



**NY Green Bank**  
A Division of NYSERDA

# NY Green Bank

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## Metrics, Reporting & Evaluation

Quarterly Report No. 8  
(Through June 30, 2016)

Case 13-M-0412

August 15, 2016

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# 1 Performance at a Glance

## Stimulating New Clean Energy Proposals in the State

NY Green Bank (“**NYGB**”) received over **\$1.4 billion** in investment proposals from inception through June 30, 2016, representing total proposed clean energy investment in New York State exceeding **\$5.1 billion**.

## Strong Active Pipeline

The Active Pipeline of potential investments proceeding to close was **\$524.3 million** as of June 30, 2016.<sup>1</sup>

## Portfolio Driving Material Clean Energy Investments Across NYS

NYGB's investment portfolio continues to grow and generate hundreds of millions of dollars of clean energy investment. As of June 30, 2016, NYGB's investments supported clean energy projects with a total project cost of **\$518.3 million** in aggregate, based on an overall NYGB portfolio size of **\$121.0 million**.

## Mobilizing Private Capital

As of June 30, 2016, NYGB's portfolio of investments represented an expected leverage ratio of total project costs to NYGB funds of **~4:1**, 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 expected leverage ratio is **~9:1**.

## Revenue Growth Paving the Way to Self-Sufficiency

Continued revenue growth – over **\$4.4 million** in revenues has been generated since NYGB's inception through June 30, 2016.

## Contributing to CEF Objectives, REV and the CES

Current portfolio estimated gross lifetime GHG reductions as of June 30, 2016 of up to **2.9 million metric tons**, equivalent to removing more than **37,000 cars** from the road for a period of **17 years**.

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<sup>1</sup> 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 June 30, 2016, the \$524.3 million in Active Pipeline does not include the \$121.0 million in closed transactions that comprises NYGB's investment portfolio.

## 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<sup>2</sup> (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, respectively relating to:

- (a) Transactions that have closed, which collectively comprise NYGB’s investments – the “**Portfolio**”; 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 processes.

NYGB closed five new investments during the quarter ending June 30, 2016, adding \$66.5 million to NYGB’s growing investment portfolio. NYGB’s new transactions were publicly announced - four by Governor Andrew M. Cuomo on May 12, 2016<sup>3</sup> and the remaining one by NYGB on June 27, 2016.<sup>4</sup> These transactions are discussed in Section 3.2.

NYGB’s overall transaction status and Active Pipeline are summarized in Figure 1,<sup>5</sup> showing that since inception through June 30, 2016:

- (a) \$1.4 billion of proposals have been received and evaluated by NYGB’s Scoring Committee;
- (b) \$1.3 billion of proposals have passed Scoring Committee evaluation – representing potential investments that meet NYGB’s mandate and proposal evaluation criteria;
- (c) \$464.4 million of proposals have received Greenlight Committee recommendation for advancement;
- (d) \$168.4 million of proposals have been vetted by the IRC and approved by NYSERDA’s President & CEO; and
- (e) \$121.0 million of transactions have been closed - comprising NYGB’s Portfolio - mobilizing public and private investments to support \$518.3 million in total project costs for new clean energy deployment in the State.

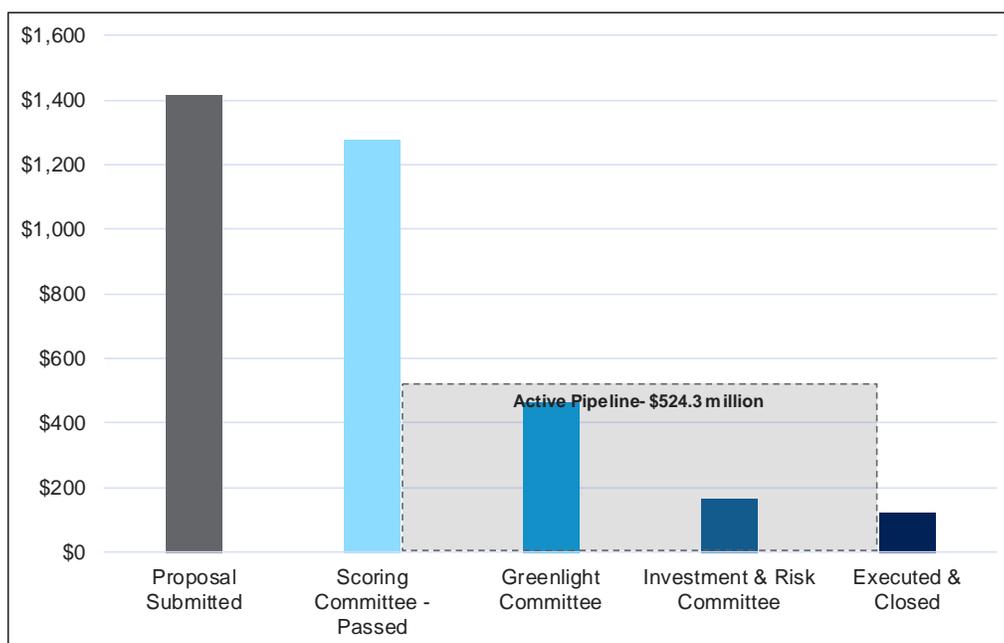
<sup>2</sup> Case 13-M-0412, “NY Green Bank – Metrics, Reporting & Evaluation Plan”, Version 3.0, dated June 20, 2016.

<sup>3</sup> The press release, entitled “Governor Cuomo Announces Four New NY Green Bank Transactions to Generate Up to \$220 Million in Clean Energy Projects” is available on NYGB’s website at [www.greenbank.ny.gov/News/In-The-News/2016-05-12-Governor-Cuomo-Announces-Four-New-NY-Green-Bank-Transactions](http://www.greenbank.ny.gov/News/In-The-News/2016-05-12-Governor-Cuomo-Announces-Four-New-NY-Green-Bank-Transactions).

<sup>4</sup> The press release, entitled “NY Green Bank Announces Closing of \$25 Million Construction Loan to Accelerate Residential Solar Installations Across the State” is also available on NYGB’s website at [www.greenbank.ny.gov/News/In-The-News/2016-06-27-NY-Green-Bank-Announces-Closing-of-25-Million-Construction-Loan](http://www.greenbank.ny.gov/News/In-The-News/2016-06-27-NY-Green-Bank-Announces-Closing-of-25-Million-Construction-Loan).

<sup>5</sup> Note that all these amounts change over time as proposals and transactions evolve.

Figure 1. Transaction Status & Active Pipeline (\$ Millions)



Also as shown in [Figure 1](#), NYGB currently has an Active Pipeline of \$524.3 million.

## 3.2 Investment Portfolio

### 3.2.1 Highlights

In the period covered by this Report, NYGB closed five transactions, respectively sponsored by BQ Energy, Solar Mosaic, Sealed and Sunrun.<sup>6</sup> Each transaction contributes to the primary CEF outcomes of GHG emissions reductions, customer bill savings, energy efficiency, clean energy generation and mobilization of private sector capital.<sup>7</sup> In turn, the CEF objectives support the NYS Clean Energy Standard (“**CES**”) goal of 50% energy generation from renewable sources, and the State Energy Plan (“**SEP**”) goal of 23% reduction in energy consumption by buildings from 2012 levels, which together further the SEP goal of 40% reduction in GHG emissions from 1990 levels by 2030.

### 3.2.2 New Investments

#### **BQ Energy (Commercial Solar Installation)**

- *Reduces up to 23,000 metric tons of GHG emissions over the life of the underlying project (for the first of eight projects)*
- *Generates up to 44,000 MWh of renewable energy over the life of the underlying project (for the first of eight projects)*
- *Increases renewable energy installed generation capacity by up to 1.4 MW (for the first of eight projects)*

NYGB made an initial commitment of \$1.5 million to BQ Energy to finance the installation of ground-mounted solar located at a landfill in Patterson, New York. NYGB’s commitment is the first in a series of

<sup>6</sup> Two separate transactions were closed with Sunrun.

<sup>7</sup> As set out in the CEF Order (Cases 14-M-0094 et al.) issued and effective on January 21, 2016, page 40.

anticipated commitments that will fund construction of a portfolio of up to eight distinct solar installations at a total project cost of up to \$30.0 million. BQ Energy is a Poughkeepsie-based renewable energy project developer that specializes in solar development on landfills, which are often unsuitable for other types of development.

NYGB and BQ Energy have established a standardized approach to construction and post-construction finance that will broaden the availability of solar energy to commercial and industrial businesses seeking to purchase solar energy via long term contracts that have had limited access to financing due to lack of scale and/or a lack of public credit ratings. This transaction and the methodologies employed are broadly applicable across the fragmented commercial and industrial solar market.

