affordable Solar Predevelopment and Technical Assistance Program at www.nyserda.ny.gov/aspta.

support for implementing and scaling effective models, added focus on initiatives serving environmental justice communities, inclusion of resiliency efforts that include energy storage and solar, community-based outreach efforts, and project models that demonstrate cooperation/community ownership models.

2. Community Solar

Community solar presents tremendous potential for LMI households and disadvantaged communities. As part of the expanded NY-Sun program, NYSERDA proposes deploying two complimentary strategies: (1) continued support for a no-cost (or guaranteed savings) community solar option for low income households; and (2) new targeted intervention and support to make the community solar market more broadly accessible to LMI households, affordable housing providers, and facilities serving disadvantaged communities.

i. No-cost/Guaranteed Savings Option for Low Income Households

To address barriers to participation by low income households, NYSERDA launched the “Solar for All” initiative in 2018 to offer no-cost community solar to 10,000 low income households by the end of 2020.²² Through September 30, 2019, approximately 900 program participants have received credits from active community solar projects to offset their utility bill costs, approximately 1,300 additional participants have been assigned to projects awaiting activation, and project capacity has been secured to enroll an additional 4,800 participants. While these initial results are encouraging, achieving greater scale will require continued support from NYSERDA (in the form of incentive adders or other additional funding), significant adjustments to the program design enabled by consolidated billing, and an expanded role for the utilities.

Consolidated billing will increase access to CDG opportunities for low income customers by limiting barriers related to customer credit and billing method, and by improving the overall CDG

²² See Clean Energy Fund Investment Plan: Low-to Moderate-Income Chapter (revised August 8, 2019) at www.nyserdera.ny.gov/About/Funding/Clean-Energy-Fund.

customer experience. However, NYSERDA's review of low income community solar efforts nationwide, as well as NYSERDA's direct experience implementing the Solar for All low income community solar program, suggests that utility-administered enrollment of low income customers in community solar will maximize the benefits received by low income customers from the State's CDG policy and maximize the ability to leverage the funding, as requested in this Petition, for the benefit of LMI customers and environmental justice communities requested in this Petition. NYSERDA notes the promising recent efforts by National Grid, Consolidated Edison, and other utilities to address these opportunities.

A thoughtfully designed program can leverage the consolidated billing mechanism to help overcome the major barriers to low-income customer participation: customer education and trust, high customer enrollment and management costs, a mismatch between the variability/seasonality of CDG credit generation, and the predictability that many low income customers require to manage their energy costs.

NYSERDA believes that key characteristics of a successful program will likely include:

- Customer enrollment and assignment directly by a utility through a simple opt-in or opt-out mechanism;
- Guaranteed savings for low income participants with no penalties for exiting the program
- Full integration with a utility low-income electric bill discount program (going beyond the "Bill Discount Pledge" mechanism);
- Alignment with Community Choice Aggregation rules;
- Outreach partnerships with government agencies and local organizations that directly serve low-income customers;
- Inclusion of community-developed and owned CDG projects that may be located in environmental justice communities and disadvantaged communities; and
- An option for low income customers, including those on level/budget utility billing, to receive predictable and level credit amounts each month.

ii. Support for Inclusive Community Solar Projects

NYSERDA will also develop targeted support, including incentive adders, to make the community solar market more broadly accessible to LMI households, affordable housing providers, and facilities serving disadvantaged communities. This effort would encourage short-term contracts, low termination fees, alternative qualification options for customers with no or low credit scores, and active marketing of these products to LMI customers. The improvements made to the VDER Value Stack in the Commission's Value Stack Compensation Order²³ also create opportunities for affordable housing providers and other facilities serving low-income and environmental justice communities to be "anchor" offtakers for community solar projects. NYSERDA will continue its efforts to develop rigorous methods for evaluating project eligibility based on factors including geographic location of project subscribers.

3. Affordable Housing and LMI Homeowners

NYSERDA proposes to continue offering incentive adders for projects sited on regulated affordable housing properties. Incentives will continue to be available to projects that provide direct cost savings to either building residents or the owners of regulated affordable housing. In setting incentive levels, NYSERDA will prioritize community solar projects on affordable housing that include direct benefits to LMI building residents and community members. NYSERDA will also examine incentive adders for facilities other than affordable housing that provide direct benefits to disadvantaged communities.

NYSERDA also proposes to continue offering incentive adders to LMI homeowners to install rooftop solar and will make program design improvements to encourage increased uptake by both customers and solar installers.

²³ Case 15-E-0751, supra, Value Stack Compensation Order.

