NEW YORK STATE OF OPPORTUNITY. | NY Green Bank A Division of NYSERDA

NY Green Bank

Metrics, Reporting & Evaluation

Quarterly Report No. 18

(Through December 31, 2018)

Case 13-M-0412

February 14, 2019

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1 Performance at a Glance – As of December 31, 2018

Stimulating New Clean Energy Proposals in the State	NY Green Bank ("**NYGB**") has received over **$3.1 billion** in investment proposals since inception.
Strong Active Pipeline	The Active Pipeline of potential investments proceeding to close is **$574.0 million**.[1]
Driving Material Clean Energy Investments Across NYS	NYGB's investments support clean energy projects with a total project cost of **between $1.51 and $1.75 billion**[2] in aggregate, based on Overall Investments to Date of **$637.6 million**.
Mobilizing Capital	NYGB's investment portfolio represents an expected mobilization ratio of Total Project Costs to NYGB funds currently averaging **2.6:1**,[3] which will be realized as planned clean energy projects are successfully implemented by NYGB's clients and counterparties. Over 10 years, assuming periodic reinvestment in comparable transactions, the estimated **8:1** mobilization ratio remains achievable.
Revenue Growth - Maintaining Self-Sufficiency	Continued revenue growth – **$51.8 million** in revenues has been generated since NYGB's inception. NYGB continues to maintain self-sufficiency through the generation of annual net income.
Contributing to CEF, REV, CES and Other State Targets	NYGB's investments to date drive estimated gross lifetime GHG reductions of **between 8.3 and 10.3 million metric tons**[2], equivalent to removing **between 78,700 and 97,700 cars** from the road for a period of **24 years**.

[1] Note that at any time, the value of the Active Pipeline is separate from the value of the investment portfolio. So, for example, as of December 31, 2018, the $574.0 million in Active Pipeline does not include the $637.6 million in closed transactions that comprises NYGB's Overall Investments to Date.

[2] NYGB monitors its counterparties' clean energy project installations throughout the duration of each investment through the receipt and review of periodic reports. Based on information received, NYGB continually manages the actual and expected energy and environmental benefits across its portfolio. As new information becomes available informing NYGB of NYS market uptake of clean energy projects, NYGB may correspondingly adjust (up or down) the overall portfolio's high and low estimated Total Project Costs and energy and environmental metrics (identified at closing of each investment, working with the relevant clients and counterparties and reflected in Transaction Profiles). This constant monitoring and refinement of expected outcomes improves the accuracy of NYGB's portfolio-level estimation of impact benefits as it works towards meeting the CEF objectives to support the State's clean energy goals. Given such periodic adjustments, the aggregate estimated benefits reported in Quarterly Reports are the most up-to-date estimates (and so no longer will reflect the sum of the low and high estimated benefits specified in the Transaction Profiles at the time of each transaction close).

[3] Given the range of Total Project Costs that NYGB investments mobilize, the Mobilization Ratio also represents a range, currently of 2.4:1 to 2.7:1. Mobilization is further discussed in Section 4.2.

2 Introduction

This Quarterly Report ("**Report**") is filed by NYGB with the New York State Public Service Commission (the "**Commission**") pursuant to the Metrics, Reporting & Evaluation Plan developed in consultation with the New York State Department of Public Service ("**DPS**") and filed with the Commission[4] (the "**Metrics Plan**").

Defined terms used in the text of this Report but not separately described have the meanings respectively given to them in the Metrics Plan.

3 Business Update

3.1 Overview

NYGB's investment activities fall into two broad categories, relating to:

(a) Transactions that have closed, which collectively comprise NYGB's investments; and

(b) Transactions that are in process but not yet closed, which collectively comprise NYGB's pipeline.

Each proposed NYGB investment is categorized by the stage it has reached in NYGB's internal credit underwriting and transaction execution processes.

NYGB closed **three new investments** during the quarter ending December 31, 2018, adding **$57.5 million** to NYGB's investment portfolio. These transactions are discussed in Section 3.2.

NYGB's overall transaction status and Active Pipeline are summarized in Figure 1,[5] showing that since inception through December 31, 2018:

(a) Over **$3.1 billion** of proposals have been received and evaluated by NYGB's Scoring Committee;

(b) **$2.9 billion** of proposals have passed Scoring Committee evaluation – representing potential investments that meet NYGB's mandate and proposal evaluation criteria;

(c) **$1.3 billion** of proposals have received Greenlight Committee recommendation for advancement;

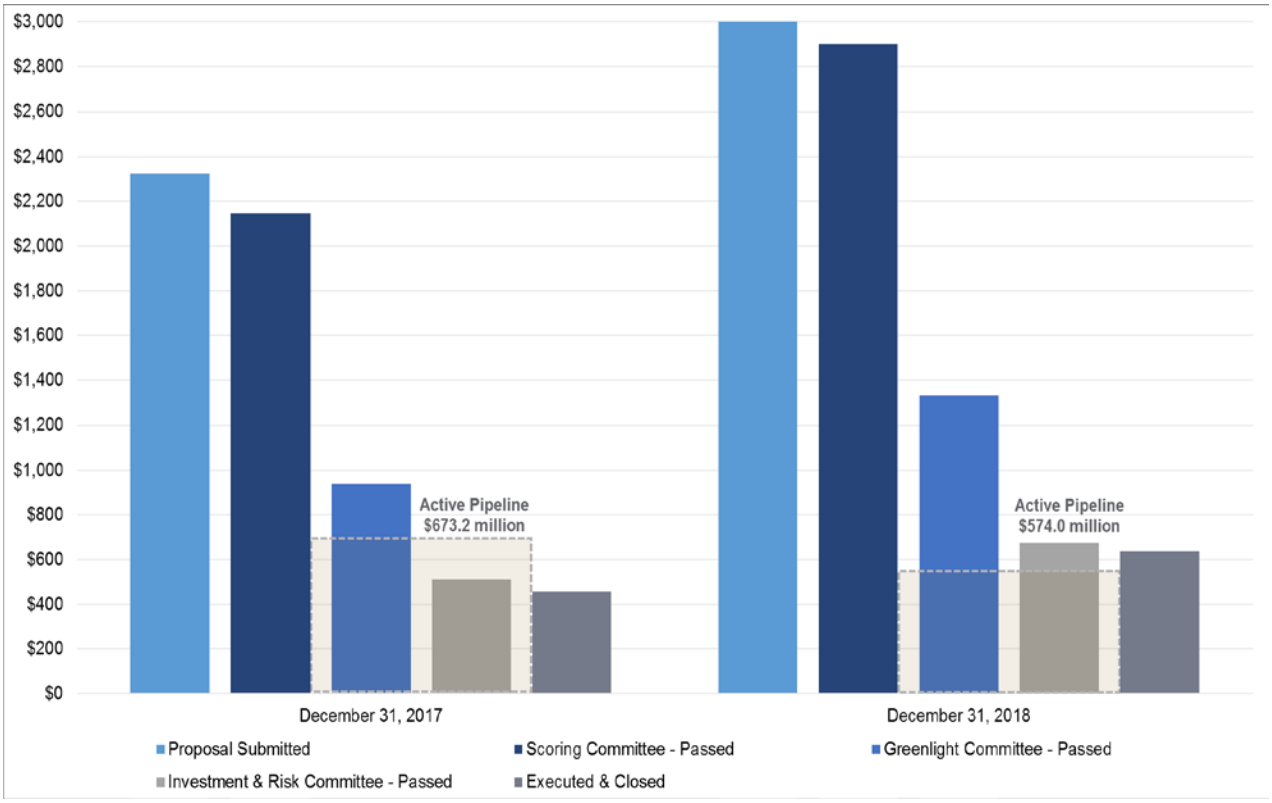
(d) **$675.0 million** of proposals have been vetted by the Investment & Risk Committee ("**IRC**") and approved by NYSERDA's President & CEO; and

(e) **$637.6 million** of transactions have been closed – comprising NYGB's Overall Investments to Date - mobilizing public and private investments to support in the range of **$1.51 to $1.75 billion** in Total Project Costs for clean energy deployment in the State.

Also, as shown in Figure 1, NYGB currently has an Active Pipeline of **$574.0 million**.

[4] Case 13-M-0412, "NY Green Bank – Metrics, Reporting & Evaluation Plan", Version 3.0, dated June 20, 2016.
[5] Note that all these amounts change over time as proposals and transactions evolve.

Figure 1. Transaction Status & Active Pipeline ($ Millions): Year-on-Year Review



3.2 Investment Portfolio

3.2.1 Highlights

In the quarter ended December 31, 2018, NYGB closed three transactions, respectively sponsored by Delaware River Solar, Cypress Creek Renewables, and BQ Energy. Each transaction, as part of NYGB's portfolio, contributes to the primary CEF outcomes of GHG emissions reductions, customer bill savings, energy efficiency, clean energy generation and mobilization of private sector capital.[6] In turn, the CEF objectives support the State's aggressive clean energy targets, including under New York's Green New Deal[7] which mandates a significant increase in the State's Clean Energy Standard ("**CES**") with a goal of 70.0% energy generation from renewable sources by 2030 and carbon-free electricity by 2040.[8]

3.2.2 New Investments

BQ Energy (Steel Sun) – Driving Standardization in the New York Solar Market

- *Reduces GHG emissions by up to 116,700 metric tons over the 25-year life of the underlying assets*

[6] As set out in the CEF Order (Cases 14-M-0094 et al.) issued and effective on January 21, 2016, page 40.
[7] Announced by Governor Andrew M. Cuomo in the 2019 State of the State. See www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/2019StateoftheStateBook.pdf
[8] New York's Green New Deal includes certain critical components, including: (a) quadrupling New York's offshore wind target to 9,000 MW by 2035 (up from 2,400 MW by 2030); (b) doubling distributed solar deployment to 6,000 MW by 2025 (up from 3,000 MW by 2023); (c) deploying 3,000 MW of energy storage by 2030; (d) more than doubling new large-scale land-based wind and solar resources through the CES; (e) maximizing the contributions and potential of New York's existing renewable resources; (f) expanding and enhancing the Solar For All Program to increase access to affordable and clean energy for low-income, environmental justice and other underserved communities; and (g) initiatives to achieve carbon neutral building stock Statewide, including through the energy efficiency target to reduce energy consumption by 185 trillion BTUs below forecasted energy use in 2025.