#### ***Guggenheim, DZ Bank & Solar Mosaic (Residential Solar Loan Finance)***

- *Reduces up to 144,000 metric tons of GHG emissions over the life of the underlying projects<sup>8</sup>*
- *Generates up to 270,000 MWh of renewable energy over the life of the underlying projects*
- *Increases renewable energy installed generation capacity by up to 9.0 MW*

NYGB committed \$10.0 million alongside DZ Bank of Germany in an up to \$200.0 million credit facility arranged by Guggenheim Securities that will provide financing to Solar Mosaic. NYGB's participation in the credit facility increased the amount of capital available to Solar Mosaic and will result in up to \$40.0 million to finance up to 1,200 residential rooftop systems in New York State. Solar Mosaic, a national specialty finance company, offers a no-money-down solar financing option for homeowners such that homeowners can directly own their rooftop solar energy generation system and receive full financing for the cost of such systems.

The transaction will result in the aggregation of a bundled pool of loans used to finance rooftop systems that will then be refinanced on a long-term basis in the institutional securitization markets. To access the most efficiently priced sources of institutional capital requires substantial scale. Achieving portfolio scale requires large credit facilities such as this, providing aggregation capital. Given that the bank market for such credit facilities remains limited, NYGB's participation enables larger aggregation facilities than would otherwise be available, resulting in securitized market refinancings at a scale greater than might otherwise be achieved. Greater scale means greater investor interest, which will ultimately result in more attractive debt pricing that will benefit New Yorkers via more attractively priced loan options for homeowners seeking to purchase and finance rooftop solar energy generation systems.

#### ***Sealed (Residential Software & Energy Efficiency Finance)***

- *Reduces up to 34,000 metric tons of GHG emissions over the life of the underlying projects*
- *Saves up to 4,400 MWh from efficiency measures (electric)*
- *Saves up to 0.48 million MMBtu from efficiency measures (fuel)*

NYGB provided a \$5.0 million credit facility to Sealed Inc. that will support financing for up to \$7.5 million in energy efficiency upgrades for up to 400 homeowners in New York. Sealed, a New York City-based energy software and service company that provides home efficiency upgrades, offers a savings-based financing solution in funding residential upgrades such as new insulation, sealing air leaks, and new boilers and furnaces. The Sealed financing product gives an alternative to homeowners that prefer a savings-based approach rather than a conventional loan approach.

NYGB's credit facility will help establish a track record for Sealed's financing approach and provide an opportunity to Sealed, and potential future investors, to determine the scalability of the market. Upon creation of an initial portfolio, private capital providers are expected to engage more readily in future financing discussions. The credit facility provided by NYGB is replicable for other participants in the clean

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<sup>8</sup> NYGB's practice in calculating and reporting energy and environmental benefits expected from syndicate transactions is to report only those benefits referable to developments within New York State.

energy market in New York State, specifically smaller developers with early marketplace success but limited scale to date.

### **Sunrun (Construction & Post-Construction Residential Solar PPA Finance)**

- *Reduces up to 600,000 metric tons of GHG emissions over the life of the underlying projects*
- *Generates 1,100,000 MWh of renewable energy over the life of the underlying projects*
- *Increases renewable energy installed generation capacity by up to 39.0 MW*

NYGB committed \$25.0 million as part of a \$245.0 million construction loan facility<sup>9</sup> that will be used to fund construction costs for residential rooftop systems. In addition, NYGB committed \$25.0 million as a portion of a separate \$340.0 million consortium which will scale up Sunrun's nationwide deployment. Together these commitments will allow Sunrun to expand operations in NYS by installing solar photovoltaic ("PV") systems at more than 5,000 homes in the State. Sunrun, the largest dedicated solar company in the United States, provides affordable clean energy for little to no upfront cost to homeowners by designing, installing, financing, insuring, monitoring and maintaining solar panels on their roofs in exchange for a predictable price specified in a long-term (i.e., 20 year or more) contract.

The combination of these two transactions will result in the aggregation of bundled pools of solar systems that will then be refinanced on a long-term basis in the institutional securitization markets. To access the most efficiently priced sources of institutional capital requires substantial scale. Achieving portfolio scale requires large credit facilities such as this providing aggregation capital. Given that the bank market for such credit facilities remains limited, NYGB's participation enables larger aggregation facilities than would otherwise be available, resulting in securitized market refinancings at a scale greater than might otherwise be achieved. Greater scale means greater investor interest, which will ultimately result in more attractive debt pricing that will benefit New Yorkers via more attractively priced contracts under which power is purchased.

Further details on all NYGB's investments are available in the Transaction Profiles publicly available on NYGB's website at [www.greenbank.ny.gov/Investments/Transaction-Profiles](http://www.greenbank.ny.gov/Investments/Transaction-Profiles), and the Transaction Profiles for the investments described above are also included in the Schedule to this Report.

### **3.3 Active Pipeline**

Demand for NYGB investments and participation in transactions is evidenced by proposals that have been submitted to NYGB in response to its open solicitation for investment proposals (the "**Investment RFP**").<sup>10</sup> Through June 30, 2016, proposals requesting \$1.4 billion of NYGB capital have been received, in connection with total proposed clean energy investments in New York State of an estimated \$5.1 billion. NYGB's Active Pipeline at the end of the period to which this Report relates is \$524.3 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.

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<sup>9</sup> As of July 2016, this overall facility amount has increased to \$250.0 million, reflecting the increased commitment of another lender of the credit facilities to Sunrun.

<sup>10</sup> Clean Energy Financing Arrangements – Request for Proposals (RFP) No. 1, available at [www.greenbank.ny.gov/Partnering-With-Us/Propose-an-Investment](http://www.greenbank.ny.gov/Partnering-With-Us/Propose-an-Investment).