4. Solar Paired with Energy Storage

NYSERDA proposes to offer incentives adders for solar PV projects that pair solar PV and energy storage and provide resiliency and/or financial benefits to LMI customers and affordable housing. NYSERDA will also examine incentive adders for facilities other than affordable housing that provide direct benefits to these customers and those residing in disadvantaged communities. Incentive funding for energy storage equipment would be provided in accordance with NYSERDA's approved Energy Storage Market Acceleration Incentives Implementation Plan.²⁴ The proposed additional NY-Sun funds for the paired solar PV component would serve to reduce the cost of integrating these two solutions and maximize on-site resiliency benefits.

5. Solar Deployments that Support the Potential for Solar and Energy Storage to Repower or Replace Electric Generating Peaking Units

NYSERDA proposes to offer incentives adders and technical support to solar deployments that can support the reduction of local pollutants from fossil fuel peaking units which, while operating infrequently during the year, emit significantly higher emissions including local air pollutants. Solar and storage have the ability to hybridize or replace the operation of existing fossil-fueled peaking facilities, by offsetting local energy demand that would have been met by peakers or by time-shifting solar power with energy storage to mitigate the need to operate peakers. Targeted support for these projects is expected to improve grid resiliency and provide significant health and environmental benefits, particularly to environmental justice communities where many peaking units are located. These additional incentives will be designed with input from local stakeholders, utilities, DPS and Department of Environmental Conservation (DEC) staff.

²⁴ See Case 18-E-0130, In the Matter of Energy Storage Deployment Program, Energy Storage Market Acceleration Incentive Implementation Plan (filed March 11, 2019; amended April 25, 2019).

d. Distributed Solar PV and New York Agriculture

As previously discussed, commercial/industrial scale solar projects have emerged as a leading source of the growth in solar development in upstate New York. Under an expanded NY-Sun program, NYSERDA expects this trend to continue. The majority of projects in this market sector are expected to be ground-mounted arrays ranging between 5 MWdc and 7.5 MWdc in size, which occupy approximately 20 – 25 acres of land, typically on rural properties that are leased or sold to the solar developer by the landowner. Notably, this includes properties that are currently used, or could potentially be used for, agricultural production. While NYSERDA expects that the total agricultural acreage utilized for distributed solar projects will remain modest as compared to total farmland in New York State, through its implementation efforts, NYSERDA will act to ensure that negative impacts to farmland and the State's agricultural economy are avoided and minimized, and where they are unavoidable, mitigated.

NYSERDA, working with partner agencies and stakeholders, has already taken multiple actions along these lines and will pursue additional actions under an expanded NY-Sun program. For instance, since 2016, NYSERDA has developed and provided resources to landowners and local governments through its New York State Solar Guidebook.²⁵ The Guidebook contains resources and information focused on agricultural lands, which includes the following:

- A Model Solar Energy Law, which provides local governments with a framework to consider agricultural land use and potential solar development, as well as the use of native and pollinator-friendly vegetation around solar modules;
- Step-by-step guidelines for local governments to use special use permits and site plan regulations to allow large-scale solar installations while protecting farmland;
- Guidance for landowners on solar installations in NYS Agricultural Districts;
- Guidance for landowners considering leasing their property for solar development; and

²⁵ See New York State Solar Guidebook for Local Governments (January 2019), available at www.nyserda.ny.gov/solarguidebook.

- Guidance, model language, and cost estimates for local governments to ensure proper decommissioning and removal of solar PV equipment from properties at the end of the project's useful life;

In addition, in October of 2019, with support from NYSERDA, the New York State Department of Agriculture and Markets (NYSDAM) published revised Guidelines for Agricultural Mitigation for Solar Energy Projects, which apply to the construction, post-construction restoration, monitoring and remediation, and decommissioning of solar energy projects impacting agricultural lands.²⁶ Through the Agricultural Notice of Intent (NOI) process,²⁷ NYSERDA helps facilitate NYSDAM's review of solar projects that potentially impact farmland and, as necessary, works with NYSDAM and solar developers to implement appropriate mitigation.