- *Generates at least 221,900 MWh of renewable energy over the life of the underlying projects*
- *Increases renewable energy installed generation capacity by at least 8.9 MW*

BQ Energy ("**BQ**") is a Wappingers Falls, New York-based renewable energy project developer specializing in landfill and brownfield site redevelopment. NYGB's $12.5 million construction loan enables BQ to construct an 8.9 MW ground-mounted solar farm (the "**Project**") on a brownfield site in Lackawanna, NY. CIR Electric Construction Corporation will construct the Project under a standardized balance of system contract utilizing top-tier panels, inverters, and racking systems. The Project will generate revenue by selling clean power (or, more specifically, the value of clean power evidenced by net metering credits) to Canisius College.

NYGB's participation in the Project – and in similar past and future developments included in the proposed portfolio arrangement – helps to expand financing opportunities for smaller (i.e., less than 10.0 MW) solar systems by fostering standardization in underwriting (which is the process a lender uses to assess the creditworthiness or risk of a potential borrower) including a streamlined, uniform approach to integrating contractors, structuring contracts, and utilizing standardized equipment.

Delaware River Solar – Supporting Deployment of New York's Community Solar Projects

- *Reduces GHG emissions by up to 1,083,900 metric tons over the 25-year life of the underlying assets*
- *Generates at least 2,060,400 MWh of renewable energy over the life of the underlying projects*
- *Increases renewable energy installed generation capacity by up to 70.0 MW*

Delaware River Solar ("**DRS**") is a solar development company based in Callicoon, NY that finances, builds, and operates community distributed generation ("**Community DG**") projects. DRS engaged NYGB to provide financing for the development of a Community DG portfolio in NYS, through various facilities.

In December 2018, NYGB and DRS closed a third transaction that will provide $25.0 million in construction financing for project costs associated with building up to 70.0 MW of Community DG projects in NYS. This transaction directly responds to the market demands for construction financing to further accelerate the build-out of Community DG projects in the State. This credit facility complements NYGB's existing financings by further contributing to the reduction of transaction soft costs by utilizing a consistent set of lawyers, engineers, and other consultants on a negotiated programmatic basis. The construction facility, together with the $7.0 million interconnection bridge loan closed in April 2018, and the $55.0 million term loan closed in July 2018, will advance the development of DRS's Community DG portfolio in NYS.

NYGB has committed a combined $87.0 million to DRS through the bridge, term, and construction loan facilities. These complementary transactions help to demonstrate the viability of the Community DG model in the State, draw new investors and financial institutions into the marketplace, lowering the cost of capital. Consumers are expected to be ultimate beneficiaries in the form of broader access to lower-cost clean energy generation in the State, with corresponding resiliency, affordability, choice and environmental benefits.

Cypress Creek Renewables – Bridge Loan to Support the Deployment of Community Solar

- *Reduces GHG emissions by up to 2,670,000 metric tons over the 25-year life of the underlying assets*
- *Generates at least 202,900 MWh of renewable energy over the life of the underlying projects*
- *Increases renewable energy installed generation capacity by at least 172.0 MW*

Cypress Creek Renewables ("**CCR**"), a California-based company, finances, builds, and operates Community DG projects. CCR engaged NYGB to provide financing for the development of a Community DG portfolio in New York.

In August 2017, NYGB and CCR closed a bridge loan for up to $11.5 million to finance interconnection deposit payments to NYS utilities, relating to as many as 72 Community DG solar projects in the State. In December 2017, the bridge loan was increased by $13.5 million and extended until December 2019 to finance a portion of the balance of the estimated interconnection upgrade payments. In December 2018, the bridge loan was further

increased by $20.0 million to a $45.0 million facility, and extended until April 2021, to finance interconnection deposit payments and support CCR's development of its NYS solar assets.

This transaction encourages an efficient use of sponsor equity and supports project development efforts in NYS by bridging the period for projects from completion of the Coordinated Electric System Interconnection Review ("**CESIR**") process until project financing arrangements are in place. NYGB's participation creates an easier pathway forward for developers and enables greater, and potentially earlier, deployment of Community DG along with other distributed generation assets throughout the State.

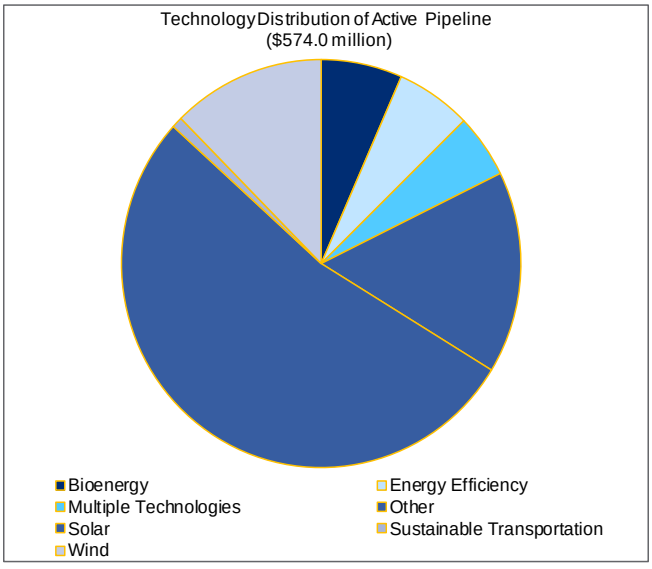
This transaction is expected to generate project and customer performance data, which will help draw new investors and financial institutions into the marketplace in demonstrating that competitive risk-return profiles can be achieved by Community DG enabled business models. This transaction also supports the deployment of Community DG solar projects, which provide those who are not otherwise able to install solar energy generation systems on their property (e.g., homeowners whose rooftops cannot support solar systems, renters and those who cannot afford solar systems, etc.), with voluntary access to clean, low-cost energy, regardless of their home or business location.

Further details on all NYGB's investments are contained in the Transaction Profiles publicly available on NYGB's website at www.greenbank.ny.gov/Investments/Portfolio, and the Transaction Profiles for the investments described in this Section 3.2 are also included in the Schedule to this Report.

3.3 Active Pipeline

Demand for NYGB investment is evidenced by the total value of proposals that have been submitted to NYGB in response to its open solicitations for investment proposals (the "**Investment RFPs**").[9] Through December 31, 2018, proposals requesting over $3.1 billion of NYGB capital have been received. NYGB's Active Pipeline at December 31, 2018 is $574.0 million. Figures 2, 3 and 4 below show the distribution of proposed investments in NYGB's Active Pipeline by technology, end-use customer segment and geography.

Figure 2. Active Pipeline by Technology



[9] Clean Energy Financing Arrangements – Request for Proposals (RFP) No. 1; Construction & Back-Leveraged Financing for Ground-Mounted Solar Generation Systems Targeting Corporate & Industrial End-Users - RFP No. 7; Efficiency & Renewables Financing Arrangements: Building & Property Owners – RFP No. 8; and Financing for CDG Solar Projects Including Projects Paired with Energy Storage – RFP No. 10, all available at www.greenbank.ny.gov/Work-with-Us/Open-Solicitations.

Figure 3. Active Pipeline by End-Use Customer Segment

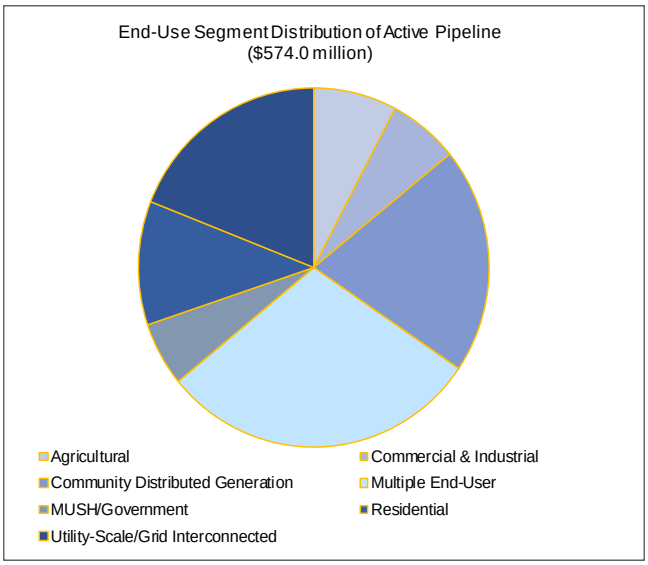
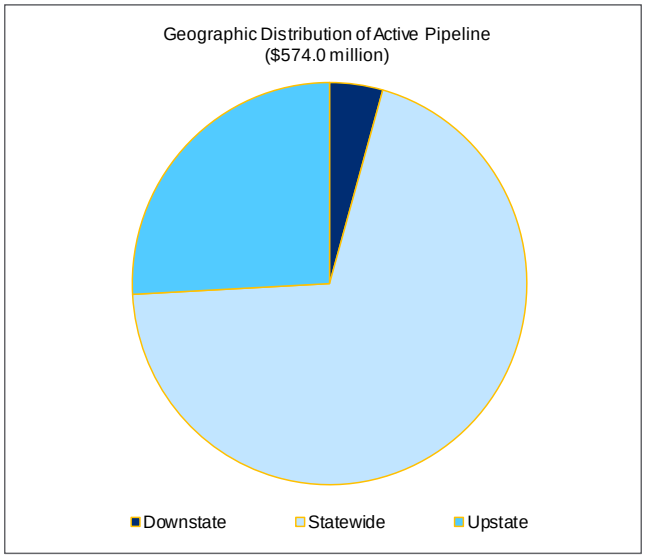