Figure 2. Active Pipeline by Technology

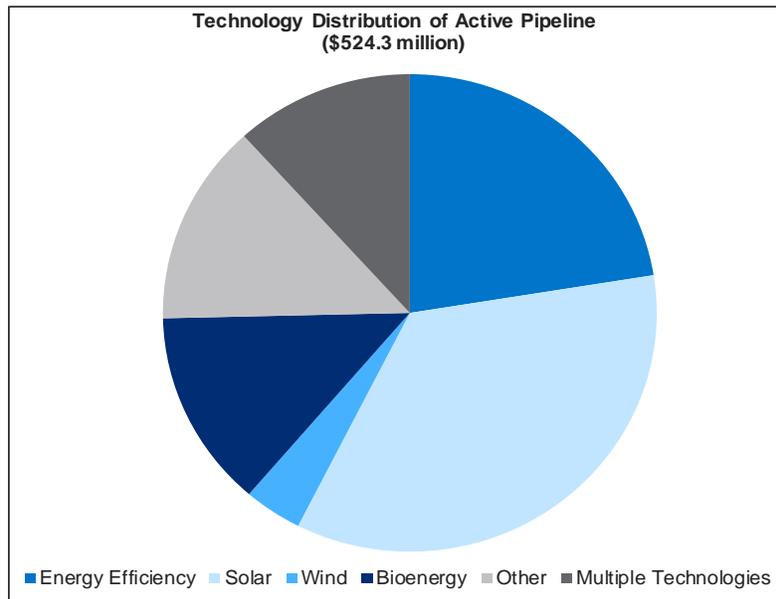


Figure 3. Active Pipeline by End-Use Customer Segment

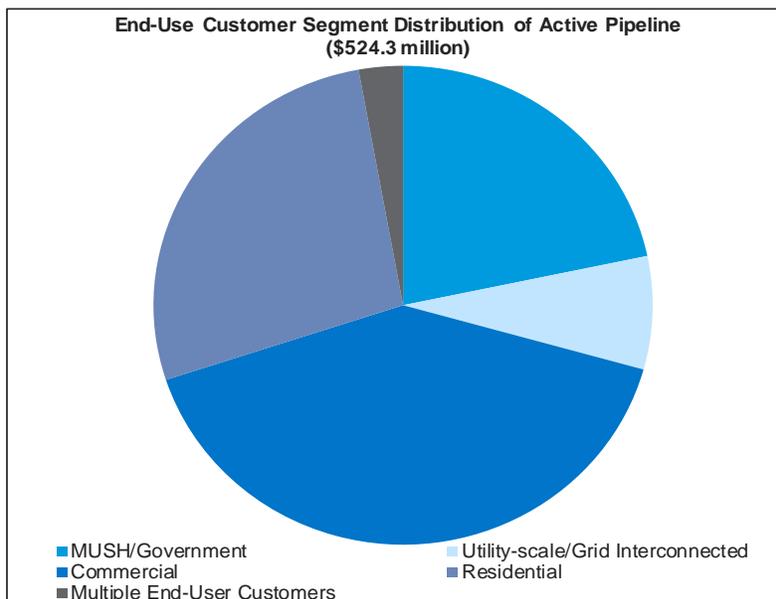
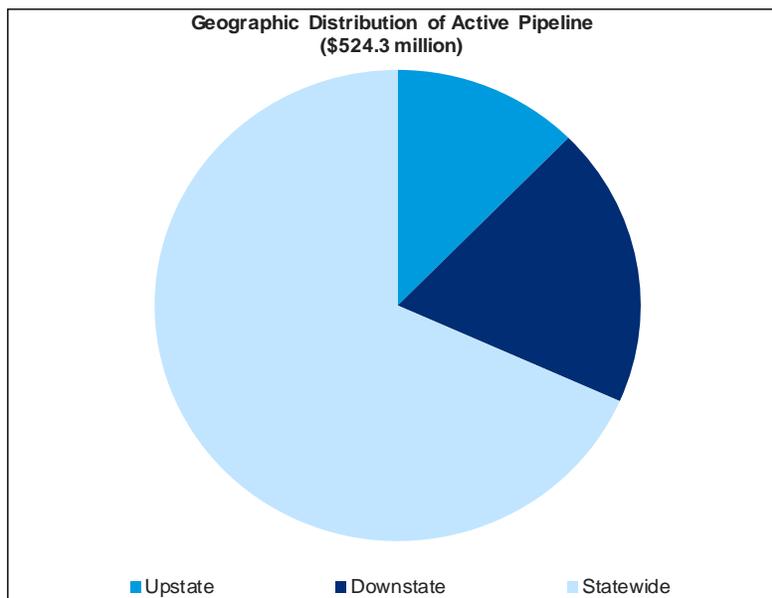


Figure 4. Active Pipeline by Geographic Distribution



### 3.4 Operational & Risk Matters

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

- (a) **Issuance of Requests for Information for Specific Energy Efficiency & Renewable Development Opportunities:** Based on the responses to the Investment RFP, and NYGB's work to evaluate all proposed investments received to date, NYGB identified two potential and specific opportunities to accelerate market transformation via the creation and introduction of targeted financial products in the commercial real estate/multi-family and corporate and industrial areas. In both cases, the market is potentially large, but currently suffers from fragmentation, lack of standardization and lack of scale. To determine the most effective specifications for potential new products, NYGB issued two Requests for Information ("RFI") in June 2016, which directly solicit input from, and invite engagement with, industry participants, capital providers and potential customers. After evaluating and incorporating the input it receives, NYGB will issue RFPs, including standard term sheets for new transactions, that will be offered to proposers that meet specified conditions.

The first solicitation is aimed at enabling commercial real estate and multi-family property owners to finance the installation of solar PV systems and/or energy efficiency improvements where they seek to directly own such improvements rather than entering into an arrangement with a third-party owner of the assets. Property owners and market participants (such as developers, energy service companies and other contractors) serving such market are fragmented and do not benefit from a standardized, efficient financing approach that can be incorporated with or without a senior mortgage being in place. NYGB seeks to accelerate financeability and deployment in this market by providing the terms under which NYGB would be prepared to consider offering financing. By signaling to private sector participants that installations meeting NYGB's standard terms and conditions will have access to NYGB's product, the RFP that will follow the RFI is expected to increase transaction volumes resulting in a standardized portfolio of financings at scale, which will attract further private sector investment.

The second solicitation aims to enhance access to affordable finance by providers of electricity produced by small ground-mounted solar PV installations where the power is sold to corporate and industrial off-takers that do not benefit from a public credit rating. Although many unrated corporate and industrial customers seek access to clean solar power, the market is constrained by fragmentation, lack of standardized documentation and lack of efficient and standardized power off-taker credit underwriting methodologies. NYGB seeks to accelerate financeability and deployment in this market by providing the terms under which NYGB would be prepared to consider offering financing. By signaling to the private sector that developers meeting NYGB's standard terms and conditions will have access to NYGB's product, the RFP that will follow the RFI is expected to increase transaction volumes resulting in a standardized portfolio of financings at scale, which will in turn attract further private sector investment.

- (b) Annual Business Plan: Completed NYGB's Business Plan for the 2016 – 2017 plan year (the “**Plan**”). The Plan, filed with the Commission on June 27, 2016, represents a new format consistent with NYGB's transition from its start-up phase. In addition to providing details of NYGB's achievements in the prior plan year, the Plan focuses on tangible goals and deliverables, tying directly back to NYGB's mission and investment criteria, together with corresponding key performance indicators. Plan deliverables also tie specifically to the Metrics Plan and are addressed in Section 5 of this Report.
- (c) Completed “Metrics 3.0” Revision & Stakeholder Process: As required by the CEF Order, NYGB completed activities related to the revision of the Metrics Plan. To create maximum opportunity for interested parties to provide input into the revised Metrics Plan, NYGB organized and hosted a number of focus group sessions in Albany and New York City during April and May 2016. These sessions involved outreach to interested stakeholders, other interested parties and DPS staff. All comments and inputs were collated and reviewed by theme, and considered in preparing the revised Metrics Plan. The revised version of the Metrics Plan was filed on June 20, 2016. To provide transparency to all parties, NYGB prepared a separate document (the Stakeholder Comment & Disposition Document), filed contemporaneously with the revised Metrics Plan. Both are available at [www.greenbank.ny.gov/About/Public-Filings](http://www.greenbank.ny.gov/About/Public-Filings).
- (d) Reinforced Risk Framework & Processes: Over the past quarter, NYGB has continued to institute thorough investment monitoring processes including monthly, quarterly and annual transaction reviews to assess performance; quarterly reviews that compare operating and financial results and investment value with expectations; and quarterly portfolio and pipeline reviews with the IRC. NYGB assesses and rates the risk associated with each transaction individually and monitors these risks on an individual and portfolio basis. NYGB evaluates the impact of prospective investments on the overall portfolio risk, maintaining overall risk of loss within defined limits.
- (e) Key NYGB Infrastructure - Operational & Risk Platforms: Following separate RFP processes, in June 2016, NYGB commenced negotiations with its preferred providers of two core elements of fund infrastructure, Client Relationship Management (“**CRM**”)/transaction pipeline and portfolio management and fund administration/loan servicing. In each RFP, NYGB indicated that it sought a robust, secure platform with industry leading technology, efficient and effective processes, the ability to customize systems to meet NYGB's needs, as well as a highly competent implementation and support team assigned to the NYGB account. Negotiations were ongoing at the end of the quarter for fund administration and servicing, while a contract was executed with the preferred provider of the CRM, pipeline and portfolio management platform in June 2016, with efforts transitioning to implementation planning and system design. Announcements are expected to be made when all contractual discussions have successfully concluded and milestones are reached in the implementation of these key infrastructure platforms.
- (f) Public Reporting & Metrics: Filing with the Commission, on May 16, 2016, the Quarterly Report for the period ending March 31, 2016 and also (on June 29, 2016) Annual Financial Metrics Report No. 2 for the fiscal year April 1, 2015 – March 31, 2016. Both reports are available at [www.greenbank.ny.gov/About/Public-Filings](http://www.greenbank.ny.gov/About/Public-Filings).

(g) Continuing Stakeholder Outreach & Communications: Highlights of specific outreach initiatives include:

- i. Multiple stakeholder meetings held in connection with the revised Metrics Plan. Meetings were held in both Albany and New York City in April and May. Three meetings were specifically targeted to those stakeholders that had publicly filed comments about NYGB in connection with various Commission proceedings (including with respect to NYGB establishment and capitalization and the CEF), with the final meeting open to the public;
- ii. Participation in 19 events, including the [NYSERDA Low-Income Forum on Energy \(LIFE\) Conference](#), a National Grid webinar examining financing opportunities for municipal streetlight conversions, and the Opening Ceremony of NY Energy Week. NYGB also kicked off its second Statewide Meeting Series with events in the Mohawk Valley (Utica) and Western New York (Buffalo) Regions, both in June 2016; and
- iii. Organization and implementation of broad outreach in connection with the launch of the two product RFIs described in item (a) above and the press releases announcing NYGB's new investments in the period to which this Report relates.

(h) Advisory Committee: An Advisory Committee meeting was held on April 19, 2016. Information regarding NYGB's Advisory Committee – including its membership and charter - is accessible on NYGB's website at [www.greenbank.ny.gov/About/Advisory-Committee](http://www.greenbank.ny.gov/About/Advisory-Committee). Advisory Committee meetings occur at least semi-annually.

