NY-Sun

2016 - 2023 Operating Plan

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Contents

SECTION 1: INTRODUCTION

This NY-Sun Operating Plan (Plan) sets forth the program goals and implementation strategies for the NY-Sun Program under the New York State Renewable Portfolio Standard (RPS). This Plan incorporates the NY-Sun Addendum (August 2014 Addendum) submitted by NYSERDA to the New York State Public Service Commission (Commission) on August 7, 2014.

NY-Sun, a comprehensive initiative established by Governor Andrew M. Cuomo in 2012 to develop a sustainable and subsidy-free solar photovoltaic (PV) industry in New York State, consists of numerous components to be implemented by NYSERDA in collaboration with the New York Power Authority (NYPA) and the Long Island Power Authority (LIPA.) Components of NY-Sun include a PV incentive program, consumer education, Community Solar NY and K-Solar, initiatives to improve access to PV by low to moderate income (LMI) households, training, and reduction of other soft costs of installation. This Operating Plan will describe those components funded through the Customer-Sited Tier (CST), with additional information at a less detailed level for initiatives pertinent to NY-Sun, but funded via other sources (e.g. the Regional Greenhouse Gas Initiative (RGGI)). Further information regarding NY-Sun can be found on the web site, http://ny-sun.ny.gov/.

1.1. BACKGROUND

The Commission issued the April 2014 Order in response to NYSERDA's January 6, 2014 Petition "NY-Sun 2016-2023 Funding Considerations and Other Program Implementation Considerations" (January 2014 Petition), in which NYSERDA requested approval of the MW Block PV incentive program design criteria, as well as the budget for the MW Block program, Consumer Education initiative, and program implementation and administration. In the April 2014 Order, the Commission authorized NYSERDA to allocate funds which will be used to support, implement and administer eligible PV programs currently under the CST during the term 2016 through 2023; approved initial design criteria for the MW Block program; and authorized NYSERDA to use 1.5% (not to exceed $13 million) of program funds for projects to help advance participation by LMI customers.

The MW Block program will be administered by NYSERDA as a single, coordinated statewide program. The program will be offered to customers in all relevant sectors on a standard-offer, first come-first served basis. Funding for customers of the investor-owned utilities who pay into the SBC/RPS will be provided through the CST, while funding for customers receiving power from NYPA (e.g. municipal utilities), or from LIPA for up to 200 kW projects, will be provided by NYSERDA through RGGI. The statewide Program will be managed by NYSERDA with local administration of the program provided on Long Island by Public Service Electric and Gas (PSEG) Long Island, the LIPA System Operator.

Ongoing planning and coordination will be executed for: (a) systematic identification and breaking down of barriers, including those related to LMI households, (b) effective planning and communication with markets, including meeting the financing needs of the industry and participants, (c) effective consumer education, (d) continuous installed cost reduction, including reducing customer acquisition costs through community-based approaches (e.g., through the Community Solar NY and K-Solar initiatives), (e) transition of the Competitive PV program to the MW Block program, and (f) identification and development of opportunities for effective integration with the grid and with REV.

SECTION 2: PROGRAM DESCRIPTIONS

2.1. MW BLOCK PROGRAM DESCRIPTION

The MW Block approach provides certainty and transparency regarding incentive levels, accounts for regional market differences, provides a clear signal to industry that New York intends to ramp down and eliminate cash incentives in a reasonable timeframe, and allows for the elimination of those incentives sooner in regions where the market conditions can support it, based on market penetration, demand, and cost-effectiveness. The ultimate goal of the MW Block Program, in combination with other components of NY-Sun, is to facilitate a self-sustaining PV industry in New York.

NYSERDA has held stakeholder outreach meetings and webinars in support of program development, and has received and considered comments from stakeholders on incentive and block design. The design criteria initially approved by the Commission in the April 2014 Order, as well as incentive and block designs have evolved in response to those comments, and the design presented in this Operating Plan reflect the stakeholder input process and consultation with New York State Department of Public Service (DPS) Staff. This process will continue as other components of NY-Sun are developed. Program staff welcomes input on an ongoing basis and plan to organize approximately two stakeholder meetings per year to provide an additional avenue for market feedback.

The program's goal of a long-term sustained clean energy PV market includes a capacity goal of 3,000 MW to be achieved with the RPS-funded incentives. The MW Block approach allocates MW targets to specific regions of the State and sectors within those regions; breaks those targets into blocks to which incentives are assigned; awards incentives to applications based on the block in effect at the time of application submission; and then moves to the next block and incentive level when a MW block is fully subscribed. Once all of the blocks within a region/sector are fully subscribed, an incentive is no longer offered in that region/sector. The regions established for the statewide program are as follows:

- The region served by Consolidated Edison ("Con Ed");
- The region served by PSEG Long Island as the LIPA System Operator ("Long Island"); and
- The balance of the state ("Upstate").