In implementing an expanded NY-Sun program as proposed in this Petition, NYSERDA will continue to consider and employ strategies to further encourage the positive impact of solar development on agriculture and New York's rural economy, and will work closely with impacted and interested stakeholders, along with its government partners in doing so.

e. Consumer Education

NYSERDA proposes to use up to \$3 million of the requested funding for the purpose of educating solar customers and market participants. In particular, the increase in community solar deployment that is projected through 2025 will require the participation of a minimum of 100,000 households and businesses. NYSERDA can play an effective and beneficial role in educating potential community solar customers and providing credibility to an emerging market and reducing the risk of deceptive sales practices. Furthermore, the expanded goals for benefits to disadvantaged communities,

²⁶ See New York State Department of Agriculture and Markets, Guidelines for Solar Energy Projects – Construction Mitigation for Agricultural Lands (revised Oct. 18, 2019), available at https://agriculture.ny.gov/system/files/documents/2019/10/solar_energy_guidelines.pdf.

²⁷ See N.Y. Agriculture and Markets Law § 305 (2018).

environmental justice communities, and low-to-moderate income households will necessitate focused education and outreach efforts in these communities.

f. Extension of the NY-Sun Initiative

NYSERDA proposes to extend the NY-Sun Initiative through 2025. NYSERDA will make no new program incentive commitments after 2025, but may continue to expend committed program incentives after 2025 for activities such as post-completion performance payments, and may make limited new commitments and expenditures of program implementation and program administration funds after 2025 for the purpose of “close out” activities.

g. Program Implementation

The April 2014 Order authorized \$32.6 million for Program Implementation, which included “technical assistance and field review for quality assurance and quality control.”²⁸ As of September 30, 2019, approximately \$21.4 in uncommitted implementation funds remain. NYSERDA is not requesting new funds for this purpose. In addition to the continued quality assurance and quality control functions of the program, NYSERDA proposes to use the remaining funds to address barriers to the successful implementation of the program as described below.

In administering the NY-Sun Program since 2014, NYSERDA has identified deployment barriers and technical assistance needs for a range of market participants, including solar contractors, State and local government agencies, landowners, and solar customers. NYSERDA proposes to continue developing technical assistance responses to existing and emerging barriers, and, as warranted, support pilot or demonstration efforts to test new approaches. Specific areas of emerging importance include potential land use conflicts between agricultural and solar uses, systematic solutions to interconnection costs, and system resiliency in locations vulnerable to increased flooding or other impacts of climate change.

²⁸ Case 03-E-0188, supra, Order Authorizing Funding and Implementation of the Solar Photovoltaic MW Block Programs (issued and effective April 24, 2014) (April 2014 Order).

h. Program Administration

As of September 30, 2019, \$27 million in uncommitted administrative funds remain. NYSERDA requests that, in addition to these currently uncommitted administrative funds, \$8 million of new funding be available for program administration through the revised program end date of December 31, 2025, as well as for administering post-completion performance payments, reporting, and other “close out” activities beyond 2025.

i. Program Evaluation

Evaluation activities are anticipated to include impact assessments, market characterization, and process evaluation. Impact assessment is used to verify that energy production is meeting expectations, and makes use of system infrastructure and reporting inherent in the program delivery model to keep costs as low as possible. Market characterization studies will document empirical evidence of market transformation and identify any barriers that impede market transformation from occurring as expected. Market characterization may include the analysis of market trends related to business models and analysis of installed costs and balance-of-systems costs, among other things. NYSERDA will also conduct process evaluation activities as warranted to assess installer and customer engagement with the Program over time, including understanding customer satisfaction. Collectively, the evaluation will help position the Program for maximum effectiveness. Evaluation will also inform how NY-Sun is helping address the goals of the CLCPA.

The budget for evaluation will remain unchanged at \$2.5 million and will be more fully developed in an amended NY-Sun Operating Plan, in consultation with DPS Staff. RGGI funds will be used to support evaluation in LIPA service territory. The evaluation funding will support internal NYSERDA staffing requirements and external consultant activities pertaining to evaluation.

II. Regulatory Actions

In addition to the assumptions listed above, three important regulatory changes can significantly increase the Program's probability of success and the cost-effectiveness of solar in New York State: (1) reduced restrictions for remotely-metered DERs; (2) opt-out for Community Choice Aggregation (CCA) customers; and (3) utility-administered community solar enrollment for low income customers. The first two items are discussed immediately below, with the third addressed in more detail in section 1.c.

NYSERDA respectfully requests that the Commission give these recommendations further consideration in the appropriate forum.

a. Reduced Restrictions for Remotely-Metered DERs

NYSERDA observes that, under current regulations, the host and satellite accounts of a remotely metered project must be held by the same entity. This prevents a remotely metered project from having multiple unrelated off-takers. Solar projects are generally most cost-effective when they experience an economy of scale near the 5MWac interconnection limit. However, project developers often have difficulty securing a credit worthy off-taker with a single entity capable of accepting the entire generation output of a project, especially at or near the 5MWac limit. By allowing a remotely-metered DER to service multiple off-takers, regardless of electricity account ownership, remote metering regulations would support economies of scale and a more cost-effective pathway towards the State's solar PV targets.