Figure 4. Active Pipeline by Geographic Distribution



3.4 Strategic, Operational & Risk Matters

In the quarter ended December 31, 2018, in addition to those matters referenced elsewhere in this Report and ongoing "business as usual" activities (e.g., origination, execution and routine outreach), NYGB's achievements include:

(a) Continuing Stakeholder Outreach & Communications:

i. Participation in 24 events including multiple Low-to-Moderate-Income Stakeholder Convenings hosted in collaboration with NYSERDA as part of NYGB's Annual Statewide Meeting Series located in Albany, Syracuse, Deer Park, and the Bronx. Other events included speaking to NYGB's approach to financing biomass projects at the Power of Waste Conference hosted by Energy Vision in Saratoga; recognizing the State's leadership and international reputation in green financing,

presentations on NYGB's investment strategy to international representatives; and participating in the Green Seeds Series co-hosted by NYSERDA, which aims to grow NYC's sustainability community and address barriers in the clean energy market. Members of the NYGB Investment & Portfolio Management team also presented at NYSERDA's Pay-for-Performance Stakeholder Meeting, as well as NYSERDA's Heat Pump Technical Conference. The team spoke to specific ways in which NYGB could be helpful in financing energy efficiency and heat pump projects in NYS by addressing existing market barriers and financing gaps that may impede project development;

ii. NYGB has continued to receive positive market feedback to Request for Information ("**RFI**") 4: Financing Arrangements for Energy Storage Projects in New York State. At the submission deadline of December 31, 2018, NYGB had received a strong response from market participants. These responses continue to inform NYGB's consideration of key issues in the feasibility of storage financings and the structuring of potential products, all on a backdrop of ongoing engagement with energy storage developers active in the State's nascent and evolving energy storage market. As evidenced by previously announced intentions to invest at least $200.0 million in storage-related investments,[10] NYGB continues to anticipate further activity in the storage sector and stands ready to offer creative financing solutions to support its growth; and

iii. On November 29, 2018, NYGB issued RFI 5: Low and Moderate Income Participation in CDG Projects in New York State. With this RFI, NYGB and NYSERDA connected with CDG project developers, sponsors, financiers, community-based organizations, and all other market participants that specifically focus on, or are interested in, providing increased opportunities for low and moderate income ("**LMI**") customers to participate in, and directly benefit from, the State's growing distributed energy resource market. All responses, received by the submission deadline of December 31, 2018, help NYGB identify and roll-out product refinements designed to better serve LMI market segment needs and address barriers in LMI-focused CDG projects.

(b) Public Reporting & Metrics:

i. Filed the Quarterly Report for the period ending September 30, 2018 (on November 14, 2018), as required by the Metrics Plan (available at www.greenbank.ny.gov/Resources/Public-Filings).

ii. NYGB will host its regular Quarterly Review Webinar for this Report in late February 2019, including discussion of developments and activities from NYGB's fiscal quarter ending December 31, 2018.

[10] See www.governor.ny.gov/news/governor-cuomo-announces-new-york-energy-storage-roadmap-achieve-nation-leading-target-1500.

4 Metrics

4.1 Quarterly Metrics

Required metrics for the period October 1, through December 31, 2018 are set out in Table 1.[11]

Table 1. Quarterly Metrics

Quarterly Metric	Prior Quarter	Current Quarter
Capital Position		
▪ **Authorized Capital ($)**	$1.0 billion	$1.0 billion
▪ **Authorized Administrative Expenses ($)**	$17.6 million	$17.6 million
▪ **Authorized Evaluation Expenses ($)**	$4.0 million	$4.0 million
Operational Matters		
▪ **Cumulative Revenues ($)**[12]	$44.4 million	$51.8 million
▪ **Cumulative Operating Expenses ($)**[13]	$30.0 million	$33.4 million
▪ **Direct Operating Expenses ($)**[14]	$18.0 million	$20.4 million
▪ **Allocated Expenses ($)**	$12.0 million	$13.0 million
▪ **Credit Facility (if in place)**		
▪ **Credit Facility Amount ($)**	Not Applicable	Not Applicable
▪ **Credit Facility Drawn Amount ($)**	Not Applicable	Not Applicable
▪ **Credit Facility Fees & Interest (Cumulative) ($)**	Not Applicable	Not Applicable
Investment Portfolio		
▪ **Committed Funds ($)**	$116.9 million	$168.1 million
▪ **Deployed Funds ($)**[15]	$260.1 million	$222.0 million
▪ **Current Portfolio ($)**[16]	$376.9 million	$390.2 million
▪ **Overall Investments to Date ($)**	$580.1 million	$637.6 million

[11] NYGB monitors its counterparties' clean energy project installations throughout the duration of each investment through the receipt and review of periodic reports. Based on information received, NYGB continually manages the actual and expected energy and environmental benefits across its portfolio. As new information becomes available informing NYGB of NYS market uptake of clean energy projects, NYGB may correspondingly adjust (up or down) the overall portfolio's high and low estimated Total Project Costs and energy and environmental metrics (identified at closing of each investment, working with the relevant clients and counterparties and reflected in Transaction Profiles). This constant monitoring and refinement of expected outcomes improves the accuracy of NYGB's portfolio-level estimation of impact benefits as it works towards meeting the CEF objectives to support the State's clean energy goals. Given such periodic adjustments, the aggregate estimated benefits reported in Quarterly Reports are the most up-to-date estimates (and so no longer will reflect the sum of the low and high estimated benefits specified in the Transaction Profiles at the time of each transaction close).

[12] Cumulative Revenues reflect quarterly fair market value adjustments related to NYGB capital held in U.S. Treasury securities, consistent with U.S. generally accepted accounting principles. In addition, Cumulative Revenues are always stated net of impairments.

[13] Currently includes $137,394 in Evaluation Expenses.

[14] Direct Operating Expenses (since NYGB inception, as reported in Table 1) includes approximately $1.2 million in non-recurring costs associated with NYGB's capital expansion initiative. Costs of this nature are not normally included in operating expenses or the calculation of operating net income. Proper accounting treatment of these amounts will always be reflected in NYGB's annual audited financial statements, including a more detailed breakdown of all NYGB's revenues and expenses.

[15] Deployed Funds as presented in Table 1 is net of all capital repaid to the reporting date.

[16] The dollar value of the Current Portfolio is expected to fluctuate from quarter to quarter, including to reflect any decreases in Committed Funds and/or Deployed Funds. Decreases in Committed Funds could occur, for example, in connection with the release of undrawn funds at the end of an availability period or otherwise consistent with the terms of an investment, while decreases in Deployed Funds occur primarily when NYGB investments are repaid from time to time, allowing those monies to be recycled into new clean energy investments in the State, generating further benefits for ratepayers.

Quarterly Metric	Prior Quarter	Current Quarter
▪ **Total Project Costs (Cumulative) ($)**[17]	In the range of $1.44 to 1.68 billion	In the range of $1.51 to 1.75 billion
▪ **Mobilization Ratio**	Tracking at least 2.7:1 on average across portfolio	Tracking at least 2.6:1 on average across portfolio[18]
▪ **Portfolio Concentrations (%)**[19]	71.8% Renewable Energy	74.3% Renewable Energy
	9.6% Energy Efficiency	6.8% Energy Efficiency
	18.6% Other	18.9% Other[20]
▪ **Number & Type of NYGB Investments**	29 – Renewable Energy	32 – Renewable Energy
	7 – Energy Efficiency	7 – Energy Efficiency
	5 – Other	5 – Other
▪ **Number & General Type of NYGB Counterparties**[21]	55 – Local Development Corporation; Global, Corporate and/or Investment Bank; Regional Bank; Specialty Finance Company; Energy Project Developer; Municipal, University, Schools & Hospitals; Energy Technology Provider & Vendors; Government Authority; Insurance Company; Transportation	55 – Local Development Corporation; Global, Corporate and/or Investment Bank; Regional Bank; Specialty Finance Company; Energy Project Developer; Municipal, University, Schools & Hospitals; Energy Technology Provider & Vendors; Government Authority; Insurance Company; Transportation
▪ **Estimated Gross Lifetime Energy Saved by Fuel Type from Energy Efficiency Projects (MWh/MMBtu) and/or Estimated Gross Lifetime Clean Energy Generated (MWh) for Committed Funds & Deployed Funds**	Estimated Gross Lifetime Energy Saved by Fuel Type (Energy Efficiency): 749,000 – 830,000 MWh; and 4.01 – 4.42 million MMBtu	Estimated Gross Lifetime Energy Saved by Fuel Type (Energy Efficiency): 749,000 – 830,000 MWh; and 4.01 – 4.42 million MMBtu
	Estimated Gross Lifetime Clean Energy Generated: 12.5 – 16.2 million MWh	Estimated Gross Lifetime Clean Energy Generated: 14.5 – 18.3 million MWh

[17] Further to the definition of "Total Project Costs (Cumulative)" in the Metrics Plan (see page 15), Total Project Costs (Cumulative) may include fair market value ("**FMV**") data for a subset of NYGB's investments. FMV is an estimated market valuation of fully installed energy projects provided by NYGB's counterparties and is often required for federal income tax purposes, by institutional investors and for certain grant program purposes unconnected with NYGB. As projects progress and the cost of installed equipment and labor are known and reported to NYGB by its counterparties, NYGB will seek to adjust reported values and replace FMV in its aggregated data sets and periodic reporting with reported actual costs.