Sectors established for the program are as follows:

- Residential systems (up to 25kW in nameplate capacity);
- Small non-residential systems (up to 200kW in nameplate capacity); and
- Large non-residential systems (over 200kW up to 2000 kW in nameplate capacity).

Incentives for customers receiving NYPA power (e.g. municipal utilities) will be based on the sector and region in which they are located.

Incentives offered through the MW Block program will be capacity-based for residential and small non-residential systems, and performance-based for large commercial industrial systems. Incentive applications, including those for customers of LIPA and NYPA, will be submitted through a central database managed by NYSERDA. Information required in the application includes the address and electric utility service provider, which will enable NYSERDA to ensure the appropriate funding source (RPS or RGGI) is applied to the incentive payment. As required in the April 2014 Order, NYSERDA will provide

clear reporting to identify the RGGI funds that are used to support the MW Block Program, and to distinguish such funds from RPS funds being used to support the program.

NYSERDA will track the subscription status of MW blocks by region on its website, indicate the date that each block was initiated and closed, and also indicate the incentive level for each block. The market will be in a position to monitor block status, have improved information regarding the likely timing for incentive changes, and know what the next incentive level will be in advance of the change. Each region and system size category will be tracked separately, and regional demand will drive the rate at which each block is subscribed. Applications for residential and small non-residential systems received by NYSERDA after January 1, 2014 but prior to the launch of the MW Block program will be counted toward Block 1 of the relevant region and sector. As the number of MW actually installed from each block will differ from the original allocation due to cancelations or project adjustments after the block is closed, NYSERDA will also track and update the number of MW installed in each block on the web site.

To encourage the installation of PV systems that are cost-effective, and to make PV available to a greater number of customers, NYSERDA will offer other means to stimulate the growth of the industry, such as facilitating access to financing. For example, to the extent that funding is available, customers can access financing for PV through Green Jobs-Green New York[1]. PV developers are encouraged to also explore means for improving financing options through the New York Green Bank[2] in coordination with investors and financial institutions. NYSERDA will also provide consumer education on PV systems and their characteristics, as well as information on the variety of purchase and leasing options in the market. These activities, along with others, are expected to reduce the "soft costs," which are the non-module costs, of PV systems. The program will also include an electric energy efficiency audit as a component of the program and encourage energy efficiency as part of the means to cost-effectively meet the energy needs of households and businesses, including LMI households.

[1] Public Authorities Law, Title 9-A, sections 1890-1899-a, "Green Jobs-Green New York Act of 2009."

[2]Case 13-M-0412, Order Establishing New York Green Bank and Providing Initial Capitalization, issued and effective December 19, 2013

2.1.1. MW Block Incentive Structure

Initial regional MW targets are provided in Table 2-1.

Table 2-1. MW Targets by Region and Sector [a]

Region	Residential (up to 25kW)	Small Non-Residential (up to 200kW)	Commercial-Industrial (greater than 200kW)	Total
Con Ed	302	303	300	905
Upstate	444	451	1,200	2095
Subtotal RPS	**746**	**754**	**1,500**	**3,000**
Long Island	122	54	-	176
Total	**868**	**808**	**1,500**	**3,176**

There are no targets established by sector for customers receiving power from NYPA. MW acquired for NYPA customers will be over and above the targets in this chart and will depend on the demand within each sector.

Residential Small Non-Residential Incentives

Residential incentives are offered at a fixed amount per DC Watt of nameplate capacity, up to 25kW. Non-residential incentives are offered at a fixed amount per DC Watt nameplate capacity for the first 50kW, and at another fixed amount per DC Watt nameplate capacity for each Watt beyond 50kW, up to a total of 200kW. The blended incentive for non-residential systems varies based on capacity.

Commercial-Industrial Incentives

Incentives provided for systems larger than 200kW per meter are provided in four increments: one at time of commercial operation (upon demonstration of meter-data transfer, Investor Owned Utility (IOU) approval of interconnection and field verification); with the remaining three provided over 3 years on a performance basis (measured annual kWh output). In addition to the commercial operation and performance-based incentives described above, the MW Block platform includes options for single-axis or dual axis trackers that provide a higher capacity factor, additional incentives for project installations in IOU-identified strategic locations, and additional incentives for projects that integrate energy storage or comprehensive energy efficiency. Additional innovative strategies will be investigated to integrate PV with REV. Funding for strategic location and integration incentives are offered on a first-come basis until funds are exhausted or IOUs implement PSC approved REV tariffs that supplant these incentives with price signals embedded in electric rates.