Similarly, given the current structure of remote net metering regulations, project developers generally must secure a long-term power purchase agreement (PPA) with a specifically named off-taker to secure project financing. However, if a developer would be permitted to interchange off-takers, as is the case with regulations for CDG projects, the difficulty and cost of securing project financing should decrease. Given this, NYSERDA recommends that current restrictions on remotely metered projects be revised in favor of more flexible rules that mirror the treatment of subscribers (demand or non-demand metered) to Community Distributed Generation (CDG) projects. As mentioned, doing so would support

economies of scale, increased adoption, and a more cost-effective pathway towards the State's solar PV and other DER targets.

b. Opt-Out CDG for Community Choice Aggregation Customers

“Opt-Out CDG” as referred to herein is an arrangement where Community Choice Aggregation (CCA) customers are automatically enrolled into CDG projects from which they can choose to opt-out. consolidated billing would enable the allocation of utility bill credits from one or more CDG projects to all or a group of CCA customers. While the Commission has provided a framework for Opt-Out CDG, it has also stated that “the absence of consolidated utility billing may cause confusion for customers who were automatically enrolled in the CDG.”²⁹ NYSERDA agrees that the benefits of Opt-Out CDG will most effectively be realized and understood through a consolidated bill where the customer receives CDG credits and pays the CDG charge on their utility bill, as opposed to a separate and distinct bill for the CDG subscription.

The integration of CDG with CCA has potential to significantly reduce CDG customer acquisition and management costs as well as lower project-level financing costs, all critical aspects of solar PV soft cost reduction strategies. As opposed to individual customer CDG contracts, through a CCA, the local government may elect to offer Opt-Out CDG on behalf of their constituents where a relatively small number of CCA/CDG contracts could cover as many as tens of thousands of individual accounts. Differences in failure-to-pay rates on utility bills versus separate CDG bills may result in lower financing costs for CDG projects under consolidated billing. These factors are likely to keep soft costs to a minimum, could increase the viability of more CDG projects, and lower the CDG subscription price for all participants.

²⁹ Case 14-M-0224, Proceeding on Motion of the Commission to Enable Community Choice Aggregation Program and Case 15-E-0082, Proceeding on Motion of the Commission as to the Policies, Requirements and Conditions for Implementing a Community Net Metering Program, Order Approving Joule Assets' Community Choice Aggregation Program with Modifications (issued and effective March 16, 2018), at 16.

In advance of each billing cycle, the CCA, working with the ESCO and CDG developer, could provide the utility with a list of participating customers that indicates the percentage of CDG credits that should be allocated to each customer. This could result in guaranteed cost savings for participating customers – an issue that local government officials have emphasized is critically important. In addition, because participants in utility low income assistance programs (APPs)³⁰ may only be served with a guaranteed savings product, Opt-Out CDG offers an opportunity to serve these customers while increasing their access to other CCA-related clean energy products and services. In short, Opt-Out CDG has the potential to reduce uncertainty, lower costs, and open a large market for local renewables, all of which directly support State and local clean energy goals.

NY-Sun Program Budget

Given the proposed NY-Sun Program approach described above, NYSERDA offers the following table to provide the current budget status and the additional funding requested herein.

Budget Table, with Commitments as of 09/30/2019. Figures are in \$Millions

	Current Committed/ Expended	Current Uncommitted	Requested Additional	TOTAL
MWB Incentives and Adders	\$769	\$341	\$420	\$1,531
Administration	\$12	\$27	\$7.8	\$46
Implementation	\$11	\$21	\$0	\$33
Customer Education	\$3.5	\$0.0	\$3.0	\$6.5
Solar Energy Equity Framework	\$4.4	\$8.6	\$135	\$148
Evaluation	\$0.2	\$2.2	\$0	\$2.5
NY Cost Recovery Fee	\$2.9	\$16	\$6.8	\$26
TOTAL	\$803	\$417	\$573	\$1,778

³⁰ See Id.

Conclusion

Accordingly, NYSERDA requests that the Commission issue an Order (1) authorizing the allocation to NYSERDA of \$573 million of additional funds for the NY-Sun Program efforts as described herein; and (2) extending the administration of the NY-Sun Program through calendar year 2025, with limited program close-out activities beyond that date as described herein.

November 25, 2019

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Sarah Main", is positioned above the typed name and address.

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