



NY Green Bank
A Division of NYSERDA

NY Green Bank

Metrics, Reporting & Evaluation

Quarterly Report No. 5

(Through September 30, 2015)

Case 13-M-0412

November 12, 2015

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1 Introduction

This Quarterly Report (“**Report**”) is filed by NY Green Bank (“**NYGB**”) with the New York State Public Service Commission (the “**Commission**”) pursuant to the Metrics, Reporting & Evaluation Plan developed in consultation with the Department of Public Service (“**DPS**”) and filed with the Commission¹ (the “**Metrics Plan**”). The Metrics Plan reflects the requirements of the order issued by the Commission in connection with the initial capitalization of NYGB (the “**Initial Capitalization Order**”).² Both the Initial Capitalization Order and the Metrics Plan define “Quarterly Reports” as “a quarterly [NYGB] status report [filed] within 45 days of the end of each quarter that reports on ... progress in carrying out the organization and business plans provided.”³

The metrics reported quarterly are set out in Table 1 (the “**Metrics**”), with respective reporting obligations triggered by signed and closed NYGB financing/investment agreements. Quarterly Reports also include NYGB performance quarter-over-quarter against tracked Metrics for the immediately preceding quarter.

For this Report, unless otherwise indicated, information with respect to both Metrics and operational and risk management milestones (the “**Milestones**”) is provided for the third (calendar) quarter of 2015 and presents the situation as of September 30, 2015. In addition, any material subsequent events occurring in the period from October 1, 2015 through the date of this Report are described in Section 4.

Table 1. Metrics & Data Collection⁴

Metric Type	Metric	Data Collection	Timing
Risk Management Metrics ⁵	<ul style="list-style-type: none"> ▪ Total Capital (authorized and available) ▪ Approved Investments⁶ ▪ Committed Funds ▪ Deployed Funds ▪ Overall portfolio size and concentrations⁷ 	NYGB records ⁸	Reported quarterly (within 45 days after the end of each quarter) as NYGB financing/investment agreements are signed and closed. First quarterly report filed within 45 days after the third quarter 2014
	<ul style="list-style-type: none"> ▪ Portfolio Impairment (percent currently Impaired and projected recoveries) 	NYGB records	Reported annually, consistent with NYGB’s fiscal year (April 1 – March 31). First annual report filed within 90 days after March

¹ Case 13-M-0412, “New York Green Bank – Metrics, Reporting & Evaluation Plan”, dated June 19, 2014.

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

³ *Ibid*, pages 18 – 19 and 21, including ordering clause 8, page 25. Also, Metrics Plan, Section 4.1, pages 6 – 7.

⁴ Capitalized terms used in Table 1 and not otherwise defined in this Report have the meanings given to them in the Metrics Plan.

⁵ The Initial Capitalization Order defines risk management metrics as those that assist in defining acceptable capital deployment opportunities.

⁶ “**Approved Investments**” represent proposed investments that have moved through NYGB’s transaction process (see Exhibit 1) – from proposal submission, evaluation, structuring/diligence/negotiation, agreement in principle, to vetting by NYGB’s Investment & Risk Committee (“**IRC**”) and approval by New York State Energy Resource and Development Authority’s (“**NYSERDA**’s”) President & CEO after considering recommendations made by IRC members. Approved Investments represent an allocation of NYGB’s capital in accordance with the terms of the IRC approval – an interim stage before “Committed Funds” (discussed in Section 3). Once an Approved Investment has been fully negotiated, executed and closed, it becomes “Committed” and no longer represents a current Approved Investment.

⁷ NYGB’s risk management protocols include portfolio construction principles, which in turn address diversification and concentration. In particular, these principles require NYGB to identify and monitor concentration risk and exposures including as to technologies, product offerings and clients and counterparties.

⁸ NYGB records include information obtained from clients and partners, consistent with usual and customary commercial practices, including confidentiality policies and concerns that apply on a deal-by-deal basis.