The block structure (MW targets and associated incentives) are provided in Tables 2-2 through 2-9.

Table 2-2. Con Ed Residential Block Structure

Block	MW	Incentive/Watt
1	14	$1.00
2	6	$0.90
3	9	$0.80
4	12	$0.70
5	15	$0.60
6	18	$0.50
7	38	$0.40
8	70	$0.30
9	120	$0.20
Total	302	

Table 2-3. Con Ed Small Non-residential Block Structure

Block	MW	Incentive/Watt for first 50kW	Incentive/Watt for each additional Watt up to 200kW total	Average ("Design") Incentive/watt
1	6	$1.00	$0.60	$0.85
2	4	$0.90	$0.55	$0.77
3	6	$0.80	$0.50	$0.69
4	8	$0.70	$0.45	$0.61
5	10	$0.60	$0.40	$0.53
6	15	$0.50	$0.35	$0.44
7	35	$0.40	$0.30	$0.36
8	45	$0.30	$0.25	$0.28
9	73	$0.20	$0.20	$0.20
10	101	$0.15	$0.15	$0.15
Total	303			

Table 2-4. Con Ed Commercial-Industrial Block Structure

Block	MW	Incentive/Watt
1	15	$0.63
2	20	$0.61
3	20	$0.59
4	25	$0.57
5	25	$0.55
6	30	$0.51
7	30	$0.46
8	35	$0.39
9	35	$0.33
10	40	$0.26
11	45	$0.20
12	50	$0.13
13	55	$0.07
Total	425	
Total after assumed 20% attrition*	340	

*15-30% rate of attrition is typical for large renewable energy projects based on reports from other state programs and Competitive PV and Main Tier RPS program history

Table 2-5. Upstate Residential Block Structure

Block	MW	Incentive/Watt
1	40	$1.00
2	15	$0.90
3	19	$0.80
4	22	$0.70
5	24	$0.60
6	31	$0.50
7	70	$0.40
8	75	$0.30
9	148	$0.20
Total	444	

Table 2-6. Upstate Small Non-Residential Block Structure

Block	MW	Incentive/Watt for first 50kW	Incentive/Watt for each additional Watt up to 200kW total	Average ("Design") Incentive/watt
1	35	$1.00	$0.60	$0.85
2	8	$0.90	$0.55	$0.77
3	10	$0.80	$0.50	$0.69
4	12	$0.70	$0.45	$0.61
5	18	$0.60	$0.40	$0.53
6	23	$0.50	$0.35	$0.44
7	28	$0.40	$0.30	$0.36
8	77	$0.30	$0.25	$0.28
9	95	$0.20	$0.20	$0.20
10	145	$0.15	$0.15	$0.15
Total	451			

Table 2-7. Upstate Commercial-Industrial Block Structure

Block	MW	PBI ($/W) Monetary Crediting	PBI ($/W) Volumetric Crediting
1	120	$0.34	$0.40
2	120	$0.28	$0.40
3	130	$0.21	$0.39
4	130	$0.15	$0.39
5	140	$0.11	$0.37
6	140	$0.06	$0.35
7	150	$0.05	$0.33
8	150	$0.04	$0.28
9	160	$0.02	$0.22
10	170	$0.01	$0.16
11	180	$0.01	$0.09
Total	1,590		
Total after 20% attrition*	1,272		

*15-30% rate of attrition is typical for large renewable energy projects based on data from other state programs and Competitive PV and Main Tier RPS program history

The incentive and block structures for Long Island are included below to provide a more complete picture of the statewide program.

Table 2-8. Long Island Residential Block Structure

Block	MW	Incentive/watt
1	37	$0.50
2	15	$0.40
3	20	$0.30
4	50	$0.20
Total	122	

T**able 2-9. Long Island Small Non-Residential Block Structure**

Block	MW	Incentive/Watt for first 50kW	Incentive/Watt for each additional Watt up to 200kW total	Average ("Design") Incentive/watt
1	9	$0.50	$0.50	$0.50
2	6	$0.45	$0.43	$0.45
3	7	$0.40	$0.36	$0.40
4	9	$0.35	$0.30	$0.35
5	15	$0.25	$0.23	$0.25
6	8	$0.15	$0.15	$0.15
Total	54			