[18] Given the range of Total Project Costs that NYGB investments mobilize, the Mobilization Ratio also represents a range; currently of 2.4:1 to 2.7:1. See Section 4.2 for additional discussion of mobilization.

[19] Based on executed transactions and reflecting dollar values invested by NYGB in renewable energy and energy efficiency transactions, each as a proportion of the Current Portfolio.

[20] "Other" technology classification includes: CHP, sustainable transportation, fuel cells, energy storage, microgrids and other types of projects that, while falling within "clean energy", are not readily classified as either renewable energy or energy efficiency.

[21] In reporting the number and type of NYGB counterparties, NYGB seeks to reflect counterparties that are discrete (i.e., where NYGB is involved in different transactions with the same counterparty, that party is counted only once for the purposes of this metric); and directly in the transaction with NYGB (i.e., vendors or other counterparties to NYGB's clients or expected future transaction participants are not counted).

Quarterly Metric	Prior Quarter	Current Quarter
▪ **Estimated Gross First Year[22] Energy Saved by Fuel Type from Energy Efficiency Projects (MWh/MMBtu) and/or Estimated Gross First Year Clean Energy Generated (MWh) for Committed Funds & Deployed Funds**	Estimated Gross First Year Energy Saved by Fuel Type (Energy Efficiency): 51,300 – 57,100 MWh; and 254,000 – 279,000 MMBtu	Estimated Gross First Year Energy Saved by Fuel Type (Energy Efficiency): 51,300 – 57,100 MWh; and 254,000 – 279,000 MMBtu
	Estimated Gross First Year Clean Energy Generated: 521,000 – 675,000 MWh	Estimated Gross First Year Clean Energy Generated 601,000 – 758,000 MWh
▪ **Estimated Gross Lifetime Energy Saved from CHP (MWh) for Committed Funds & Deployed Funds**	Estimated Gross Lifetime Energy Saved from CHP: 7,070 – 8,640 MWh	Estimated Gross Lifetime Energy Saved from CHP: 7,070 – 8,640 MWh
▪ **Estimated Gross First Year Energy Saved from CHP (MWh) for Committed Funds & Deployed Funds**	Estimated Gross First Year Energy Saved from CHP: 293 – 358 MWh	Estimated Gross First Year Energy Saved from CHP: 293 – 358 MWh
▪ **Estimated Gross Lifetime Energy Savings from CHP (MMBtu)[23] for Committed Funds & Deployed Funds**	Estimated Gross Lifetime Energy Savings from CHP: -(41,000 – 50,100) MMBtu	Estimated Gross Lifetime Energy Savings from CHP: -(41,000 – 50,100) MMBtu
▪ **Estimated Gross First Year Energy Savings from CHP (MMBtu) for Committed Funds & Deployed Funds**	Estimated Gross First Year Energy Savings from CHP: -(1,700 – 2,070) MMBtu	Estimated Gross First Year Energy Savings from CHP: -(1,700 – 2,070) MMBtu
▪ **Estimated Gross Clean Energy Generation Installed Capacity from CHP (MW), if applicable, for Committed Funds & Deployed Funds**	1.6 MW	1.6 MW
▪ **Estimated Gross Clean Energy Generation Installed Capacity (MW), if applicable, for Committed Funds & Deployed Funds**	438.5 – 561.8 MW	507.5 – 630.8 MW
▪ **Estimated Gross Lifetime GHG Emission Reductions (metric tons) for Committed Funds & Deployed Funds**	7.21 – 9.25 million metric tons	8.26 – 10.33 million metric tons
Investment Pipeline		
▪ **Active Pipeline (In the Quarter) ($)**	$581.9 million	$574.0 million
Investment Process		
▪ **Proposals Received – Value (Cumulative) ($)**	$2.9 billion	$3.1 billion
▪ **Approvals - Scoring Committee (Cumulative) ($)**	$2.7 billion	$2.9 billion
▪ **Approvals - Greenlight Committee (Cumulative) ($)**	$1.3 billion	$1.3 billion
▪ **Approvals - IRC (Cumulative) ($)**	$629.0 million	$675.0 million

[22] All "estimated gross first year" metrics refer to the first year of estimated gross benefits (e.g., energy saved, installed capacity, GHGs etc.) that are expected to occur when each underlying project is fully installed. This means that estimated gross first year benefits across NYGB's portfolio do not (and are not intended to) correspond to installed benefits in any given year, and instead represent cumulative estimated benefits across NYGB's portfolio based on transactions executed through the CEF term. Note that underlying projects will usually be installed over one or more years following execution of investment agreements (reflecting project development/implementation and funding deployment cycles). The sum of all estimated gross first year measures will approximate the total annual CEF benefits goals for NYGB investments at the end of the CEF term (i.e., in 2025). As set out in Section 2.2.2 of the Metrics Plan, NYGB reports on installed energy and environmental benefits associated with NYGB's portfolio in the prescribed form annually, with such reporting included in the Quarterly Metrics Report for each quarter ending December 31.

[23] For CHP systems, energy savings in thermal unit form is computed as the difference between the natural gas displaced by the recovered thermal energy and natural gas consumption by the generator. See www.nyserda.ny.gov/-/media/Files/Publications/PPSER/Program-Evaluation/2015ContractorReports/2015-Distributed-Generation-CHP-Impact-Evaluation-Final.pdf for information on CHP Impact evaluation methods in NYS.

4.2 Managing Outcomes Across the Portfolio – Mobilization

In this Report, the estimated mobilization ratio, which NYGB aims to maintain at 3:1 on average across the portfolio, is at 2.6:1 (based on a range of 2.4:1 – 2.7:1). In the Quarterly Report for the period ended September 30, 2018, the average mobilization ratio was slightly higher, at 2.7:1, but also less than the target of 3:1. This Section 4.2 discusses how NYGB manages key indicators across its portfolio and how these indicators tie to NYGB's clean energy activities in the State and drive outcomes for ratepayers.

When NYGB enters into each transaction, estimates are made (in collaboration with NYGB clients) of a number of key metrics, including Total Project Costs, Mobilization Ratio, GHG emissions reductions and other impact benefits included (on an aggregated basis across the portfolio) in Table 1. As clean energy developments in which NYGB invests are generally long-lived and can take many months and often years to implement, NYGB regularly reviews its portfolio and updates estimated metrics based on available information.

While NYGB continues to focus on mobilizing large amounts of capital for clean energy and sustainable infrastructure in the State, it also prioritizes its market transformation mandate by seeking to create, accelerate and grow new clean energy asset classes through the successful implementation of projects in the State where such development may not otherwise occur at all, as quickly or at the requisite scale. So, while new transactions were closed during the period covered by this Report that mobilize and support greater clean energy investment in NYS, the net reduction in Mobilization Ratio period-over-period reflects NYGB's catalyzing role in the State's clean energy market – ensuring that projects that are replicable and scalable get done in the nearer term, especially in newer areas like Community DG, providing a firm foundation to these nascent asset classes and an impetus for further scalable and replicable development.

For NYGB to be the effective catalyst in the market that the State requires, NYGB is needed to play a number of different roles in the capital structure for proposed projects – often being required to play multiple roles with respect to the same set of developments. As an example, in a nascent asset class, NYGB may be asked to provide construction lending. Where it does so, the dollar value of the construction facility (for example, $10.0 million) is then calculated as mobilizing the Total Project Costs associated with the overall project (for example, $50.0 million). Where NYGB participation is also required to take out the construction facility and provide a term loan to the same project (say a term facility of $20.0 million), the way mobilization is calculated on a cumulative basis, NYGB's total investment of $30.0 million mobilizes the same Total Project Cost of $50.0 million - so a 5:1 ratio (i.e., $50.0 million to $10.0 million), as calculated under the Metrics Plan, decreases to 5:3 (i.e., $50.0 million to [$10.0 million plus $20.0 million]).

4.3 Annual Installed Energy & Environmental Benefits

The Metrics Plan requires that NYGB report on installed energy and environmental benefits associated with its investment portfolio, in the form of Table 2 below for each calendar year. These annual installed metrics are to be included in the Quarterly Report for the period ending on December 31 in each year.

The purpose of Table 2 is to show the cumulative progress of NYGB's investments (across the whole portfolio) towards delivering the total estimated energy and environmental benefits set out in Transaction Profiles as investments close.[24]

[24] In addition, as NYGB receives actual impact data from its clients, these are aggregated and included in the overall quarterly estimates per impact category, as contained in Table 1 of each Quarterly Report.