Metric Type	Metric	Data Collection	Timing
			31, 2015 ⁹
Financial & Market Metrics	<ul style="list-style-type: none"> ▪ Cumulative Revenues¹⁰ ▪ Cumulative Operating Expenses¹¹ ▪ Number and type of NYGB-supported projects financed ▪ Number and general type of NYGB clients and partners 	NYGB records	Reported quarterly (within 45 days after the end of each quarter) as NYGB financing/investment agreements are signed and closed. First quarterly report filed within 45 days after the third quarter 2014
	<ul style="list-style-type: none"> ▪ Audited Financials ▪ Mobilization Ratio ▪ Return on Investment ▪ Capital Redeployment Cycle Time 	NYGB records	Reported annually, consistent with NYGB's fiscal year (April 1 – March 31). First annual report filed within 90 days after March 31, 2015 ¹²
	<ul style="list-style-type: none"> ▪ Level of awareness, knowledge and confidence of financial institutions and market intermediaries in clean energy investments¹³ 	Market evaluation ¹⁴	Long-term outcome: Baseline and time series data to be reported as available from periodic evaluation
Energy & Environmental Metrics	<ul style="list-style-type: none"> ▪ Estimated lifetime energy saved by fuel type from energy efficiency projects (MWh/MMBtu)¹⁵ and/or lifetime clean energy generated (MWh)¹⁶ ▪ Estimated lifetime primary energy saved from CHP (Btu) ▪ Estimated clean energy generation installed capacity (MW), if applicable ▪ Estimated lifetime greenhouse gas emission reductions (metric tons) 	NYGB records Impact evaluation	Long-term outcomes: Estimates reported quarterly (within 45 days after the end of each quarter) for Committed Funds and Deployed Funds as NYGB financing/investment agreements are signed and closed, later verified by impact evaluation. First quarterly report filed within 45 days after the third quarter 2014

⁹ Timing takes into account the period required for Audited Financials to be prepared and reviewed ahead of being available for public filing.

¹⁰ “Cumulative Revenues” means the aggregate of all NYGB’s revenues since inception and includes income from all sources.

¹¹ “Cumulative Operating Expenses” means the aggregate of all NYGB’s Operating Expenses since inception.

¹² Timing takes into account the period required for Audited Financials to be prepared and reviewed ahead of being available for public filing.

¹³ Over time, as financing/investment agreements are signed and closed, NYGB will give consideration to the development of specific barriers and market transformation indicators.

¹⁴ As set out in Section 5.2 of the Metrics Plan, the reporting cycle for this Metric will be tied to the timing of the required evaluations.

¹⁵ Energy impacts will generally be based on full savings compared against the baseline of the existing condition and will be reported quarterly based on NYGB results. As these metrics are verified through impact evaluation, those results will be included in Quarterly Reports following completion of corresponding evaluations.

¹⁶ This Metric category includes energy impacts from on-site fuel cells and bio-heat applications.

2 Operational & Risk Management Milestones

2.1 Portfolio & Pipeline Update

2.1.1 Overview

NYGB's investment activities fall into two broad categories:

- (a) Those activities relating to transactions that have been closed, which collectively comprise NYGB's investment **portfolio**; and
- (b) Those activities relating to transactions which 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.¹⁷

As announced by Governor Andrew M. Cuomo on October 21, 2015¹⁸, NYGB has recently closed three transactions involving the commitment of an additional \$49.0 million of NYGB capital. Two of these transactions – Renew Financial and Level Solar, both described in Section 2.1.2 - were closed within the period covered by this Report, and involve the commitment of \$45.0 million in NYGB capital. A third transaction - United Wind, described as a subsequent event in Section 4 – closed at the beginning of October and involves the commitment of \$4.0 million in NYGB capital.

NYGB's overall transaction status is summarized in Figure 1,¹⁹ showing that since inception through September 30, 2015:

- (a) \$851.6 million of proposals have been received and evaluated by NYGB's Scoring Committee²⁰;
- (b) \$742.1 million of transactions have passed Scoring Committee evaluation²¹;
- (c) \$292.4 million of transactions have received Greenlight Committee recommendation for advancement²²;
- (d) \$90.9 million of transactions have been vetted by the IRC and approved by NYSERDA's President & CEO²³; and
- (e) \$45.50 million of transactions have been fully executed and closed.

¹⁷ See also Exhibit 1 for an outline of NYGB's investment process.

¹⁸ "Governor Cuomo Announces Three NY Green Bank Transactions to Improve Access to Clean Energy and Reduce Greenhouse Gas Emissions", available at <http://greenbank.ny.gov/News/In-the-News/2015-10-21-Three-NY-Green-Bank-Transactions-to-Help-New-Yorkers-Gain-Access>.

¹⁹ Note that all these amounts are subject to change over time as proposals and transactions evolve.