As noted above, customers receiving NYPA power (e.g. from municipal utilities) will be eligible, subject to availability of funds, to receive the incentive associated with their sector and the region in which they are located. Because a realistic allocation of incentives among NYPA residential, small non-residential and large non-residential customers would be difficult to determine based on a lack of previous participation in this market, MW goals have not been established in a block structure for those funds. Instead, NYPA customers will be served on a first-come, first-served basis across all regions and sectors. The MW associated with a project will be counted toward the appropriate MW block, based on sector and region, but the incentives will be paid with RGGI funds. As a result, any RPS or RGGI funds remaining uncommitted in a block after the block has been fully subscribed based on MW will be used in a later block, as described below in "REVISIONS TO THE BLOCK STRUCTURE."

2.1.2. Revisions to the Block Structure

NYSERDA will monitor market conditions and MW Block subscription and as allowed by the April 2014 Order, will make adjustments to the MW block design, if necessary. Because limited data currently exists regarding demand for some sectors, the initial allocation of funds may or may not prove most effective and NYSERDA may re-allocate funds between regions or sectors if warranted. If adjustments are needed, such adjustments will be made in consultation with DPS Staff and stakeholders, and will be designed in a manner that enables the overall goal of a sustained PV market and aggregate MW goal achievement.

In addition to consultation, notice will be provided to stakeholders in advance of any planned changes. A number of conditions may precipitate adjustments to the MW block design, including but not limited to the examples below.

- Where applicable, the program design is intended to offer a set incentive through a larger MW block over a longer period of time following the planned reduction or loss of the federal tax credits in 2017. If the demand for incentives is significantly faster or slower than anticipated, resulting in a misalignment of the projected larger 2017 blocks, NYSERDA may, in consultation with DPS

Staff, may make adjustments to achieve realignment while still accomplishing the overall MW goal.

- If there is a revision to federal law regarding the tax credits, meaning the rate at which the credits are eliminated, NYSERDA may make adjustments in the blocks to better reflect the revisions.
- Small non-residential systems are eligible for incentives on a sliding scale based on the size of the system. The budget must be established for each of these each blocks, and the total of all blocks cannot exceed the program incentive budget. As described above, a conservative incentive/Watt within each block was used as the "design" incentive for purpose of calculating the block budget. If the actual average incentive for a block is larger than estimated, the budget for that block will be exceeded. While project cancellations may provide adequate funding to make up small differences in budget, if NYSERDA sees that a trend is developing that results in actual commitments exceeding budget by more than 10% (the anticipated cancellation rate), NYSERDA may need to adjust the MW in future blocks to ensure the program stays within budget, and to avoid a possible need for a significant early curtailment of the program in the final block. NYSERDA will adjust the design incentive and re-calculate the MW for remaining blocks to fit the budget constraints.
- As stated above, NYPA customers will be served on a first-come, first-served basis across all regions and sectors. The MW associated with a project will be counted toward the appropriate MW block, based on sector and region, but the incentives will be paid with RGGI funds. As a result, any RPS CST or RGGI funds remaining uncommitted in a block after the block has been fully subscribed based on MW will assigned to a future block. While these scenarios will likely occur on an on-going basis, NYSERDA will minimize the number of block adjustments made and will notify stakeholders when reprogramming has occurred and when future block sizes have been adjusted as a result.

It is possible that within a region or sector, applications may stall after a period of time. In that situation, interventions other than, or in addition to, incentives may be needed to increase market activity. Under these circumstances, NYSERDA would approach the issue in a holistic manner, gathering market intelligence, consulting with stakeholders, and developing a comprehensive approach to overcoming existing barriers, which may or may not include adjustments to the MW block structure.

NYSERDA will share information with all stakeholders regarding program progress and market conditions by making data and analysis publically available on an on-going basis. In this way, all stakeholders can monitor the market and assess changes in market activity. NYSERDA staff will conduct a program review, in consultation with DPS Staff and with input from stakeholders, in mid-late 2017 to assess program progress and assess trends, needs and opportunities given conditions at that time. (This will be in addition to planned twice yearly stakeholder meetings.) The review will also consider the potential impact of regulatory or other changes and initiatives related to Commission Case 14-M-0101, reforming the Energy Vision (REV). NYSERDA will strive to minimize program and market disruption.

2.1.3. MW Block Program Participation Criteria

2.1.3.1.Residential and Small Commercial Incentive Program Participation Criteria

Systems must meet the following criteria:

- All system components must meet applicable UL, IEEE and Commission standards;

- New or existing homes and buildings are eligible for incentives;
- 5-year system warranties will be required;
- Each PV system must have the ability to record system production in kWh. The contractor has the option of providing this information from a hard wired PV production meter, on-line monitoring system, or inverter display recorded production.