Table 2. Annual Installed Energy & Environmental Benefits (Calendar Year)

Energy & Environmental Benefit	Prior Year Increment[25]	Prior Year Cumulative[26]	Current Year Increment	Current Year Cumulative
▪ **Installed energy saved by fuel type from energy efficiency projects (MWh/MMBtu) and/or installed clean energy generated (MWh)**	Energy Saved by Fuel Type (Energy Efficiency): 13,240 MWh; and 2,562 MMBtu	Energy Saved by Fuel Type (Energy Efficiency): 13,918 MWh; and 11,827 MMBtu	Energy Saved by Fuel Type (Energy Efficiency): 18 MWh; and 2,863 MMBtu	Energy Saved by Fuel Type (Energy Efficiency): 13,936 MWh; and 14,690 MMBtu
	Clean Energy Generated: 101,140 MWh	Clean Energy Generated: 158,191 MWh	Clean Energy Generated: 80,649 MWh	Clean Energy Generated: 238,840 MWh
▪ **Installed energy savings from CHP (MWh)**	0 MWh	0 MWh	0 MWh	0 MWh
▪ **Installed energy savings from CHP (MMBtu)**	0 MMBtu	0 MMBtu	0 MMBtu	0 MMBtu
▪ **Installed CHP capacity (MW), if applicable**	0 MW	0 MW	0 MW	0 MW
▪ **Installed clean energy generation capacity (MW), if applicable**	85.9 MW	134.3 MW	69.1 MW	203.4 MW
▪ **Installed GHG emission reductions (metric tons)**	64,236 metric tons	94,673 metric tons	42,612 metric tons	137,286 metric tons

NYGB's counterparties reported an incremental 69.1 MW of clean energy installed capacity in the State in the calendar year through December 31, 2018. This brings NYGB's cumulative progress of installed projects to 203.4 MW out of the estimated 507.5 MW in NYS in aggregate over the life of the existing underlying transactions - representing a 51.5% increase year-on-year.

NYGB's Overall Investments to Date of $637.6 million have so far delivered 137,286 metric tons of GHG emissions reductions to New Yorkers, a 45.0% increase year-over-year. These GHG emissions reductions will further increase as NYGB's counterparties continue to draw down on capital commitments to fund new clean energy project installations, and NYGB continues to close new transactions in 2019 and beyond. To put this into perspective, at December 31, 2017, NYGB's portfolio of investments was expected to involve the build-out of 332.1 MW of clean energy over deployment periods averaging two to three years. Since then, NYGB's portfolio of investments has grown to 507.5 MW in underlying projects, and in the past year NYGB's counterparties have delivered 203.4 MW in NYS, averaging 5.8 MW of new systems installed per month (based on the current year increment of 69.1 MW).

5 Progress Against Plan Deliverables

In its annual Business Plan, filed on June 29, 2018, NYGB identified specific deliverables (the "**Plan Deliverables**") that collectively mark its progress in implementing key initiatives in the period April 1, 2018 through March 31, 2019 (the "**Plan Year**").

Progress against the Plan Deliverables is required to be addressed in NYGB's Quarterly Reports, together with

[25] 2017 Calendar Year reported values have been adjusted, where needed, to incorporate lagged data, and improved counterparty performance data monitoring processes.

[26] 2017 Calendar Year reported values have been adjusted, where needed, to incorporate lagged data, and improved counterparty performance data monitoring processes.

a brief narrative (as appropriate) of status and an explanation of any material variances relative to expectations.

NYGB's performance against the Plan Deliverables for the quarter ending December 31, 2018 is summarized in Table 3.

Table 3. Status of Plan Deliverables (2018 – 2019)

Category	Deliverable	Status in Quarter Ending December 31, 2018
Strong Active Pipeline		
▪ **Active Pipeline**	▪ Maintain an Active Pipeline of at least $450.0 million per quarter on average throughout the Plan Year.	☑ **Achieved for this Quarter:** Active Pipeline of **$574.0 million** for the quarter. Average Active Pipeline over the three quarters of the fiscal-year-to-date equals **$566.0 million**.
▪ **Targeted Solicitation: Energy Storage**	▪ Publicly issue RFI/RFP.	☑ **Achieved for the Plan Year:** NYGB issued RFI 4 in June 2018 targeting energy storage developers and other market participants, in conjunction with the release of the NYS Energy Storage Roadmap.
	▪ Convene energy storage market participants to identify specific market needs and advance product development.	☑ **Achieved for the Plan Year:** NYGB participated in all three of the NYSDPS/NYSERDA Technical Conferences on the Energy Storage Roadmap (in Albany, Farmingdale and New York City), presenting on NYGB financing opportunities within the storage sector.
▪ **Targeted Solicitation: Solar-Plus-Storage**	▪ Publicly issue RFI/RFP.	☑ **Achieved for this Quarter:** NYGB reissued its RFP 10 to incorporate energy storage as "RFP 10: Financing for CDG Solar Projects including Projects Paired with Energy Storage" in October 2018. This remains an open solicitation.
	▪ Convene solar-plus-storage market participants to identify specific market needs and advance product development.	☑ **Achieved for this Quarter:** In November 2018, in collaboration with NYSERDA, NYGB participated in and presented at the NYSERDA-hosted conference: "The Power of Synergy: PV + Energy Storage" (in New York City).
▪ **Targeted Solicitation: Pay-for-Performance**	▪ Publicly issue RFI/RFP.	▪ **Determined that RFI/RFP Issuance Not Necessary in Plan Year:** During 2018, NYGB worked extensively with NYSERDA colleagues on the key strategic Pay-for-Performance initiative – and these coordinated and focused efforts continue as a priority. Having surveyed the market and identified the likely project participants, it was concluded that for the Plan Year, NYSERDA and NYGB are already engaged with the likely universe of market participants and that issuing a formal RFI/RFP document would not be accretive to existing efforts at this stage. When the Plan Year objectives

Category	Deliverable	Status in Quarter Ending December 31, 2018
		were set in the second quarter of 2018, it was assumed that an RFI/RFP would be the most effective way to identify and engage market participants. The collaborative experience of the NYGB and NYSERDA teams in the period since was that in the case of Pay-for-Performance, relevant market participant identification and engagement occurred through the outreach efforts undertaken.
	▪ Convene energy efficiency market participants to identify specific market needs and advance product development.	☑ **Achieved for this Quarter:** In November 2018, in collaboration with NYSERDA, NYGB participated in and presented at the NYSERDA-hosted "Pay for Performance Commercial Stakeholder Meeting" (in New York City).
▪ **Targeted Solicitation: Tenant Improvement Financing**	▪ Publicly issue RFI/RFP.	☑ **Ongoing & On Track:** NYGB is working closely with market participants to determine and coordinate optimal market engagement strategy as relates to Tenant Improvement Financing.
	▪ Convene large property owners and related stakeholders to identify specific market needs and advance product development.	☑ **In Process:** While a formal convening has not yet occurred, NYGB continues to interact in a focused manner with large property owners with potential projects and an interest in working with NYGB, to refine potential product offerings and catalyze project proposals.
▪ **Targeted Solicitation: Clean Energy for Low-to-Moderate Income ("LMI") End-Users**	▪ Publicly issue RFI/RFP.	☑ **Achieved this Quarter:** In November 2018 NYGB issued "RFI 5: Low to Moderate Participation in CDG Projects in NYS". This RFI closed on December 31, 2018 and many responses were received which NYGB has reviewed in the context of targeted product development and is actively engaged with respondents.
	▪ Convene LMI stakeholders to identify specific market needs and advance product development.	☑ **In Process:** A stakeholder convening is currently being organized for April 2019. In addition, representatives of NYGB participated in and presented at five Low-to-Moderate-Income Stakeholder Convenings hosted by NYSERDA (in Western New York, the Mid-Hudson, Central New York, Long Island and New York City).
Portfolio Driving Material Clean Energy Investments Across NYS		
▪ **Committed Funds**	▪ Achieve an average of $56.25 million in closed transactions per quarter.	☑ **Achieved for this Quarter: $57.5 million** in closed transactions in the quarter. Average of **$60.1 million** in closed transactions per quarter in the fiscal-year-to-date.

Category	Deliverable	Status in Quarter Ending December 31, 2018
	▪ Commit $685.0 million (cumulative) to NYGB investments as of March 31, 2019.	☑ **Ongoing & On Track: $637.6 million** Overall Investments to Date.
▪ **Evaluation**	▪ Select independent consultant(s) and finalize scope(s) of work.	☑ **Achieved for the Plan Year:** Independent consultant selected in July 2018 and engagement commenced.
	▪ Work with NYSERDA and the independent consultant(s) to advance the baseline study of financial market transformation in accordance with the evaluation Work Plan.	☑ **Ongoing & On Track:** Financial Market Evaluation project commenced in July 2018, and market baselining and other relevant activities are continuing.
	▪ Work with NYSERDA and the independent consultant(s) to advance the impact evaluation.	☑ **Achieved for this Quarter:** NYGB solar PV assets were included in the NY-Sun Solar PV Evaluation study conducted in early 2018. NYSERDA published the "Solar Photovoltaic Program Impact Evaluation for 2011-2016 – Final Report" in 2018.[27]
Mobilizing Private Capital		
▪ **Mobilization Ratio**	▪ Achieve an average, portfolio-wide Mobilization Ratio of at least 3:1, driving towards a ratio of 8:1 across all NYGB investments by the end of the CEF term in 2025.	☒ **Not achieved for this Quarter:** Portfolio Mobilization Ratio at an average 2.6:1 in Q4 2018.[28]
	▪ Evaluate strategies to provide for third-party capital investment at the portfolio level while continuing to deliver more per ratepayer dollar for the benefit of all New Yorkers.	☑ **Ongoing & On Track:** NYGB continues to work with its advisors and relevant stakeholders to evaluate third-party capital opportunities as initially announced by Governor Cuomo in Fall 2017 and updated as part of the 2019 State of the State initiatives.

[27] See full report at www.nyserda.ny.gov/About/Publications/Program-Planning-Status-and-Evaluation-Reports/Evaluation-Contractor-Reports/2018-Reports.