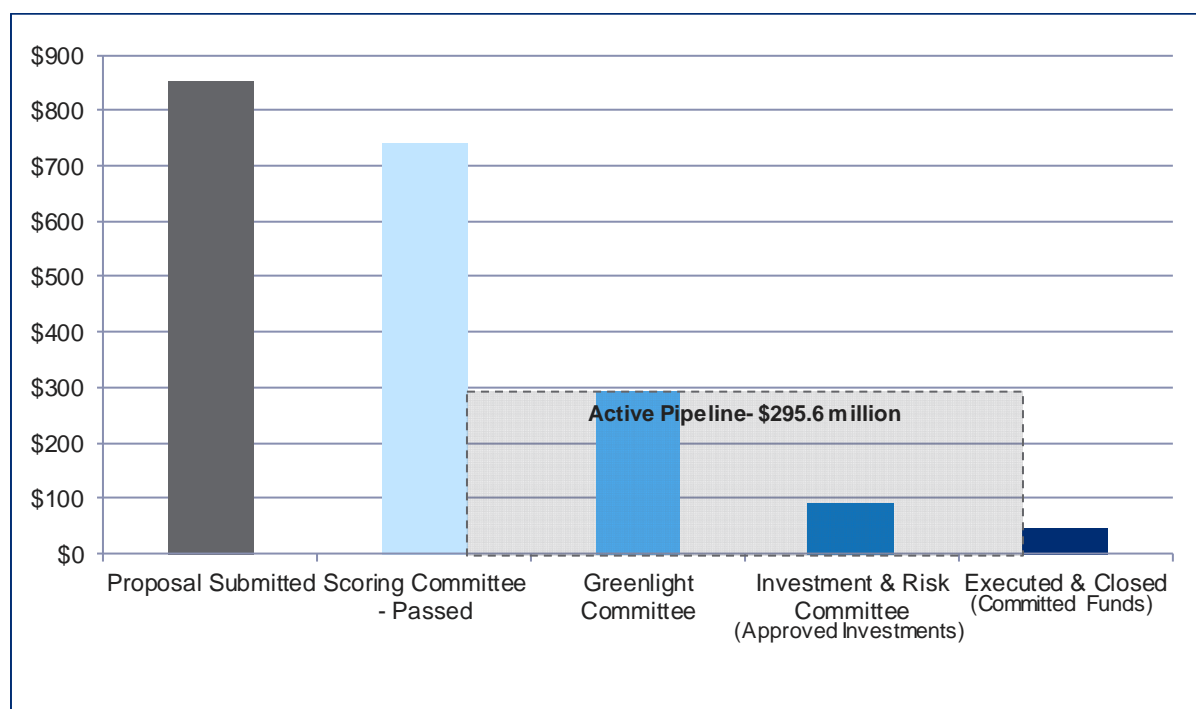
²⁰ Discussed in Exhibit 1.

²¹ *Ibid.*

²² *Ibid.*

²³ *Ibid.*

Figure 1. Transaction Status (\$ Millions)



Also as shown in Figure 1, NYGB currently has an active pipeline of \$295.6 million.²⁴ “**Active Pipeline**” is made up of transactions where: there is agreement in principle between the parties; there is momentum in moving the transaction forward; conditions are expected to be met; and NYGB is dynamically proceeding towards greenlight recommendation, investment and risk approval and execution and closing.

2.1.2 Executed & Closed Transactions

Within the period covered by this Report, NYGB has executed transactions resulting in the Commitment of \$45.0 million. This is made up of the following two transactions:

- (a) Expanding Residential Solar Opportunities for New York Homeowners: \$25.0 million committed to a new warehouse credit facility²⁵ for Level Solar – a New York-based solar provider that designs and installs systems for residential homes at no cost to the consumer. With funding from NYGB and U.S. Bank, Level Solar will be able to materially grow its customer base. The financings facilitated by NYGB have the potential to provide solar installations for up to 6,000 homes in New York. By

²⁴ Unlike other references which are cumulative since NYGB inception, Active Pipeline is a point-in-time reference. As momentum behind individual transactions fluctuates while advancing towards execution and closing due to various factors, including many not under NYGB’s control, these transactions may move in and out of the Active Pipeline at any given time.