As the quality of the installation is important to consumer safety and system performance, NYSERDA requires that installers meet one of three installer certification options:

- North American Board of Certified Energy Practitioners (NABCEP) entry-level qualification, followed by certification;
- Journeymen Electrician, with documented International Brotherhood of Electrical Workers (IBEW)-National Electrical Contractors Association (NECA) PV training and experience, such as that provided by the National Joint Apprenticeship and Technical Committee (NJATC) apprenticeship program; or
- Underwriters Laboratories (UL) PV System Installer certification.

Additional certification paths may become available, and if so, will be identified on NYSERDA's website. Installers must describe their experience and provide references. Additionally, the local authority having jurisdiction may have requirements, such as the services of a Master Electrician. Installers and installations must meet all local requirements, including those of the utility service provider.

2.1.3.2. Commercial and Industrial Incentive Program Participation Requirements

Eligible PV projects must have a capacity greater than 200 kW and be grid-connected, end-use applications. PV projects must be connected on the customer's side of the electric meter, and the electricity generated offsets the customer's grid-supplied (by investor-owned or public utility) electricity usage in accordance with net metering laws, regulations and tariffs that are current at that time. Incentive Applications are limited to one host meter per application. Only Participating Contractors can submit applications for incentive funding.

Systems must also meet the following criteria:

- For all installations, the electrical output must be generated by new electric generation equipment that is electrically connected to the distribution grid after the date of the NYSERDA approved Incentive Application.
- The equipment must be new to the host site and must be newly-manufactured.
- All PV modules must be certified as meeting all applicable standards of the Institute of Electrical and Electronics Engineers (IEEE) and Underwriter's Laboratory (UL) 1703.
- All inverters must be certified as meeting all applicable standards of IEEE and UL, found on an approved list by the applicable IOU, and must be listed on the New York State Public Service Commission's certified equipment listings.
- The Participating Contractor must provide, install, and maintain an internet enabled electric meter that displays instantaneous AC power and cumulative total AC energy production and, at a minimum, can record cumulative total AC energy production of the PV system on an hourly and

time-stamped basis, store the hourly readings for at least 7 days, and transmit recorded readings once per day to a NYSERDA designated Data Agent.

The NY-Sun Commercial and Industrial Incentive Program requires that prospective Contractors register with the Program before submitting incentive applications. To become a Participating Contractor in the NY-Sun Commercial-Industrial Program, prospective applicants must complete a PV Installer/Contractor Application Form in which they agree to abide by the terms and conditions of the NY-Sun Incentive Program Participation Agreement. These documents are available on the NY-Sun website http://ny-sun.ny.gov/For-Installers/Forms-Manuals-Tools. Applicants must also provide the following credentials:

- Complete the PV Installation Experience section of the Application Form detailing three commercial-scale projects that entered into commercial operation in the past three years that, in aggregate, sum to at least 500 kW. These projects must represent verifiable references for specific projects and be accompanied by a brief description of the systems installed and the applicant's role in the project.

  OR

- Indicate that your organization has successfully completed a PV project under any of the prior Competitive PV PONs that has been reporting data to the NYSERDA DG Integrated Data System website for at least three months.
  See: http://chp.nyserda.ny.gov/facilities/index.cfm?Filter=Solar

Participating Contractors are responsible for preparing and submitting all required PV Incentive Application documentation to NYSERDA. Incentives are paid directly to the Participating Contractor that submits the Incentive Application or to the site host customer. The Participating Contractor is required to disclose the full amount of the NYSERDA incentive to the end-use customer.

2.1.4. Quality Assurance/Quality Control (QA/QC)

The program is designed to ensure that customers receive properly installed, reliable solar photovoltaic systems that produce the expected amount of energy. Design reviews are performed at time of application to ensure good design practices and Program compliance.

To facilitate QA/QC and customer participation, NYSERDA will maintain a contract to support annual costs and fees associated with the use and maintenance of the Program Database used by program staff, installers and QA/QC contractors to review applications and status of installations. Services also include use and maintenance of a web-based tool that can be used by contractors and consumers to evaluate current market costs and benefits of PV and other related costs, and to estimate expected system output taking into account equipment, shading, and orientation losses, etc.