[28] Given the range of Total Project Costs that NYGB investments mobilize, the Mobilization Ratio also represents a range; currently of 2.4:1 to 2.7:1. Although new transactions were closed during this quarter that are expected to mobilize clean energy project costs in NYS, the net reduction in Mobilization Ratio period-over-period is a result of certain transactions where the financial commitment was increased for the same portfolio of projects. See also the discussion in Section 4.2.

Schedule – Transaction Profiles

As required by the Metrics Plan, Transaction Profiles for each of the transactions closed during the quarter to which this Report relates are attached.

TRANSACTION PROFILE

October 2018

Driving Standardization in the New York Solar Market

BQ Energy – Steel Sun 2

*BQ Energy ("**BQ**") is a renewable energy project developer specializing in landfill and brownfield site redevelopment. As the fifth installation of a larger portfolio of projects to be financed in collaboration with NY Green Bank ("**NYGB**"), BQ received a $12.5 million construction loan to complete an 8.9 megawatt ("**MW**") solar project to be constructed on a brownfield site in Lackawanna, NY. Solar power from this project will be sold to Canisius College (the "**College**"), meeting a significant percentage of its total power needs.*

Transaction Description

BQ is a Wappingers Falls, New York-based renewable energy project developer specializing in landfill and brownfield site redevelopment. NYGB's $12.5 million construction loan enables BQ to complete the 8.9 MW ground-mounted solar farm (the "**Project**") to be constructed on a brownfield site in Lackawanna, NY. CIR Electric Construction Corporation ("**CIR**") will construct the Project under a standardized balance of system ("**BOP**") contract utilizing top-tier panels, inverters, and racking systems. The Project will generate revenue by selling clean power (or, more specifically, selling the value of clean power evidenced by net metering credits) to the College.

The Project is the fifth of several similar developments in BQ's pipeline that NYGB anticipates financing as part of a larger portfolio. BQ expects the majority of projects in the portfolio to be located on landfill and brownfield sites in Western NY, Central NY, Hudson Valley, and Long Island with the power generated providing clean power to municipalities, universities, schools, and hospitals ("**MUSH**"), and utilities.

NYGB's participation in the Project – and in similar past and future developments included in the proposed portfolio arrangement – will help expand financing opportunities for smaller (less than 10.0 MW) solar systems by fostering standardization in underwriting (which is the process a lender uses to assess the creditworthiness or risk of a potential borrower) including a streamlined, uniform approach to integrating contractors, structuring contracts, and utilizing standardized equipment.

This Transaction Profile is provided pursuant to the "NY Green Bank – Metrics, Reporting & Evaluation Plan, Version 3.0" (the "**Metrics Plan**") developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the "**Commission**") on June 20, 2016.[1] This Transaction Profile contains specific information in connection with the BQ transaction (which was entered into on October 19, 2018, as required by the Metrics Plan).[2]

[1] Case 13-M-0412.
[2] See Section 4.0, page 8 and Schedule 3.

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loan & Investment	Construction Loan	$12.5 million

Location(s) of Underlying Project(s)

Erie County. The Project is located in Lackawanna, New York, with past and future portfolio projects located in various counties throughout New York State.

Types of Client & Counterparty Organizations that are Transaction Participants

	Name	Participant Type
Client	BQ Energy	Energy Project Developer
Counterparties	CIR	Industry Vendor
	Canisius College	Commercial End-User

Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Smaller-Scale Solar Developers	Many smaller-scale solar developers face challenges in securing adequate construction and long-term financing, particularly for smaller to mid-sized solar projects, as these developers are restricted in their access to capital by their size and comparatively limited track record.	This transaction aims to drive growth in the small to mid-size solar sector by encouraging the standardization of contractors, contracts, and equipment thereby increasing underwriting efficiency and reducing overall transaction costs. Developing standardized projects within a portfolio makes the overall financing opportunity more attractive to a larger potential investor group, ultimately providing more funding options and influencing financing costs.
Capital Market Participants	Limited private capital interest to date in supporting the construction of distributed energy projects in New York's clean energy marketplace, due to limited history and track record of such financings.	Institutional investors and other private sector capital providers have shown less interest in financing small to mid-size solar project developers which may have more limited operating histories. NYGB's participation in this transaction will help this NYS-based developer further consolidate its track record and achieve the scale needed to appeal more broadly to traditional capital providers. In turn, this can be expected to enable more refinancing options which will provide the market with greater levels of familiarity with this asset class – a prerequisite to increasing liquidity.
New Yorkers	While interest and activity in solar projects are increasing rapidly in NYS, only a relatively small number of companies and financial models are being used. Fewer options in the marketplace generally translate into higher prices for end-users and more limited consumer choice.	By bridging certain financing gaps in the marketplace, NYGB is enabling a larger group of solar developers to participate in New York's clean energy marketplace. This gives end-users more choice in terms of how they pay for their systems and who they select as their installer. Greater choice and competition in the market will lead to reduced costs, allowing a greater number of New Yorkers and New York businesses to go solar.

Technologies Involved

Technology	Measures
Renewable Energy	Solar photovoltaic (**"PV"**) systems

Metrics & Evaluation Plan

Planned Energy & Environmental Metrics

NYGB's minimum investment criteria specifically require that "transactions will have the potential for energy savings and/or clean energy generation that will contribute to greenhouse gas [('**GHG**')] reductions in support of New York's energy policies".[3] In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on[4]:

- Estimated gross lifetime and first-year clean energy generated (MWh);
- Estimated gross clean energy generation installed capacity (MW); and
- Estimated gross lifetime and first-year GHG emission reductions (metric tons).

The estimated lifetime and first-year energy and environmental impacts of the Project, facilitated by NYGB's financial participation in this transaction, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated clean energy generated (MWh)	221,700	300,200	8,870	12,010
Estimated clean energy generation installed capacity (MW)[5]	8.9	8.9	Not Applicable	
Estimated GHG emission reductions (metric tons)	116,700	158,000	4,670	6,320

Planned Market Characterization Baseline & Market Transformation Potential

The Metrics Plan requires that market evaluation will occur when a critical mass of NYGB financing and investment arrangements are put in place. Market evaluation activities commenced in 2018 on sectors including solar, that NYGB has supported since inception, consistent with the requirement for such assessments approximately three to five years following initial NYGB capital deployments.[6] Baseline data is being collected commencing in 2018 and will be updated going forward to include indicators specific to this transaction. Baseline data on indicators will be used as a comparison point against which to assess market progress in later studies. Progress indicators are defined below for the expected short, mid and long-terms outcomes.

Output indicators will identify early activity levels and will be regularly tracked for the duration of the transaction. These include, but are not limited to:

- Number and type of projects in development and completed;
- Average and aggregate dollar value of projects;
- Size (generation capacity and dollar value) of projects;

[3] Case 13-M-0412, "Order Establishing New York Green Bank and Providing Initial Capitalization" issued and effective December 19, 2013 of the Commission, Ordering Clause 6 at pages 24 – 25.
[4] See Metrics Plan, Section 2.0, pages 2 – 6.
[5] Installed clean energy generation capacity at full deployment of funds is the same for first-year and lifetime durations.
[6] See Metrics Plan, Section 3.3, page 7.

- Performance of installed systems; and
- Renewable energy generation and GHG emissions reductions.

Outcome indicators will be expected to show progress through program tracking or market evaluation over time. These include, but are not limited to:

- Increased awareness of clean energy benefits among financing entities as a result of favorable technology performance data;
- Favorable financial performance data;
- Favorable technology performance data;
- Market volume of projects increases;
- Investments become increasingly attractive to investors, based on positive financial performance data and acceptable risk/default rates;
- Decreased project technology cost;
- Increased number of financial participants providing similar capital structures; and
- Reduced time to execute clean energy financings.

The above listed indicators will remain in development until market characterization and baseline activity commences. Additional aspects may be tracked to further support baseline and market measurements.

Proposed Method of Outcome/Impact Evaluation (by NYSERDA) & Timeframe

Market evaluation will address the outcome indicators identified above. Methods will include analysis of program data along with interviews and surveys of market participants to track information including but not limited to: project scale information, interest in solar financing, and influence of NYGB's participation on financial markets. As noted, baseline data will be collected on most key indicators starting in 2018 and later follow-up studies will assess progress against baseline levels. The specific timing of these efforts may be revised based on experience or other relevant factors as the investment evolves

Impact evaluation will assess how the project is performing within the estimated clean energy benefits ranges set out in this Transaction Profile.

As with all NYGB investments, BQ projects that receive an incentive or funding from other entities (e.g., utility or other NYSERDA program) will, in accordance with the Metrics Plan, be tracked to minimize any double-counting of activity or benefits on a consolidated basis. Pursuant to the Metrics Plan, evaluation sampling approaches will also be used as a mechanism to estimate overlap and avoid double counting. Attempts will also be made to coordinate market and impact evaluation activities for Projects that receive support from multiple sources to maximize the efficiency of data collection and avoid participant survey fatigue.

TRANSACTION PROFILE

Revised December 2018[1]

Supporting the Construction of New York's Community Solar Projects

Delaware River Solar

*In April 2018, NY Green Bank ("**NYGB**") entered into an agreement with Delaware River Solar, LLC ("**DRS**") to provide a $7.0 million bridge loan to finance the interconnection expenses of their community distributed generation ("**Community DG**") projects in New York State ("**NYS**"). In July 2018, NYGB committed an additional $55.0 million to participate in a term loan to finance the capital costs of DRS's Community DG portfolio of projects. In December 2018, NYGB committed a further $25.0 million to provide a construction facility for Community DG projects in NYS. Collectively, these transactions are initially expected to support the deployment of up to 70.0 megawatts ("**MW**") of solar photovoltaic ("**PV**") in NYS, providing residents and businesses with a greater variety of energy choices and, ultimately, lower-cost clean energy opportunities.*

Transaction Description

DRS is a NY-based solar development company based in Callicoon, NY, that finances, builds, and operates Community DG projects. DRS has contracted with NYGB to provide financing for the development of the DRS Community DG portfolio in NYS, through various facilities.