## 4 Quarterly Metrics

Required metrics for the period April 1, through June 30, 2016 are set out in [Table 1](#)<sup>11</sup> below.

Table 1. Quarterly Metrics

Quarterly Metric	Prior Quarter	Current Quarter
<b>Capital Position</b>		
▪ Authorized Capital (\$)	\$1.0 billion	\$1.0 billion
▪ Authorized Administrative Expenses (\$)	\$17.5 million	\$17.5 million
▪ Authorized Evaluation Expenses (\$)	\$4.0 million	\$4.0 million
▪ Available Capital (\$)	\$201.7 million	\$159.0 million
<b>Operational Matters</b>		
▪ Cumulative Revenues <sup>12</sup> (\$)	\$2.9 million	\$4.4 million
▪ Cumulative Operating Expenses (\$)	\$9.7 million	\$11.0 million
▪ Direct Operating Expenses (\$)	\$5.3 million	\$6.0 million
▪ Allocated Expenses (\$)	\$4.4 million	\$5.0 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

<sup>11</sup> Note that the energy and environmental metrics included in this Report reflect rounding for ease of representation.

<sup>12</sup> In this Report, NYGB revenue figures do not reflect quarterly fair market value adjustments (either increases or decreases) relating to NYGB capital held in U.S. Treasury securities. These valuation adjustments are included in NYGB's quarterly and year-end financial statements based on generally accepted accounting principles. However, given that NYGB's unused capital balances from time to time consist of U.S. Treasury securities with laddered maturities, and those securities are largely held to maturity or liquidated closer to maturity to meet cash needs, fair market valuation adjustments are anticipated to be largely temporary and so are omitted from Quarterly Metrics Reports to provide a clearer indication of NYGB's revenues. For the period ending June 30, 2016, NYGB's cumulative fair market valuation adjustment was an increase of ~\$315,000.

Quarterly Metric	Prior Quarter	Current Quarter
<b>Investment Portfolio</b>		
▪ Committed Funds (Cumulative) (\$)	\$44.5 million	\$68.2 million
▪ Deployed Funds (Cumulative) <sup>13</sup> (\$)	\$10.0 million	\$52.8 million
▪ Current Portfolio (\$)	\$54.5 million	\$121.0 million
▪ Overall Investments to Date (\$)	\$54.5 million	\$121.0 million
▪ Total Project Costs (Cumulative) (\$)	\$328.0 million	\$518.3 million
▪ Mobilization Ratio	6:1	4:1
▪ Commitment Ratio (%)	25.0%	55.0%
<b>Portfolio Concentrations<sup>14</sup> (%)</b>		
	53.0% Renewable Energy	75.0% Renewable Energy
	47.0% Energy Efficiency	25.0% Energy Efficiency
<b>Number &amp; Type of NYGB Investments</b>		
	2 – Renewable Energy	6 – Renewable Energy
	3 – Energy Efficiency	4 – Energy Efficiency
<b>Number &amp; General Type of NYGB Counterparties<sup>15</sup></b>		
	8 – Local Development Corporation, Global Corporate & Investment Banks, Commercial/Regional Banks, Specialty Finance Company, Energy Project Developers	24 – Local Development Corporation, Global Corporate & Investment Banks, Commercial/Regional Banks, Specialty Finance Company, Energy Project Developers
<b>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 &amp; Deployed Funds</b>		
	Estimated Gross Lifetime Energy Saved by Fuel Type (Energy Efficiency): 960,000 – 1.0 million MWh; and 8.6 – 9.4 million MMBtu	Estimated Gross Lifetime Energy Saved by Fuel Type (Energy Efficiency): 960,000 – 1.0 million MWh; and 9.0 – 9.9 million MMBtu
	Estimated Gross Lifetime Clean Energy Generated: 1.1 – 2.0 million MWh	Estimated Gross Lifetime Clean Energy Generated: 1.8 – 3.4 million MWh
<b>Estimated Gross First Year<sup>16</sup> Energy Saved by Fuel Type from Energy Efficiency Projects (MWh/MMBtu) and/or Estimated Gross First Year Clean Energy Generated (MWh) for Committed Funds &amp; Deployed Funds</b>		
	Estimated Gross First Year Energy Saved by Fuel Type (Energy Efficiency): 77,000 – 82,000 MWh; and 760,000 – 830,000 MMBtu	Estimated Gross First Year Energy Saved by Fuel Type (Energy Efficiency): 78,000 – 82,000 MWh; and 780,000 – 850,000 MMBtu
	Estimated Gross First Year Clean Energy Generated: 61,000 – 99,000 MWh	Estimated Gross First Year Clean Energy Generated: 88,000 – 160,000 MWh
<b>Estimated Gross Lifetime Primary Energy Saved from CHP (Btu) for Committed Funds &amp; Deployed Funds</b>		
	Not Applicable	Not Applicable
<b>Estimated Gross First Year Primary Energy Saved from CHP (Btu) for Committed Funds &amp; Deployed Funds</b>		
	Not Applicable	Not Applicable

<sup>13</sup> Deployed Funds (Cumulative) as presented in Table 1 is net of all capital repaid in the relevant period.

<sup>14</sup> 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.

<sup>15</sup> 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).

<sup>16</sup> First year gross energy savings refer to the first year of estimated gross energy savings once a measure is installed and as such savings will not necessarily correspond to the first year of the investment term. The majority of NYGB's investments have a two to three-year development cycle in which projects are originated, installed and placed into commercial operation.

Quarterly Metric	Prior Quarter	Current Quarter
▪ Estimated Gross Clean Energy Generation Installed Capacity (MW), if applicable, for Committed Funds & Deployed Funds	54.0 – 79.0 MW	77.0 – 130.0 MW
▪ Estimated Gross Lifetime GHG Emission Reductions (metric tons) <sup>17</sup> for Committed Funds & Deployed Funds	1.6 million – 2.1 million metric tons	2.0 million – 2.9 million metric tons
<b>Investment Pipeline</b>		
▪ Active Pipeline (In the Quarter) (\$)	\$501.3 million	\$524.3 million
<b>Investment Process</b>		
▪ Proposals Received – Value (Cumulative) (\$)	\$1.2 billion	\$1.4 billion
▪ Proposals Received - Total Project Cost (Cumulative) (\$)	\$4.2 billion	\$5.1 billion
▪ Approvals - Scoring Committee (Cumulative) (\$)	\$1.1 billion	\$1.3 billion
▪ Approvals - Greenlight Committee (Cumulative) (\$)	\$402.9 million	\$464.4 million
▪ Approvals - IRC (Cumulative) (\$)	\$136.9 million	\$168.4 million

## 5 Progress Against Plan Deliverables

In its annual Business Plan, filed on June 27, 2016, NYGB identified specific deliverables that collectively mark its progress in implementing key initiatives over the course of the 2016 - 2017 Plan year (the “**Plan Deliverables**”).

Progress against the Plan Deliverables is required to be addressed in NYGB’s quarterly metrics reports, filed pursuant to the Metrics Plan, together with a brief narrative (as appropriate) of status and an explanation of any material variances relative to expectations.

NYGB’s performance against the deliverables for 2016 – 2017 is summarized in Table 2 below.

*Table 2: Status of Plan Deliverables (2016 – 2017)*

Category	Deliverable	Status in Quarter Ending June 30, 2016
<b>Strong Active Pipeline</b>		
▪ Active Pipeline	▪ Maintain an Active Pipeline of at least \$300.0 million.	▪ Achieved for this Quarter: Active Pipeline \$524.3 million
▪ CRM, Transaction Pipeline & Portfolio Management Infrastructure	▪ Implementation of third-party platform, full “go-live”.	▪ Ongoing & On Track: Proposals in response to publicly-issued RFP were due on March 29, 2016. In April 2016, evaluation of all responses received occurred with contract negotiations commencing shortly thereafter with the preferred provider. Contract signed with the preferred provider on June 15, 2016. Implementation planning and system blueprint and platform design commenced in June 2016.

<sup>17</sup> NYSERDA utilizes a 1,160 lbs/MWh conversion factor to estimate GHG emissions reductions for electric generation and energy efficiency savings across all components of the CEF.