²⁵ A warehouse 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 with respect to which there may be greater interest and long term investment alternatives in the commercial markets than might otherwise be available to finance each individual project. During the period (which could be a number of years) over which a particular portfolio of projects is being built or aggregated, the underlying facility is considered to be a “warehouse” in the figurative sense that it is the “place” where each developed and developing project is “held” as the larger portfolio of projects is built during the facility term.

providing renewable power to homeowners through long-term power purchase agreements, Level Solar is expected to reach sufficient scale to attract financing entirely through private markets in future; and

- (b) Expanding Availability of Residential Energy Efficiency Loans to Homeowners Throughout New York State: \$20.0 million investment from NYGB, along with a \$50.0 million warehouse credit facility provided by Citi, is being provided for Renew Financial to expand its consumer lending program to New York State for the first time. This program, ReHome New York, is an innovative public-private partnership that will offer up to 12,000 New York homeowners as much as \$20,000 in low-cost financing for clean energy and energy efficiency improvements to their homes.²⁶

Further details on these transactions are included in Exhibit 2.

2.1.3 Active Pipeline

In aggregate, NYGB's ongoing and multifaceted business development activities continue to generate a strong and growing pipeline of transaction opportunities involving material investment amounts.

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**")²⁷. Through September 30, 2015, proposals requesting \$851.6 million of NYGB capital have been received, in connection with total proposed clean energy investments in New York State of an estimated \$3.5 billion²⁸ (including private sector capital; see Figure 2 and Figure 3).

²⁶ ReHome New York's primary focus is energy efficiency, although some small amount of renewable energy installations at participating homes may be expected. ReHome New York is distinguishable from the State-sponsored Green Jobs Green New York ("**GJGNY**") program in the following ways: (a) ReHome New York targets reactive customers, whereas GJGNY is more proactive (since customers of the latter are required to get an energy audit/assessment); (b) ReHome New York involves private sector capital sources and market rate pricing within an overall market initiative; and (c) ReHome New York has a private sponsor as opposed to government sponsorship, and as such, ReHome New York can be expected to have a demonstration effect in attracting additional private investment to the residential efficiency sector in the State.

²⁷ Clean Energy Financing Arrangements – Request for Proposals (RFP) No. 1, available at <http://greenbank.ny.gov/Partnering-With-Us/Propose-an-Investment>.

²⁸ 73% of the proposals received by NYGB identify the total project value of the investments proposed at ~\$2.6 billion. While 27% of the proposals received do not specify the total project value of investments, these have been estimated at just under \$1.0 billion.

Figure 2. \$851.6 Million Requested NYGB Investment by Technology

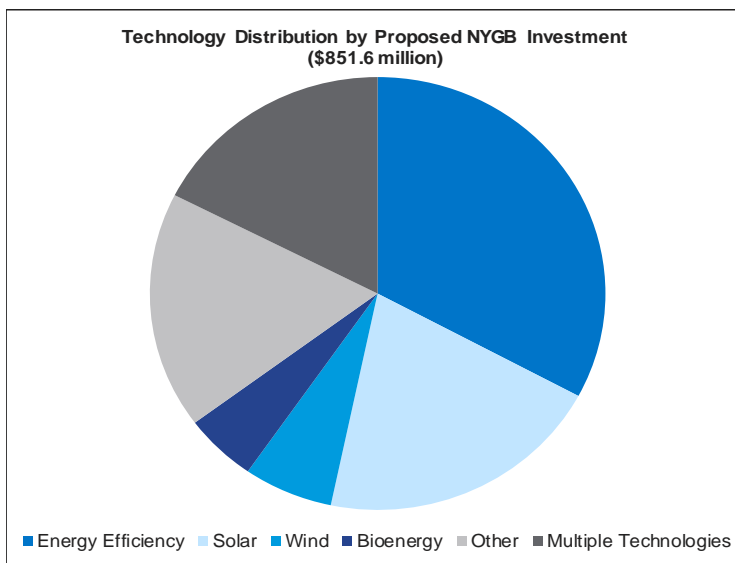
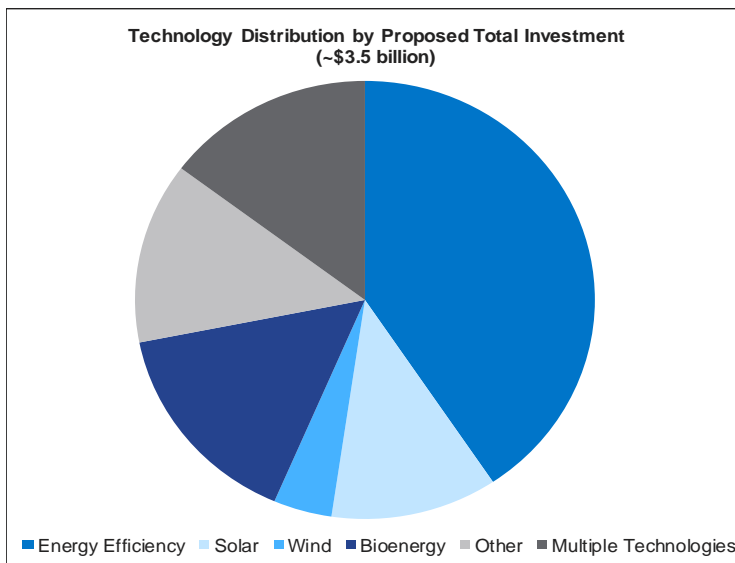