Interconnection Bridge Loan Facility

Under the New York State Public Service Commission Standardized Interconnection Requirements and Application Process, developers seeking interconnections for their projects are required to make a deposit of 25.0% of the interconnection upgrade estimates followed by full payment 120 business days later. In April 2018, NYGB and DRS closed a Bridge Loan for up to $7.0 million to finance up to 90.0% of those interconnection payments to NYS utilities, which will be used to finance interconnection expenses for up to 70.0 MW of Community DG projects in NYS.[2]

Term Loan Facility

In July 2018, NYGB and DRS closed a second transaction that will provide $55.0 million in term financing of the capital costs associated with the deployment of up to 70.0 MW of CDG projects in NYS. This transaction is a first-of-its-kind financing for Community DG projects with short term contracts and floating rates. It establishes performance history for the nascent Community DG asset class. NYGB's involvement helps the market to grow, lower the cost of capital, and attract other market participants to finance Community DG projects.

Construction Facility

In December 2018, NYGB and DRS closed a third transaction that will provide $25.0 million in construction financing of the project costs associated with building up to 70.0 MW of CDG projects in NYS. This transaction directly responds to the market demands for construction financing to further accelerate the build-out of

[1] Refer to the Summary of Changes document for details of updates, available at www.greenbank.ny.gov/Investments/Transaction-Profiles.

[2] Under the revised NYS Standardized Interconnection Requirements, within 60 business days of receiving the Coordinated Electric System Interconnection Review results ("**CESIR**"), interconnection applicants must pay the respective utility 25.0% of the interconnection upgrade estimates.

Community DG projects in NYS. It complements NYGB's existing term loan facility with DRS and reduces transaction soft costs through utilizing a consistent set of lawyers, engineers and other consultants on a negotiated programmatic basis.

Overall Context

NYGB has committed a combined $87.0 million to DRS through three loan facilities. These complementary transactions are collectively expected to: (i) provide residential subscribers access to reliable, clean, low-cost energy; and (ii) reduce up to 43,360 metric tons of greenhouse gas ("**GHG**") emissions annually or up to 1,083,900 metric tons of GHG emissions over a 25-year project life. These transactions will help to demonstrate the viability of the Community DG model in the State, draw new investors and financial institutions into the marketplace, lowering the cost of capital. Consumers are expected to be ultimate beneficiaries in the form of broader access to lower-cost clean energy generation, with corresponding resiliency, affordability, choice and environmental benefits.

This Transaction Profile is provided pursuant to the updated "NY Green Bank – Metrics, Reporting & Evaluation Plan, Version 3.0" (the "**Metrics Plan**") developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the "**Commission**") on June 20, 2016.[3] This Transaction Profile contains specific information in connection with the DRS transactions (which were entered into on April 19 and July 9, 2018, respectively), as required by the Metrics Plan.[4]

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loan & Investment	Bridge Loan	$7.0 million
Asset Loan & Investment	Term Loan	$55.0 million
Asset Loan & Investment	Construction Facility	$25.0 million

Location(s) of Underlying Project(s)

Statewide.[5] DRS's Community DG solar projects are in regions across NYS.

Types of Client & Counterparty Organizations that are Transaction Participants

	Name	Participant Type
Counterparty	Delaware River Solar, LLC	Energy Project Developer
Counterparty (current)	New York State Electric & Gas Corporation Rochester Gas & Electric Central Hudson Gas & Electric	Electric Utility
Financier(s)	Tax equity provider(s)	Major U.S. Financial Institution(s)

[3] Case 13-M-0412.
[4] See Section 4.0, page 8 and Schedule 3.
[5] Defined as projects located in four or more regions of the State.

Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Solar Project Developers	Project sponsors are often expected to pay for interconnection upgrade expenses with equity funds as they finalize construction financing arrangements. This results in a relatively inefficient use of sponsor equity, limiting project deployment efforts and effectively restricting the amount of Community DG being deployed in NYS.	The bridge loan encourages an efficient use of sponsor equity and supports project development efforts in NYS by bridging the time period project sponsors need in order to finalize financing arrangements for projects that have completed the CESIR process. NYGB's participation creates an easier pathway forward for developers and enables greater deployment of Community DG along with other distributed generation assets throughout the State.
	Construction financing arrangements remain difficult to secure with many lenders being less willing to take on construction risks in the nascent Community DG asset class. A developer's ability to deliver completed projects requires the availability of sufficient construction funding with pricing that reflects expected risks.	The construction facility supports the delivery of completed projects at scale. By participating in a number of financing facilities for DRS in relation to the same sizable portfolio of projects, NYGB allows greater deployment of Community DG assets throughout the State in the nearer term – materially helping in the establishment of this important asset class and in meeting the State's clean energy goals with corresponding benefits to consumers.
Capital Market Participants	As a relatively new form of clean energy distribution and therefore lesser known business model, Community DG lacks a large volume of financing precedents and has a limited performance history in NYS. As such, it is difficult for private sector capital providers to assess and price the underlying risk exposures associated with Community DG project investments.	These transactions are expected to generate project and customer performance data, which should help draw new investors and financial institutions into the marketplace by demonstrating that competitive risk-return profiles can be achieved by Community DG enabled business models.
Community DG Subscribers	Due to project siting, property ownership, and consumer preference issues, on-site solar project installations may not be viable for a number NYS homeowners, renters, and businesses. This currently limits the number of solar projects getting done to those with perfectly sited homes or businesses.	These transactions support the deployment of Community DG solar projects, which provide those who are not otherwise able to install solar energy generation systems on their property (e.g., homeowners whose rooftops cannot support solar systems, renters, and those who cannot afford solar systems, etc.), with voluntary access to clean, low-cost energy, regardless of their home or business location.

Technologies Involved

Technology	Measures
Renewable Energy	Solar photovoltaic systems

Metrics & Evaluation Plan

Planned Energy & Environmental Metrics

NYGB's minimum investment criteria specifically require that "transactions will have the potential for energy savings and/or clean energy generation that will contribute to greenhouse gas reductions in support of New York's energy

policies".[6] In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on:[7]

- Estimated gross lifetime and first-year clean energy generated (MWh);
- Estimated gross clean energy generation installed capacity (MW); and
- Estimated gross lifetime and first-year GHG emission reductions (metric tons).

The estimated gross lifetime and first-year energy and environmental impacts of the credit facilities are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated clean energy generated (MWh)	1,648,300	2,060,400	65,930	82,410
Estimated clean energy generation installed capacity (MW)[8]	56.0	70.0	Not Applicable	
Estimated GHG emission reductions (metric tons)	867,100	1,083,900	34,680	43,360

Planned Market Characterization Baseline & Market Transformation Potential

The Metrics Plan requires that market evaluation will occur when a critical mass of NYGB financing and investment arrangements are put in place. This market evaluation will be conducted on sectors that NYGB has supported and will occur approximately three to five years following initial NYGB capital deployments.[9] Baseline data will be collected in 2018 – 19 for certain key indicators as a comparison point against which to assess market progress in the later studies. Progress indicators are defined below for the short, mid and long-terms.

Short-term progress indicators will identify early activity levels and will be regularly tracked for the duration of the transaction. These include, but are not limited to:

- Size (generation capacity and dollar value) of projects;
- Average and aggregate dollar value of projects;
- Renewable energy generation and GHG emissions reductions;
- Number and type of projects in development and completed; and
- Number and location of projects (by zip code).

Mid and long-term indicators will be expected to show progress through program tracking or market evaluation over time. These include, but are not limited to:

- Favorable financial performance data;
- Favorable technology performance data;
- Increased awareness in clean energy benefits amongst financing entities as a result of favorable technology performance data/experience;
- Investment risk/default rates become increasingly attractive to investors, as a result of positive financial performance data/experience;
- Increased financial market volume for renewable energy projects;
- Decreased project technology costs;
- Scale of clean energy investment increases, due to increased end-use market demand;
- Reduced time to execute clean energy financings; and
- Increased number of financial participants providing similar capital structures.

[6] Case 13-M-0412, "Order Establishing New York Green Bank and Providing Initial Capitalization" issued and effective December 19, 2013 of the Commission, Ordering Clause 6 at pages 24 - 25.
[7] See Metrics Plan, Section 2.0, pages 2 - 6.
[8] Built clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.
[9] See Metrics Plan, Section 3.3 on page 7.

Proposed Method of Outcome/Impact Evaluation (by NYSERDA) & Timeframe

NYSERDA will evaluate the impact these transactions have had on the clean energy finance markets and the energy/environmental benefits delivered by this transaction.

Market evaluation will address the short, mid, and long-term indicators identified above. Methods will include analysis of program data along with interviews and surveys of market participants (project subscribers, financial community) to track information including but not limited to: participation rates, project scale information, interest in solar financing (generally and with regard to Community DG specifically), and influence of NYGB's participation on financial markets. As noted, baseline data will be collected for certain key indicators in 2018 – 19 and later follow-up studies will assess progress against baseline levels. The specific timing of these efforts may be revised based on experience or other factors as the investment evolves.

Impact evaluation will use actual system performance data to understand energy and environmental outcomes. Impact evaluation is expected to include quarterly review and analysis of actual PV portfolio production data collected by DRS. Actual PV portfolio performance will be monitored and documented against expected performance. Impact evaluation will help provide verification of performance, in turn aiding the clean energy finance community in understanding risk in this technology area.