For Residential and Small Non-Residential projects, field inspections are performed for the first three systems installed by new installers with limited program experience, and 15% - 30% random inspections are scheduled for projects completed by experienced installers as determined by NYSERDA based on installer quality performance. Customers will also be able to request inspections from NYSERDA. Competitively-selected third party technical experts, under contract with NYSERDA, will perform such reviews and inspections with detailed guidance from NYSERDA, and may provide technical assistance as the need arises. Each PV system must have the ability to record system production in kWh, and the recorded production output must be provided to NYSERDA. The contractor has the option of providing this

information from either a hard wired PV production meter, on line monitoring system, inverter display recorded production or other approved method.

For Commercial Industrial projects, confirmation that projects are complete and operational (entered commercial operation) is based on all the following criteria: a) project is providing PV output of meter data to the website specified by NYSERDA; b) inspection report verifying system size, operational status, and conformation with National Electric Code that has been conducted by either a NYSERDA approved contractor or by a licensed professional engineer (PE); c) a copy of IOU communication providing approval (permission to operate or PTO) for the photovoltaic system at the site address; and d) documentation that the energy assessment report has been provided to the customer. Each PV system must have the ability to record system production in kWh based on meters meeting program specifications, and the recorded production output must be provided to NYSERDA for at least the incentive performance period.

SECTION 3: LOW TO MODERATE INCOME CUSTOMER ACCESS

3.1. LOW-TO-MODERATE INCOME (LMI) CUSTOMER ACCESS

The primary goal of NYSERDA's LMI Solar Access efforts is to make solar energy's benefits available for low-and-moderate income New Yorkers as part of the sustainable, self-supporting solar market envisioned by NY-Sun. Through continued engagement with the participants in the LMI Solar Working Group and other stakeholders, NYSERDA has identified a range of market barriers. NYSERDA will utilize the $13 million allocated in the NY-Sun Order to initiate strategies to address these barriers, which will be further advanced through funding anticipated in the Clean Energy Fund.

3.1.1. Market Assessment

NYSERDA has drawn on its experience serving LMI customers and the input of the LMI Solar Working Group, as well as other LMI stakeholders engaged through the CEF process, to segment the LMI market for solar. Low-income homeowners, moderate income homeowners, renters, and multifamily residents face a spectrum of different barriers, level of current access to solar, and opportunities for program intervention. Differences are also found across geographic areas and based on whether a residence is owned by a governmental housing agency or affordable housing provider. Finally, multiple stakeholders noted that improved access to solar for non-residential customers; such as houses of worship, community facilities, and small businesses, could benefit LMI communities more widely.

NYSERDA has also conducted an analysis of NY-Sun and its predecessor programs to assess the current level of access to solar for LMI customers. This analysis found that 15% of residential solar installations through January 2015 were located in LMI neighborhoods (defined as census block groups with a median household income below 80% of the higher of the county or state median income). While this analysis is limited by the unavailability of household-level income data, it suggests that many LMI neighborhoods are currently being served by NY-Sun, but at lower levels of market penetration than higher income areas.

This is further suggested by an analysis of the Green Jobs Green NY loan program. From August 2014, when GJGNY loans became available for solar, through January 2015, 21% of solar loans were issued to LMI customers. As of April 1, 2015, this loan product will only be available for LMI customers.

3.1.2. Integration with Energy Efficiency

In developing programmatic approaches for LMI Solar Access, NYSERDA has drawn from its experience implementing LMI energy efficiency programs. Projects receiving funding through NYSERDA LMI Solar programs will be required to meet electrical efficiency standards in order to prioritize lowest cost measures and avoid over sizing of PV systems. LMI Solar program approaches will be coordinated with LMI efficiency program approaches, wherever possible utilizing common income verification, applications, and outreach channels. Likewise, wherever feasible NYSERDA will coordinate its LMI Solar strategies with workforce development programming.

3.1.3. Initial Program Strategies

As noted above, the $13 million allocated for LMI Solar Access in the NY-Sun Order will be used to initiate strategies to address LMI solar barriers, which will be further advanced through funding anticipated in the Clean Energy Fund. Initial program strategies will address the LMI market segments that represent an immediate opportunity; including low and moderate income homeowners, new construction of

affordable housing, and affordable housing undergoing rehabilitation and/or financial repositioning. The strategies NYSERDA will design and implement are described below.

3.1.3.1. Additional financial incentives for PV projects receiving funding through the NY-Sun Residential Megawatt Block.