Figure 3. ~\$3.5 Billion²⁹ Proposed Total Investments by Technology



The proposals received to date are diverse by end-use customer segmentation and locations throughout the State as shown in [Figure 4](#) and [Figure 5](#).

²⁹ Represents total proposed investment amount, including private capital.

Figure 4. \$851.6 Million Requested NYGB Investment by End-Use Customer Segment

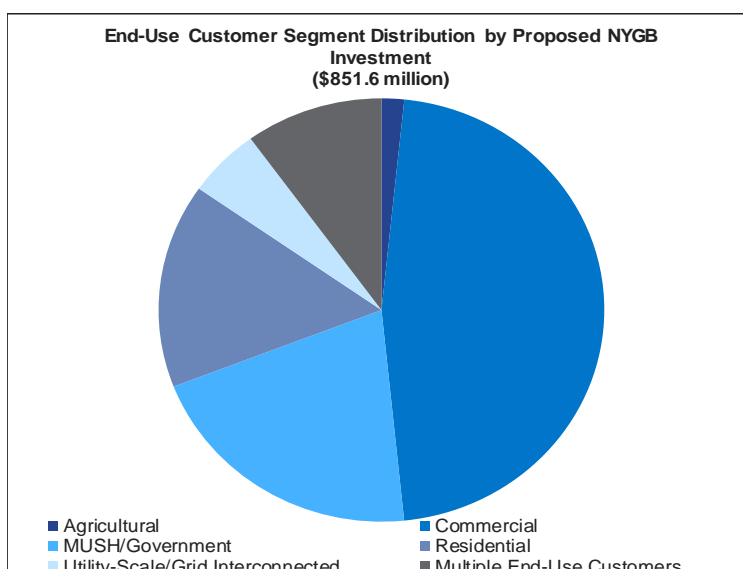
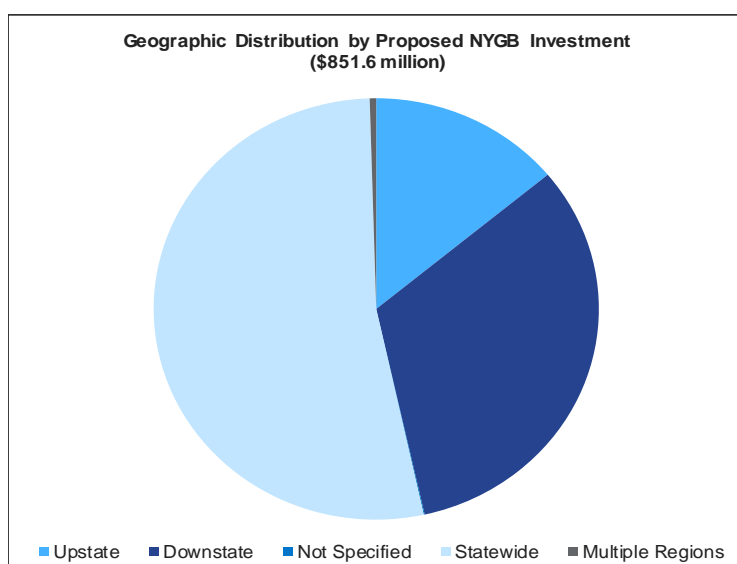


Figure 5. \$851.6 Million Requested NYGB Investment by Geographic Distribution



2.2 General

Quarterly Reports are required to address Milestones pursuant to both the Initial Capitalization Order and the Metrics Plan. Since the last Quarterly Report, NYGB’s continued execution to plan, together with major milestone achievements, include:

- (a) Ongoing Execution on Robust Pipeline of Transactions: Continued momentum in building both NYGB’s investment portfolio with executed and closed transactions, as well as its active pipeline – as discussed in Section 2.1. This includes, on an ongoing basis, receipt, review and evaluation of, and response to, diverse investment proposals received by NYGB from prospective clients and partners pursuant to the Investment RFP following the investment process outlined in Exhibit 1.