Category	Deliverable	Status in Quarter Ending June 30, 2016
<b>Portfolio Driving Material Clean Energy Investments Across NYS</b>		
<ul style="list-style-type: none"> <li>▪ <b>Committed Funds</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Commit \$200.0 million to NYGB investments per year, equating to an average of \$50.0 million in closed transactions per quarter.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Achieved for this Quarter: \$66.5 million of closed transactions in the quarter</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Financing Commercial Real Estate &amp; Multi-Family Solar System &amp;/or Energy Efficiency Purchases</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Publicly issue RFP.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing &amp; On Track: RFI publicly issued on June 9, 2016 with responses due by July 29, 2016. Currently preparing detailed RFP for launch, taking into consideration all input received through the RFI process, in addition to other relevant market data based on NYGB's market interactions and experiences since inception.</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Financing Ground-Mounted Solar Systems Targeting Corporate &amp; Industrial End-Users</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Publicly issue RFP.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing &amp; On Track: RFI issued on June 24, 2016, with responses due by August 5, 2016. Currently preparing detailed RFP for launch, taking into consideration all input received through the RFI process, in addition to other relevant market data based on NYGB's market interactions and experiences since inception.</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Fund Administration &amp; Loan/Investment Servicing Infrastructure</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of third-party platform, full "go-live".</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing &amp; On Track: Proposals in response to publicly-issued RFP were due on March 28, 2016. In April 2016, evaluation of all responses received occurred and in June 2016, NYGB commenced negotiations with its preferred provider.</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Available Capital</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ Satisfy the Cash Release Trigger pursuant to the 2015 Capitalization Order through achieving a portfolio size of \$150.0 million.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ongoing &amp; On Track: Portfolio size at June 30, 2016 was \$121.0 million.</li> </ul>
<b>Mobilizing Private Capital</b>		
<ul style="list-style-type: none"> <li>▪ <b>Mobilization Ratio</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ 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.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Achieved for this Quarter: Current quarter Mobilization Ratio is 4:1.</li> </ul>

## **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.

April 2016

## Driving Standardization in the New York Solar Market

### BQ Energy

*BQ Energy (“BQ”) is a renewable energy project developer specializing in landfill and brownfield site redevelopment. BQ and NY Green Bank (“NYGB”) have closed on the first transaction of an anticipated \$30.0 million portfolio that will utilize the same standardized approach for upcoming projects. In this arrangement, BQ will receive a construction loan to finance a 1.4 megawatt (“MW”) solar project located on a closed municipal landfill located in Patterson, NY. Upon completion, the construction loan will be refinanced with a term loan provided by NYGB. Solar power from this project will be used by a Hudson Valley institution to power its facilities using New York State’s remote net metering.*

### Part I: Transaction Description

BQ is a Poughkeepsie, New York-based renewable energy project developer specializing in landfill and brownfield site redevelopment. As the first project in what is expected to be a \$30.0 million portfolio, NYGB’s construction and term loan facility (the “**Credit Facility**”) enables BQ to complete the 1.4 MW Patterson project, (“the “**Project**”), to be constructed on a closed municipal landfill located in, and owned by, the Town of Patterson, NY. When completed, the Project will generate revenue by selling remote net metering energy credits to a large institutional power consumer, providing significant energy cost reduction, with the clean power distributed on New York State Electric & Gas grid.

The Project is the first of several similar solar projects in BQ’s pipeline that NYGB anticipates financing as part of a larger portfolio. BQ expects the majority of projects to be located on landfill and brownfield sites in Western and Central NY, Hudson Valley, and Long Island, providing non-profit organizations, municipalities, universities, schools, hospitals (“**MUSH**”), and utilities with clean, reliable power. NYGB’s participation in the Project – and in similar developments in the proposed portfolio arrangement – will help expand financing opportunities for smaller (<5 MW) solar systems by fostering standardization in several respects. First, this portfolio of projects will use the same approach – including BQ’s retaining the same balance of plant contractor for the majority of the portfolio projects – along with a streamlined, uniform approach to developing contracts and using the same equipment in each portfolio project. Second, the underwriting process will be standardized, specifically as relates to remote net metering, which can be replicated for other transactions, including those with counterparties that do not have a rating provided by a rating agency.

This Transaction Profile is provided pursuant to the “NY Green Bank – Metrics, Reporting & Evaluation Plan” (the “**Metrics Plan**”) developed in collaboration with the New York State (“**NYS**”) Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on February 22, 2016.<sup>1</sup> This Transaction Profile contains specific information in connection with the BQ transaction (which was entered into on April 11, 2016), as required by the Metrics Plan.<sup>2</sup>

### Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loan & Investment	Senior Debt	\$1.5 million

<sup>1</sup> Case 13-M-0412.

<sup>2</sup> See Section 5.4, pages 9 – 10 and Appendix A.

## Location(s) of Underlying Project(s)

Putnam County. The project is located in Patterson, New York. The future portfolio projects are expected to be located in various counties throughout New York State.

## Types of Client & Partner Organizations that are Transaction Participants

	Name	Participant Type
<b>Client</b>	BQ Energy	Energy Project Developer
<b>Partners (current)</b>	Balance of Plant Contractor	Industry Vendor
	Solar Panels	Industry Vendor
	Racking System	Industry Vendor
	Inverters	Industry Vendor
	Hudson Valley Institution	Institutional End-User (remote net metering credits)
<b>Partners (future)</b>	To be determined private lenders	Will be identified along with additional projects in the portfolio resulting in scale

## 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 (<5 MW), as these developers are restricted by their size and comparatively limited track record.	This transaction will drive growth in the small to mid-size solar sector for developers by utilizing a standardized set of lending and contracting arrangements, and equipment. As a result, underwriting efficiency increases and transaction costs are reduced. Developing standardized projects within a portfolio provides for a more attractive financing opportunity to a larger potential investor group, with increased funding options resulting in reduced transaction and financing costs.
Commercial and Industrial (“C&I”) Businesses and Facilities	C&I counterparties are the power buyer or remote net metering counterparty. Financiers often require such counterparties to have a credit rating by a major rating agency to evaluate risk. Lack of a rating increases the time and cost of conducting thorough credit analysis. <sup>3</sup>	This transaction has been designed to standardize the underwriting process for unrated counterparties, and to open the market to include more unrated C&I counterparties. By developing a standardized approach to these types of projects, it becomes more straightforward for institutional investors and other capital providers to understand the risk profile affiliated with these counterparties, such that underwriting the counterparties is more replicable and efficient.
Private Market Participants	The construction and operation of commercial and industrial distributed energy projects continues to emerge in New York’s clean energy marketplace. In many cases, there is not yet the scale and standardization required to attract many potential private equity and debt investors.	A standardized approach to project development, together with unlocking the potential for projects with counterparties that lack credit ratings by the major ratings agencies, will enable developers to establish a track record within their portfolio as well as create scale to appeal more broadly to traditional private capital providers. This in turn will create additional familiarity with the asset class, resulting in increasing refinancing options and liquidity.

<sup>3</sup> In finance, a “rating” refers to a letter grade assigned to a corporation or its debt instruments by a ratings agency such as Standard & Poor’s, Moody’s or Fitch. Ratings are based on a prediction of default probability, so the better the rating the more likely the firm will be to pay periodic interest and repay the principal. Low ratings indicate a relatively high chance that the firm will fail to honor its payment obligations. Lower ratings generally result in higher interest rates.

## Technologies Involved

Technology	Measures
Renewable Energy	Solar photovoltaic (“PV”) systems

## Part II: 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”.<sup>4</sup> In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on<sup>5</sup>:

- Estimated lifetime and first-year clean energy generated (MWh);<sup>6</sup>
- Estimated clean energy generation installed capacity (MW); and
- Estimated 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	36,000 MWh	44,000 MWh	1,500 MWh	1,800 MWh
Estimated clean energy generation installed capacity <sup>7</sup>	1.4 MW	1.4 MW	N/A	N/A
Estimated GHG emission reductions <sup>8</sup>	19,000 metric tons	23,000 metric tons	760 metric tons	930 metric tons

### 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. Baseline data will be collected in 2016 for most 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.<sup>9</sup>

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:

<sup>4</sup> 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.

<sup>5</sup> See Metrics Plan, Section 3.0, page 6.

<sup>6</sup> First year energy generation refers to the first year of estimated energy generation once a measure is installed and as such generation will not necessarily correspond to the first year of the investment term. The majority of NYGB’s investments have a two to three-year development cycle in which projects are originated, installed and placed into commercial operation.

<sup>7</sup> Built clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.

<sup>8</sup> As of January 1, 2016, the New York State Energy Research and Development Authority (“NYSERDA”) utilizes a 1,160 lbs/MWh conversion factor to estimate GHG emissions reductions for electric generation and energy efficiency savings across all components of the Clean Energy Fund. NYSERDA previously utilized a 625 lbs/MWh conversion factor.