Incentives for eligible projects will be administered through the NY-Sun incentive process. Eligibility will be limited to LMI residential projects with verified household incomes that fall below either 80% of Area Median Income (AMI) or 80% of State Median Income (SMI). Program rules will require electrical efficiency measures and limit the total system size eligible for additional incentives, in order to avoid incentivizing over sizing of PV systems. Program rules will also require that LMI customers receive direct financial benefits as a result of the additional incentives. Additional incentive levels will be tied to the applicable Megawatt Block level. The impact and cost of the additional incentives will be evaluated every six months by NYSERDA. NYSERDA will continue to work with DPS and stakeholders on the final details.

3.1.3.2.Support for financing programs or products serving LMI solar customers.

The LMI Solar Working Group members identified access to capital as among the most important barriers to solar for LMI customers. Green Jobs Green NY solar financing is currently serving LMI customers and NYSERDA believes it will continue to play a role in overcoming this barrier. In addition, NYSERDA is currently working with the NY Green Bank and affordable housing finance providers to identify financing gaps that could be addressed by a targeted state-supported financing program. As an example of this kind of program, the Connecticut Green Bank has developed a PACE-secured solar financing program for municipal affordable housing agencies. NYSERDA may utilize some of the funds allocated in the NY-Sun Order to provide seed funding for this type of financing product.

3.1.3.3.LMI customer outreach and aggregation.

NYSERDA will work with its existing network of outreach partners, as well as new partners engaged through Community Solar NY, K-Solar, and the NY Community Partnership, to engage LMI customers and aggregate demand for solar. A range of aggregation strategies will be employed, including adapting the "Solarize" community-based aggregation model to be more inclusive of LMI customers, and engaging owners of affordable housing portfolios. These strategies reduce the soft costs associated with solar, making it more affordable for LMI customers.

3.1.3.4.Technical assistance for local governments and affordable housing providers.

Through the LMI Solar Working Group process, NYSERDA identified significant gaps in knowledge and technical capacity on the part of local governments, affordable housing providers, and other providers of services to LMI households that could reduce the effectiveness of other measures to increase LMI Solar access if not addressed. Engaging these providers will also present opportunities to leverage funding for roof repairs and other structural work, identified as an important barrier to LMI solar access. NYSERDA will develop resources to assist these key actors in accessing solar for their residents and clients, and will actively assist in their implementation.

3.1.3.5.Community Net Metering (CNM), Community Choice Aggregation (CCA) and other future strategies.

CNM and CCA, as currently under consideration by the Commission, could produce substantial benefits for LMI customers. CNM can remove multiple barriers to LMI solar access identified by the LMI Solar Working Group, including the high proportion of LMI customers who rent their homes, have homes with roof or structural deficiencies, or simply lack access to sufficient capital for an onsite solar installation. Likewise, CCA and other regulatory changes adopted through the Reforming the Energy Vision process may create significant new opportunities for LMI customers to access the benefits of solar energy. As these processes advance, NYSERDA will adapt its LMI Solar strategies to maximize these new opportunities.

SECTION 4: NY-SUN BUDGET AND PERFORMANCE EXPECTATIONS

Inherent in the design of the MW Block structure, and as acknowledged in the April 2014 Order, and described in the January 2014 Petition, is the structure to provide a reduced incentive glide path, through participation paths and program design to achieve goals on-budget, based on the pace of market activity unbounded by annual budgets.[3] This Operating Plan reflects funding for the MW Block structure beginning January 1, 2016 through 2023, without annual budget constraints.

As required in the April 2014 Order, the MW Block program must maintain the requirement for achieving geographic balance for Independent System Operator zones G-H-I-J.[4] NYSERDA has developed its incentives and MW Blocks to meet this geographic balance target of at least $25 million per year in incentives spent in the Con Ed region, and $5 million in NYISO zones G & H. Budget allocations for the specific program elements are outlined in Table 3-20, and include budgets for 2016 through 2023. Program incentives by region are provided in Table 3-21. Table 3-3 presents expected energy production by region. In addition to the program budget, the Order authorized $38.7 million for program administration, $2.5 million for evaluation, and $19.3 million for the State cost recovery fee (CRF).

The tables below do not include the RGGI funds allocated by NYSERDA for performance expectations associated with customers served by PSEG Long Island ($60 million for residential and small non-residential systems) and NYPA ($20 million for residential, small non-residential and commercial-industrial projects.)