As with all NYGB investments, DRS's projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, be tracked in order to minimize any double-counting activity on a consolidated basis. As set out in the Metrics Plan, evaluation sampling approaches will also be used as a mechanism to estimate overlap and minimize double counting. Attempts will be made to coordinate market and impact evaluation activities for these projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.

TRANSACTION PROFILE

Revised December 2018[1]

Bridge Loan to Support the Deployment of Community Solar Projects

Cypress Creek Renewables, LLC

*In August 2017, NY Green Bank ("**NYGB**") provided a 12-month senior secured bridge loan facility of up to $11.5 million (the "**Bridge Loan**") to Cypress Creek Renewables, LLC ("**CCR**"), a California-based integrated utility-scale solar provider. In December 2017, NYGB increased the Bridge Loan size by $13.5 million and extended the maturity date to December 2019. In December 2018, NYGB increased the Bridge Loan size by a further $20.0 million and extended the maturity date to April 2021. The Bridge Loan proceeds will finance project interconnection payments to utilities across New York State ("**NYS**") for up to 72 community distributed generation ("**Community DG**") solar projects, and will support CCR's development of its NYS solar assets. The overall $45.0 million financing facility is expected to support the deployment of up to 228.0 megawatts ("**MW**") of photovoltaic ("**PV**") solar in NYS, providing residents and businesses with a greater variety of energy choices and, ultimately, lower-cost clean energy options.*

Transaction Description

CCR is developing a portfolio of Community DG solar projects in NYS. Under the New York State Public Service Commission Standardized Interconnection Requirements and Application Process, developers seeking interconnections for their projects are required to make a deposit of 25.0% of the interconnection upgrade estimates followed by full payment 120 business days later. In August 2017, NYGB and CCR closed a Bridge Loan for up to $11.5 million to finance those interconnection deposit payments to NYS utilities, which will be used for as many as 72 Community DG solar projects.[2] In December 2017, the Bridge Loan was increased by $13.5 million and extended until December 2019 to finance a portion of the balance of the estimated interconnection upgrade payments. In December 2018, the Bridge Loan was further increased by $20.0 million to a total $45.0 million facility, and extended until April 2021, to finance interconnection deposit payments and support CCR's development of its NYS solar assets.

This transaction is estimated to support the deployment of as much as 228.0 MW of solar assets in the State which is expected to: (i) provide commercial and residential project subscribers access to reliable, clean, low-cost energy; and (ii) reduce up to 141,500 metric tons of greenhouse gas ("**GHG**") emissions annually and up to 3,540,000 metric tons of GHG emissions over a 25-year project life. As there is an increasingly strong demand for Community DG throughout NYS, capital providers are, and will continue to be, expected to provide financing to enable the deployment of these projects, including through covering the up-front interconnection payments, and products like NYGB's Bridge Loan are expected to ultimately be offered by private capital providers in future.

This Transaction Profile is provided pursuant to the updated "NY Green Bank – Metrics, Reporting & Evaluation Plan, Version 3.0" (the "**Metrics Plan**") developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the "**Commission**") on June 20, 2016.[3] This Transaction Profile contains specific information in connection with the CCR transactions as required by the Metrics Plan.[4]

[1] Refer to the Summary of Changes document for details of updates, available at www.greenbank.ny.gov/Investments/Transaction-Profiles.
[2] Under the revised NYS Standardized Interconnection Requirements, within 60 business days of receiving the Coordinated Electric System Interconnection Review results ("**CESIR**"), interconnection applicants must pay the respective utility 25.0% of the interconnection upgrade estimates.
[3] Case 13-M-0412.
[4] See Section 4.0, page 8 and Schedule 3.

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loan & Investment	Bridge Loan	Up to $45.0 million

Location(s) of Underlying Project(s)

Statewide.[5] CCR's Community DG solar projects are in regions across NYS.

Types of Client & Counterparty Organizations that are Transaction Participants

	Name	Participant Type
Client	CCR	Energy Project Developer
Counterparties (current)	New York State Electric & Gas Corporation National Grid Orange and Rockland Utilities Rochester Gas & Electric Central Hudson Gas & Electric	Electric Utility

Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Solar Project Developers	Project sponsors are often expected to pay for interconnection upgrade expenses with equity funds as they finalize construction financing arrangements. This results in a relatively inefficient use of sponsor equity, limiting project deployment efforts and effectively restricting the amount of Community DG being deployed in NYS.	This transaction encourages a more efficient use of sponsor equity and greater potential project development in NYS by providing leverage that bridges the time period between completion of the CESIR process and finalization of project financing arrangements. NYGB's participation creates an easier pathway forward for developers and enables greater deployment of Community DG along with other distributed generation assets throughout the State.
Capital Market Participants	As a relatively new form of clean energy distribution and therefore lesser known business model, Community DG lacks a large volume of financing precedents and has a limited performance history in NYS. As such, it is difficult for private sector capital providers to assess and price the underlying risk exposures associated with Community DG project investments.	This transaction will generate project and customer performance data, which will help draw new investors and financial institutions into the marketplace by demonstrating that competitive risk-return profiles can be achieved by Community DG enabled business models.
Community DG Subscribers	Due to project siting, property ownership, and consumer preference issues, on-site solar project installations may not be viable for a number NYS homeowners, renters, and businesses. This currently limits the number of solar projects with the potential of getting done to those with perfectly sited homes or businesses.	This transaction supports the deployment of Community DG solar projects, which provide those who are not otherwise able to install solar energy generation systems on their property (e.g., homeowners whose rooftops cannot support solar systems, renters and those who cannot afford solar systems, etc.), with voluntary access to clean, low-cost energy, regardless of their home or business location.

[5] Defined as projects located in four or more regions of the State.

Technologies Involved

Technology	Measures
Renewable Energy	Solar photovoltaic systems

Metrics & Evaluation Plan

Planned Energy & Environmental Metrics

NYGB's minimum investment criteria specifically require that "transactions will have the potential for energy savings and/or clean energy generation that will contribute to GHG reductions in support of New York's energy policies".[6] In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on:[7]

- Estimated gross lifetime and first-year clean energy generated (MWh);
- Estimated gross clean energy generation installed capacity (MW); and
- Estimated gross lifetime and first-year GHG emission reductions (metric tons).

The estimated gross lifetime and first-year energy and environmental impacts of the Bridge Loan are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated clean energy generated (MWh)	5,072,000	6,725,000	202,900	269,000
Estimated clean energy generation installed capacity (MW)[8]	172.0	228.0	Not Applicable	
Estimated GHG emission reductions (metric tons)	2,670,000	3,537,000	106,700	141,500

Planned Market Characterization Baseline & Market Transformation Potential

The Metrics Plan requires that market evaluation will occur when a critical mass of NYGB financing and investment arrangements are put in place. Market evaluation activities commenced in 2018 on sectors that NYGB has supported since inception, consistent with the requirement for such assessments approximately three to five years following initial NYGB capital deployments.[9] Baseline data is being collected for the solar sector in 2018 and will be updated in going forward to include indicators specific to this transaction. Baseline data on indicators will be used as a comparison point against which to assess market progress in the later studies. Progress indicators are defined below for the short, mid and long-terms.

Output indicators will identify early activity levels and will be regularly tracked for the duration of the transaction. These include, but are not limited to:

- Size (generation capacity and dollar value) of acquired projects;
- Average and aggregate dollar value of acquired projects;
- Number and type of acquired projects in development and completed; and
- Number and location of acquired projects (by zip code).

Outcome indicators will be expected to show progress through program tracking or market evaluation over time. These include, but are not limited to:

- Increased awareness in benefits among financing entities as a result of favorable technology performance data;

[6] Case 13-M-0412, "Order Establishing New York Green Bank and Providing Initial Capitalization" issued and effective December 19, 2013 of the Commission, Ordering Clause 6 at pages 24 - 25.
[7] See Metrics Plan, Section 2.0, pages 2 - 6.
[8] Installed clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.
[9] See Metrics Plan, Section 3.3 at page 7.

- Favorable financial performance data;
- Favorable technology performance data;
- Market volume of CCR projects increases;
- Investments become increasingly attractive to investors, based on positive financial performance data and acceptable risk/default rates;
- Increased financial market volume for clean energy projects;
- Decreased project technology costs;
- Scale of clean energy investment increases, due to increased end-use market demand;
- Reduced time to execute clean energy financings; and
- Increased number of financial participants providing similar capital structures.

Proposed Method of Outcome/Impact Evaluation (by NYSERDA) & Timeframe

NYSERDA will evaluate the impact this transaction has had on the clean energy finance markets and the energy/environmental benefits delivered by this transaction.

Market evaluation will address the outcome indicators identified above. Methods will include analysis of program data along with interviews and surveys of market participants (project subscribers, financial community) to track information including but not limited to: participation rates, project scale information, interest in solar financing (generally and with regard to Community DG specifically), and influence of NYGB's participation on financial markets. As noted, baseline data is being collected on most key indicators starting in 2018 and later follow-up studies will assess progress against baseline levels. The specific timing of these efforts may be revised based on experience or other factors as the investment evolves.

Impact evaluation will assess the performance of the projects funded under the Bridge Loan to verify that arrays are generating clean energy benefits within the estimated ranges set out in this Transaction Profile.

As with all NYGB investments, CCR projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, be tracked in order to minimize any double-counting activity on a consolidated basis. As set out in the Metrics Plan, evaluation sampling approaches will also be used as a mechanism to estimate overlap and minimize double counting. Attempts will be made to coordinate market and impact evaluation activities for these projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.