<sup>9</sup> See Metrics Plan, Section 5.2 at page 9.

- Size (generation capacity and dollar value) of the Project if different from proposed plans; and
- Performance of installed system.

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:

- Access to, and accessibility of, solar project performance data produced by the Project and similar developments comprising a single portfolio, particularly in any refinancing of a BQ project;
- Greater availability of construction loan options for small PV projects;
- Decreased project cost for BQ and other developers (procurement, permitting, legal, due diligence), due to greater standardization and scale; and
- Demonstration of competitive risk-return profiles for solar investment in NYS.

The above lists of 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**

NYSERDA will evaluate the impact this transaction has had on the clean energy finance markets and the energy/environmental benefits delivered by this transaction. It is anticipated outcome/impact evaluation will focus on all of the proposed BQ projects as a whole and identify specific findings by project as warranted.

**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 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 in 2016 and later follow-up studies will assess progress against baseline levels in 2017-2018. The specific timing of these efforts may be revised based on experience or other factors as each project and the overall portfolio evolve.

**Impact evaluation** will use actual system performance data to understand energy and environmental outcomes; on-site verification; and/or electronic monitoring of clean energy generation. Impact evaluation is expected to include periodic review and analysis of actual PV system electricity production data collected by BQ. In instances where actual performance varies from expected performance, site visits could be conducted to identify causes and corrective actions. Impact evaluation will help provide verification of performance, in turn aiding the clean energy finance community in better understanding risks in this technology area.

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 specifically tracked in order to avoid 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 avoid double counting. Attempts will also 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.

## Scaling Residential Solar & a New Asset Class to Advance New York’s Clean Energy Goals

### Solar Mosaic, Inc.

*NY Green Bank (“NYGB”) is participating in a \$200.0 million credit facility for Solar Mosaic, Inc. (“Mosaic”), a national financial technology company that provides homeowners loans to finance the installation of solar systems on their home. As a participant, NYGB’s capital is expected to facilitate Mosaic’s financing of up to 1,200 residential solar systems in New York State (“NYS”). This transaction results in a credit facility of greater size for Mosaic and will expand Mosaic’s statewide footprint and contribute up to an additional 9 megawatts (“MW”) of clean, local power in NYS.*

### Part I: Transaction Description

Mosaic is a financial technology company, that via a third party contractor network, provides homeowners loans to finance the installation of solar systems on their home. At the request of Guggenheim Partners, a global investment and advisory financial services firm, and in partnership with Germany’s DZ BANK, NYGB is a participant in an up to \$200.0 million senior secured credit facility (the “**Credit Facility**”). NYGB’s participation in the credit facility (i) results in increased financing scale and diversity that will result in larger term securitizations that should assist creating greater market liquidity and drive down financing costs, (ii) increased deployment by Mosaic in New York State benefiting homeowners and the contractors serving them, and (iii) motivate new participants in the market given NYGB’s financial expertise in clean energy financings.

With the capital provided by the Credit Facility, Mosaic will provide homeowners with loans that will result in up to 13,000 residential solar installations nationwide, building up an extensive portfolio of projects and resulting in considerable emissions reductions. NYGB participation in the Credit Facility will fund the financing of up to 1,200 new residential solar systems in NYS, contributing up to an additional 9 MW of clean, local power in New York.

This Transaction Profile is provided pursuant to the updated “NY Green Bank – Metrics, Reporting & Evaluation Plan” (the “**Metrics Plan**”) developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on February 22, 2016.<sup>1</sup> This Transaction Profile contains specific information in connection with the Mosaic transaction (which was entered into on April 19, 2016), as required by the Metrics Plan.<sup>2</sup>

### Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation <sup>3</sup>	Senior Debt	\$10.0 million

<sup>1</sup> Case 13-M-0412.

<sup>2</sup> See Section 5.4, pages 9 – 10 and Appendix A.

<sup>3</sup> A warehouse credit facility is a type of financing product where funds are advanced to a borrower to facilitate the completion over time of a series of qualifying projects that together aggregate into a sizable portfolio. Larger portfolios of projects tend to attract greater interest and long term investment alternatives in the commercial markets than might otherwise be available to finance each individual project.

## Location(s) of Underlying Project(s)

Statewide.<sup>4</sup> Mosaic will market its loan products throughout New York.

## Types of Client & Partner Organizations that are Transaction Participants

	Name	Participant Type
<b>Client</b>	Mosaic	Financial Technology Company
<b>Partners (current)</b>	Approved Installers and Equipment Suppliers DZ Bank Guggenheim Partners	Industry Vendors Lender and Administrative Agent Arranger of the Credit Facility
<b>Partners (future)</b>	To Be Determined	Credit Facility Lenders Term Institutional Investor(s)

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
<b>Private Market Participants</b>	The number of bank lenders participating in credit facilities that fund loans to homeowners for residential solar projects is growing, however there remains limited private capital availability resulting in smaller credit facilities than certain developers can utilize.	<p>NYGB's participation increases the credit facility size to a level that permits greater Mosaic deployment. In addition, NYGB's participation as a specialty clean energy investor encourages new potential bank lender entrants.</p> <p>As the market becomes larger and such portfolios have greater performance history, additional bank lenders are expected to enter the market.</p> <p>In addition, as there is greater history of bank lenders being refinanced by institutional securitization lenders upon aggregation of sizable portfolios, additional banks will have confidence of being refinanced as is intended.</p>
	Institutional term securitizations residential solar cash flows (PPAs, leases, loans) have grown substantially over the past few years, however the size of market and size of individual transactions is nowhere near the scale of other securitized asset classes. In order to attract the broadest set of large investors, which will ultimately improve liquidity and drive down pricing, requires more securitizations and larger securitizations.	Larger term securitizations <sup>5</sup> required larger credit facilities such as this transaction, where DZ and NYGB on a short term basis fund the aggregation of solar loans to be securitized at scale. NYGB's participation enables the "warehouse" credit facility to be larger than it otherwise would be, which will result in larger term securitizations than would have otherwise been possible. In addition, NYGB's participation is expected to assist in pulling additional future bank lenders into the credit facility, which will result in larger securitizations resulting in a broader set of active investors.
<b>NYS Residential Solar Installers</b>	Access to financing solutions enables residential solar installers to better serve customers that seek to own solar but are more compelled to purchase if financing is provided. Well packaged financing solutions	Products such as Mosaic's loan product providing Mosaic's third party contractor network with a packaged financing solution, which provides the contractors with the ability to install more solar and growth their businesses.

<sup>4</sup> Defined as projects located in four or more regions of the state

<sup>5</sup> Securitization is the process of pooling contractual debt – such as credit card debt, auto loans, residential mortgages, etc. – and selling the related cash flows (payments that will be made on the debt) to third party investors as securities. The process creates liquidity in the marketplace by enabling smaller investors to purchase shares in a larger asset pool.

Beneficiary	Market Barrier	Financing Solution
	are not readily available to many contractors.	
<b>NYS Homeowners</b>	Greater customer choice in acquiring and financing solar will result in more homeowners doing so.	With a Mosaic loan, a NYS resident will benefit from an additional financing option that allows for ownership of the system on their roof, directly enjoying remote net metering and federal tax benefits.

## Technologies Involved

Technology	Measures
<b>Renewable Energy</b>	Solar photovoltaic (“PV”) systems

## Part II: 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”.<sup>6</sup> In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on<sup>7</sup>:

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

The estimated lifetime and first-year energy and environmental impacts of Mosaic’s development in NYS are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated clean energy generated	70,000 MWh	270,000 MWh	3,000 MWh	10,900 MWh
Estimated clean energy generation installed capacity <sup>8</sup>	2.5 MW	9.3 MW	N/A	
Estimated GHG emission reductions <sup>9</sup>	39,000 metric tons	144,000 metric tons	1,600 metric tons	5,700 metric tons

### 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.<sup>10</sup> Baseline data will be collected in 2016 for most 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.

<sup>6</sup> 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.

<sup>7</sup> See Metrics Plan, Section 3.0, page 6.

<sup>8</sup> Built clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.

<sup>9</sup> As of January 1, 2016, the New York State Energy Research and Development Authority (“NYSERDA”) utilizes a 1,160 lbs/MWh conversion factor to estimate GHG emissions reductions for electric generation and energy efficiency savings across all components of the Clean Energy Fund. NYSERDA previously utilized a 625 lbs/MWh conversion factor.

<sup>10</sup> See Metrics Plan, Section 5.2 at page 9.

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:

- Number and size (generation capacity and dollar value) of projects completed; and
- Loan performance.