[3] Order Authorizing the Expansion of the Solar Photovoltaic and Geographic Balance Programs from 2012 through 2015 and the Reallocation of Main-Tier Unencumbered Funds, issued April 24, 2012

[4] April 2014 Order page 20

Table 4-1. NY-Sun Program Budget ($ millions)

Program[a] Budget Element	Budget
Incentives – residential and small non-residential[b]	$425.5
Incentives – commercial-industrial[c]	$425.5
LMI Customer Access	$13
Consumer Education	$3.5
Implementation and Quality Assurance	$32.6
Total	**$900.1**

[a] "Program" funds as defined in the April 2014 Order only included incentive funds.[5] As presented in this table and NYSERDA's January 2014 Petition[6] , Program budget elements also include separately approved funding for consumer education and program implementation.
[b] This Table includes budgets for years 2016-2023 as described above. The budget for the MW Block program may increase over time due to disencumbrance and reprogramming of CST Solar PV Program funds from previous years.
[c] This Table includes budgets for years 2016-2023 as described above. The budget for the MW Block Commercial-Industrial will be adjusted based on disencumbered budgets from Competitive contracts that have been adjusted based on system size revisions or underperformance, or been canceled - accounted for as unspent and disencumbered funds; and may increase over time due to disencumbrance of CST Competitive Bid PV Program funds from previous years.

Table 4-2. Initial Allocation of NY-Sun Program Incentive Budget ($ millions)[a]

Region	Residential	Small Non-Residential	Commercial-Industrial	Total
Con Ed	$106.375	$106.375	$123.33	$336.08
Upstate	$106.375	$106.375	$302.170	$514.92
Total	$212.75	$212.75	$425.50	$851.00

Table 4-3. NY-Sun Program Expectations

Region - Sector	Capacity in MW Encumbered by 12/31/2023	Total Annual Generation in MWh Encumbered by 12/31/2023
Con Ed Residential	302	354,500
Con Ed Small Non-Residential	303	355,674
Con Ed Commercial-Industrial	300	352,393
Upstate Residential	444	521,185

[5] April 2014 Order, page 6

[6] January 2014 Petition, pages 3-5

Upstate Small Non-Residential	451	529,402
Upstate Commercial-Industrial	1,200	1,409,572
Total	**3,000**	**3,522,726**

It is anticipated that in order to meet program cash flow needs, including those of the Consumer Education initiative described above, NYSERDA will need to borrow from existing, unencumbered RPS or other program sources. Under separate cover, NYSERDA will submit a compliance filing, after consultation with DPS Staff, describing the proposed transactions.

SECTION 5: PROGRAM ADMINISTRATION

Program administration costs include salary and fringe benefit costs for NYSERDA staff involved in managing programs, allocable salary and fringe benefit costs for administrative support staff, direct program management expenses (travel and other costs), QA/QC, and allocable overhead administrative, facility and equipment expenses.

NYSERDA will to manage within the administration budget, optimize administration of the programs to the best of its ability, and keep DPS Staff informed of actual costs over time. In accordance with the April 2, 2010 Order, NYSERDA will bring any concerns that arise to the Commission if it appears that an adjustment to the approved budgets is warranted. NYSERDA understands that an overall examination of administrative costs, including QA/QC, and the CRF, will be addressed as part of ongoing program review.

SECTION 6: EVALUATION

It is anticipated that Impact, Market and Process evaluation components will be necessary to support optimization of the RPS program through the 2023 authorized funding period. Given the long term funding authorization and the desire to be responsive and flexible to evolving needs, this section outlines likely evaluation activities at a high level, while purposefully leaving flexibility for future discussion between NYSERDA and DPS staffs to enumerate the specific direction and study plans.

6.1.1. IMPACT EVALUATION

Impact evaluations are expected to: verify actual production of installed PV systems; investigate reasons for differences, if any, in actual vs. projected production; and examine persistence of system production and performance over time. Impact evaluation will deploy a sampling approach to cost-effectively address the population and potentially various segments or types of installed projects. The specific solar PV impact evaluation objectives, approaches and timelines will be further defined through discussions between NYSERDA and DPS staff.

6.1.2. MARKET AND PROCESS EVALUATION

This area of evaluation will assess important market indicators over time to understand the impact of the program and to help position the program for maximum effectiveness. Market and Process evaluation will likely be applied in the solar PV area to understand indicators such as system cost, evolution of business models, and installer and customer satisfaction over time. The details of this potential evaluation area will also be determined through further discussion between NYSERDA and DPS staff.

6.1.3. EVALUATION BUDGET

The total budget authorized for evaluation of the NY-Sun Program is $2.5 million from 2016 through 2023. This aggregate budget, along with remaining funds from previous RPS evaluation allocations, will be managed over the duration of the Program in consultation with DPS staff to deliver the above referenced studies and other studies as may be needed. The evaluation funding will support internal NYSERDA staffing requirements and external consultant activities pertaining to evaluation.