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:

- Awareness and use of solar loan performance data produced by this project by potential financing entities;
- View of market actors (e.g., insurance institutions) as to investment value of renewable energy loans; and
- Securitizations of residential solar projects.

The above 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 short, mid and long-term 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 the intervention on financial markets. As noted, baseline data will be collected on most key indicators in 2016 and later follow up studies will assess progress against baseline levels in 2017-2018. The specific timing of these efforts may be revised based on experience or other factors as the project evolves.

**Impact evaluation** will use estimated system performance data to understand energy and environmental outcomes.

As with all NYGB investments, Mosaic projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, be specifically tracked in order to avoid any double-counting activity on a consolidated basis. Per 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 these projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.

May 2016

## Providing Energy-Saving Home Improvements for New York State Residents

Sealed, Inc.

*A \$5.0 million senior-secured revolving credit facility provided by NY Green Bank (“NYGB”) will allow Sealed Inc. (“Sealed”), an energy software company, to offer an innovative financing option to its customers to cover the costs of home energy efficiency measures. This transaction will allow Sealed to expand its current operations by completing energy-saving improvements for up to 400 homes in New York State (“NYS”).*

### Part I: Transaction Description

Sealed is a NYS-based energy software company that provides home efficiency upgrades – from new insulation, to sealing air leaks, to installing new boilers and furnaces – utilizing a first-of-kind, user friendly financing solution. NYGB’s \$5.0 million revolving credit facility will enable Sealed to introduce a new financial product for homeowners interested in making their residences more comfortable as well as more energy efficient.

To date, most energy efficiency financing products are loans where the homeowner is obligated to make a predetermined payment regardless of actual savings. Sealed’s offering allows homeowners to make payments derived from actual energy savings. Sealed’s signature analytics software enables accurate and reliable calculations of expected energy savings which translates into a user-friendly billing process. In addition, the installations include health and safety improvements that are recommended or required by the Building Performance Institute.

This transaction type is replicable for other participants in the energy efficiency market in NYS – specifically smaller developers with early marketplace success but limited scale to date – providing precedent for further expansion of residential energy efficiency financing products.

This Transaction Profile is provided pursuant to the updated “NY Green Bank – Metrics, Reporting & Evaluation Plan” (the “**Metrics Plan**”) developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on February 22, 2016.<sup>1</sup> This Transaction Profile contains specific information in connection with the Sealed transaction (which was entered into on May 6, 2016), as required by the Metrics Plan.<sup>2</sup>

### Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation	Revolving Credit	\$5.0 million

### Location(s) of Underlying Project(s)

Long Island & Westchester. Sealed’s residential home energy improvement program will be offered to homeowners primarily throughout Long Island and Westchester. NYGB’s \$5.0 million revolving credit will enhance Sealed’s ability to expand to other regions in NYS.

<sup>1</sup> Case 13-M-0412.

<sup>2</sup> See Section 5.4, pages 9 – 10 and Appendix A.

## Types of Client & Partner Organizations that are Transaction Participants

Name		Participant Type
<b>Client</b>	Sealed	Specialty Finance Company
<b>Partners (current)</b>	Sealed's Approved Contractors	Home Improvement Contractors
<b>Partners (future)</b>	To be Identified	Institutional Investor(s)

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
NYS Homeowners	Homeowners are increasingly aware of the monetary benefits to be gained from making home efficiency upgrades. However, high upfront costs and limited financing options can make this already complex effort seem overly burdensome.	This transaction provides homeowners with a new financing model to pay for efficiency upgrades. Rather than have only one primary financing option – where homeowners sign on to a pre-determined fixed monthly payment – Sealed allows homeowners to use an innovative financing mechanism, which is directly correlated to the guaranteed energy savings. In addition, as Sealed's financing opportunity expands throughout the State, project costs for Sealed are expected to decline due to increased experience and economies of scale. This should ultimately translate into reduced costs for customers.
Capital Market Participants	While residential energy efficiency financing services are becoming more prevalent in the marketplace, private sector capital providers are hesitant to provide financing until the success of these types of projects –in terms of origination, deployment, performance and ongoing management – has been better demonstrated.	NYGB's early financial investment will help establish a track record for residential energy efficiency financings, and demonstrate the strong risk/return profile associated with these individual efficiency measures. Many private capital providers today prefer to purchase a large pool of existing assets, and because NYGB's \$5.0 million will allow Sealed to facilitate up to 400 individual home upgrades, this will ultimately become a portfolio that is of sufficient size to be sold to private capital providers. NYGB's financing enables Sealed to expand its current business operations while simultaneously introducing new private sector capital providers into this emerging asset class.

## Technologies Involved

Technology	Measures
<b>Energy Efficiency</b>	Boiler replacement, air sealing, duct sealing, insulation, LED lighting, and smart thermostats.

## Part II: Metrics & Evaluation Plan

### Planned Energy & Environmental Metrics

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

- Estimated lifetime and first-year energy saved by fuel type (MWh/MMBtu); and
- Estimated lifetime GHG emission reductions (metric tons).

The estimated lifetime and first-year energy and environmental impacts of Sealed’s activity in NYS are as follows:

Energy/Environmental Impacts	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
<b>Estimated energy savings from efficiency measures (electric)</b>	3,600 MWh	4,400 MWh	180 MWh	220 MWh
<b>Estimated energy savings from efficiency measures (fuel)</b>	.39 million MMBtu	.48 million MMBtu	20,000 MMBtu	24,000 MMBtu
<b>Estimated GHG emission reductions<sup>5</sup></b>	28,000 metric tons	34,000 metric tons	1,400 metric tons	1,700 metric tons

### 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.<sup>6</sup> Baseline data will be collected in 2016 for most 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:

- Number of projects in development and completed;
- Average and aggregate dollar value of projects in development and completed;
- Location of projects;
- Number of small service providers (contractors);
- Consumer payment defaults;
- Number and types of measures installed;
- Market volume of energy efficiency projects increases;
- Favorable financial performance data; and
- Favorable technology performance data.

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:

<sup>3</sup> 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.

<sup>4</sup> See Metrics Plan, Section 3.0, page 6.

<sup>5</sup> As of January 1, 2016, NYSERDA utilizes a 1,160 lbs/MWh conversion factor to estimate GHG emissions reductions for electric generation and energy efficiency savings across all components of the CEF. NYSERDA previously utilized a 625 lbs/MWh conversion factor.

<sup>6</sup> See Metrics Plan, Section 5.2 at page 9.

- Decreased project cost for Sealed due to increased experience;
- Geographic coverage of Sealed activities extends beyond Long Island;
- General understanding of energy efficiency benefits increases among homeowners and financial institutions;
- Demonstration of competitive risk/return profiles;
- Increased awareness and use of financial performance data by financing entities;
- Increased awareness and use of technology performance data by financing entities;
- Financing entities emerge to assume NYGB's position in transaction;
- Instances of similar financing models emerge;
- Residential homeowner financing costs for energy efficiency improvements decrease;
- Scale of energy efficiency investment by NYS homeowners increases;
- Number of residential energy efficiency refinancings increase;
- Number of banks offering similar warehouse lines of credit increases; and
- Increased energy savings and emissions reductions

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

**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 (e.g., homeowners, financial community) to track information including but not limited to: participation rates, project scale information, interest in residential energy efficiency financing, and influence of NYGB's participation on financial markets. As noted, baseline data will be collected on most key indicators in 2016 and subsequent follow-up studies will assess progress against baseline levels in 2017-2018. The specific timing of these efforts may be revised based on experience or other factors as the investment evolves.

**Impact evaluation** is expected to include retail electric and gas utility billing analysis to verify initial consumption estimates and assess impacts related to installation of energy efficient measures. Releases for billing data will be requested of all financing recipients at closing allowing NYSERDA and third party evaluators access to utility data prior to and following measure installation. Billing analysis will be conducted beginning in 2018 and be updated annually to align initial estimates of energy savings with actual savings. On-site verification of measure installations and performance may be conducted as resources allow. This is expected to occur on a less frequent basis to support ongoing billing analyses over time, as greater experience is gained. Billing analysis is a generally accepted and cost-effective method to validate energy savings on projects involving several measures and aggregate savings levels. Should the project makeup indicate that billing analysis is not a viable method for certain segments of the participants, other methods will be considered. All customer data will be anonymized and/or aggregated prior to being reported or published.

As with all NYGB investments, Sealed 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 specifically tracked in order to avoid 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 avoid double counting. Attempts will also 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.



## ***Increasing Opportunities for NY Residents to Go Solar, Expanding Market Liquidity***

### **Sunrun Inc. & Investec Bank PLC**

*NY Green Bank (“NYGB”) has entered into two transactions to accelerate the deployment of more than 5,000 solar projects at homes across New York State (“NYS”) by Sunrun, Inc. (“Sunrun”). Sunrun is a national solar provider that markets and develops residential solar energy systems. The two transactions complement each other – as one provides financing to fund the purchase of materials and installation of the solar projects, and the other provides post-construction financing. The post-construction term facility was arranged by Investec Bank PLC (“Investec”), an international specialty bank and asset manager engaged by Sunrun.*

### **Transaction Descriptions**

#### **Construction Loan Facility**

On June 16, 2016 NYGB committed \$25.0 million which, along with financing from other lenders, allows Sunrun to increase its existing revolver from \$205.0 million to \$250.0 million. The revolver (“**Construction Loan Facility**” or “**CLF**”) will be used by Sunrun to fund customer acquisition, purchase of materials, and construction and installation of the systems, and will ultimately be refinanced through a combination of the Investec Credit Facilities (described below) and tax equity commitments arranged by Sunrun. NYGB’s participation in this consortium of capital providers broadens the availability of construction financing for distributed energy projects for homeowners across NYS.

#### **Investec Credit Facilities**

On May 13, 2016, NYGB closed a \$25.0 million commitment to participate in a transaction consisting of two credit facilities – a loan aggregation revolver and a term loan (together the “**NYGB Loan Products**”). The transaction was part of a broader \$340.0 million financing (the “**Investec Credit Facilities**”) arranged by Investec that provides Sunrun with a larger financing to expand its business in NYS and elsewhere. The \$340.0 million Investec Credit Facilities (which include the NYGB Loan Products) represents one of the largest aggregation financings for a residential solar developer closed to date. Through increased scale, this transaction is expected post-aggregation to draw new investors and financial institutions into the marketplace, decreasing the cost of capital for solar developers and installers, and in turn, the cost of solar power equipment sold or leased to homeowners.

#### **Overall Context**

Sunrun sought NYGB’s participation in the CLF and Investec Credit Facilities to provide further liquidity to support Sunrun’s capital needs in growing its business, including in NYS. With both construction and longer-term financing in place, Sunrun is well positioned to meet the growing demand from homeowners and expand its ability to finance the installation of solar projects throughout NYS.

These complementary transactions will result in the aggregation of bundled pools of residential solar systems that will ultimately be refinanced through a longer-term take-out financing, which may include a securitization – the sale of underlying cash flows resulting from residential leases or power purchase agreements (“**PPAs**”) to third party investors – providing additional avenues to develop and scale the emerging residential solar asset class, both for Sunrun and other market participants. Given that the bank market for such credit facilities remains limited, NYGB’s participation

enables larger aggregation facilities than would otherwise be available, resulting in longer term takeout refinancings at a scale greater than might otherwise be achieved. Greater scale means greater investor interest, which will ultimately result in more attractive debt pricing that will benefit New Yorkers via more attractively priced contracts under which power is purchased. There is a growing market for residential solar securitizations, with the largest term securitization to date raising \$201.5 million.<sup>1</sup>

This Transaction Profile is provided pursuant to the updated “NY Green Bank – Metrics, Reporting & Evaluation Plan” (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.<sup>2</sup> This Transaction Profile contains specific information in connection with the Investec Credit Facilities (entered into on May 13, 2016), and the CLF (entered into on June 16, 2016) as required by the Metrics Plan.<sup>3</sup>

## Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation	Senior Secured Revolver and Subordinated Term Loan	\$25.0 million
Asset Loan & Investment	Construction Financing Revolver	\$25.0 million

## Location(s) of Underlying Project(s)

Multiple Regions.<sup>4</sup> Sunrun’s solar power generation systems will be offered to homeowners through PPA structures in regions across NYS.

## Types of Organizations that are Transaction Participants

	Name	Participant Type
<b>Client</b>	Investec	Global Corporate & Investment Bank
<b>Key Counterparty</b>	Sunrun	Solar Energy Project Developer
<b>Financiers (current)</b>	Various tax equity providers and commercial banks	Global Corporate & Investment Banks, Commercial/Regional Banks
<b>Financiers (future)</b>	To be identified	Institutional Investors(s)

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
<b>Capital Market Participants</b>	In clean energy markets, there is only a small (but growing) number of lenders actively financing residential solar projects.	NYGB participation in both transactions facilitates Investec’s ability to achieve substantial transaction scale. This will enable much larger post-aggregation term financings, which may include securitizations, resulting in broader market penetration and enhanced liquidity, both key goals of NYGB.
<b>Solar Project Developers</b>	Many solar developers face the challenge of securing sufficient financing to meet customer demand – hampering their ability to grow and achieve economies of scale.	NYGB’s participation in the CLF and the Investec Facilities will enable Sunrun to better meet residential demand in NYS. This type of financing can also be replicated with other developers seeking to secure similar capital support.

<sup>1</sup> SolarCity offered the \$201.5 million securitization, which took place in July, 2014. <http://www.greentechmedia.com/articles/read/SolarCitys-New-201M-Securitized-Solar-Portfolio-Keeps-the-Capital-Flowing>.

<sup>2</sup> Cases 13-M-0412 and 14-M-0094.

<sup>3</sup> See Section 4.0, pages 8 and Schedule 3.

<sup>4</sup> Defined as projects located in two or three regions of the State.

<b>Homeowners</b>	“Going solar” is not perceived by some homeowners as being accessible and the necessary valuation proposition to result in action.	NYGB participation in both transactions will produce benefits for eligible homeowners seeking to utilize solar power, as homeowners will have greater ability to contract for solar, while simultaneously realizing immediate reductions on their energy bill. Greater scale and deeper and broader financing markets will lead to even more compelling offerings being made available to homeowners.
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## 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”.<sup>5</sup> In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on<sup>6</sup>:

- Estimated gross lifetime and first-year clean energy generated (MWh);<sup>7</sup>
- 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 Sunrun’s development in NYS, facilitated by NYGB’s participation in the Investec Credit Facilities and CLF, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated gross clean energy generated	570,000 MWh	1,100,000 MWh	23,000 MWh	46,000 MWh
Estimated gross clean energy generation installed capacity <sup>8</sup>	19 MW	39 MW	N/A	
Estimated gross GHG emission reductions <sup>9</sup>	300,000 metric tons	600,000 metric tons	12,000 metric tons	24,000 metric tons

### 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 in which NYGB has participated

<sup>5</sup> 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.

<sup>6</sup> See Metrics Plan, Section 2.2, Table 1, page 3.

<sup>7</sup> First year gross energy generation refers to the first year of estimated gross energy generation once a measure is installed and as such generation will not necessarily correspond to the first year of the investment term. The majority of NYGB’s investments have a two to three-year development cycle in which projects are originated, installed and placed into commercial operation.

<sup>8</sup> Built clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.

<sup>9</sup> As of January 1, 2016, the New York State Energy Research and Development Authority (“NYSERDA”) utilizes a 1,160 lbs/MWh conversion factor to estimate GHG emissions reductions for electric generation and energy efficiency savings across all components of the Clean Energy Fund.

and will occur approximately three to five years following initial NYGB capital deployments.<sup>10</sup> Baseline data will be collected in 2016 for most 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:

- The number and size (i.e., generation capacity and dollar value) of projects completed through this transaction;
- Development of the residential solar market in NYS; and
- Performance of the underlying installed systems and loans.

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:

- Awareness and use of solar PPA data;
- View of banks and institutional investors as to the investment value of residential solar PPAs;
- Demonstration of competitive risk-return profiles for residential solar investment;
- Market volume of residential solar projects;
- Multi-year track-record of residential solar projects;
- Replication of Sunrun model by other solar developers, generally and targeting the residential sector, specifically;
- Expansion of term securitization markets; and
- Number of financial participants in securitization transactions (and in providing revolving warehouse and term loan facilities).

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

**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 (homeowners, financial community) to track information including but not limited to: participation rates, project scale information, interest in solar financing (generally and with regard to residential specifically), and influence of NYGB's participation on financial markets. As noted, baseline data will be collected on most key indicators in 2016 and later follow-up studies will assess progress against baseline levels in 2017-2018. The specific timing of these efforts may be revised based on experience or other factors as the investment evolves.

**Impact evaluation** will be based on the size of the systems installed and the projected clean energy generation.

As with all NYGB investments, Sunrun projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, be specifically tracked in order to avoid 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 avoid double counting. Attempts will also 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.

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<sup>10</sup> See Metrics Plan, Section 3.0 at pages 6 - 8.