- (b) Public Reporting & Metrics: Filed the Quarterly Report for the period ending June 30, 2015 with the Commission on August 14, 2015.
- (c) Continuing Origination Efforts: Ongoing origination meetings with existing and potential clients and partners in connection with projects that meet NYGB's mission and investment requirements.

On a weekly basis, NYGB team members continue to engage in numerous meetings with existing participants in the clean energy markets in the State, together with parties that do not currently have broadly established businesses in New York, but are motivated to consider new investments by New York State's integrated energy strategy emphasis on clean technology market developments, including partnering with NYGB. These meetings include full information exchanges on existing and planned initiatives within the context of NYGB's mission and investment processes, all aimed at deepening the understanding of NYGB's investment role and furthering third party interest in partnering with NYGB to further expand clean energy investments in the State.

As part of this overall effort, over the summer, NYGB team members presented at a variety of industry and stakeholder conferences and events. In addition, various articles mentioning NYGB have been published nationally and internationally in the period to which this Report relates.³⁰

- (d) Continuing Stakeholder Outreach & Communications: From July through September 2015, NYGB staff continued to meet with various stakeholder groups through conferences, working groups and targeted outreach. Specific highlights include the following:
- i. Over the past quarter, NYGB began conversations with various microgrid developers, specifically several NY Prize Round One winners to establish an early dialogue around potential additional financing opportunities for otherwise qualified participants in NY Prize. These efforts will culminate in a microgrid financing event NYGB will co-host with NY Prize this winter. In the meantime, NYGB continues to work with various developers to determine how NYGB resources may be applied to supporting microgrid efforts across the State;
 - ii. During July, NYGB initiated outreach to various stakeholder organizations to provide an update on NYGB activity and to solicit direct feedback and insights regarding NYGB on behalf of those organizations' members and partners. These stakeholders included, but were not limited to, the Independent Power Producers of New York, Multiple Intervenors, Sierra Club, PACE Law, the Business Council of New York State and several utilities. The outreach efforts underpin what is expected to be an ongoing, interactive and important dialogue and NYGB continues to welcome constructive input from all stakeholder groups;
 - iii. In a separate initiative aimed at key industry incumbents, NYGB hosted a meeting on August 11, 2015 with utility representatives and a consulting firm with extensive familiarity with On-Bill Recovery ("**OBR**") to examine various financing mechanisms for utilities seeking to utilize the OBR mechanism to finance energy efficiency or clean energy generation measures;

³⁰ "Green expo to be held Oct. 14 at SUNY New Paltz", Daily Freeman, July, 9, 2015; (b) Devashree Saha, "Green Banking Goes Local", The Energy Collective, July 14, 2015; (c) David Giambusso, "P.S.C. approves \$150 M. for New York Green Bank", Capital New York, July 16, 2015; (d) Vipal Monga, "New York Green Bank Gets Another \$150 Million", Wall Street Journal, July 16, 2015; (e) Mike Hower, "States turning to green banks to finance renewables", Green Biz, July 20, 2015; (f) Dani Kass, "NY Green Energy Development Bank Gets \$150 M Boost", Law 360, July 20, 2015; (g) David Giambusso, "City suggests tweaks to state clean energy investment plan", Politico, August 18, 2015; (h) "Finger Lakes Wineries Team Up in Sustainability", Quality Assurance Magazine, September 25, 2015; (i) Bob Jamieson, "Grapes, Solar Panels Share Finger Lakes Wineries", Stargazette, September 27, 2015; (j) Jim Miller, "Wineries Make Plans to Go Solar", Finger Lakes Times, September 27, 2015; (k) Bob Jamieson, "Finger Lakes Wineries Turn to Solar Power", Democrat & Chronicle, September 28, 2015; (l) "Finger Lakes Wineries Team Up for Large-Scale Solar Installations", Edible Finger Lakes, September 28, 2015; (m) "District Sun & Finger Lakes Wineries Team Up on Large-Scale Solar Project", PR Newswire, September 29, 2015.

- iv. This past quarter NYGB also commenced conversations with several municipalities, along with representatives from DPS and the Governor's office, to explore financing the upgrade and conversion of street lighting throughout the State as a joint initiative with the relevant municipalities and utilities where possible;
 - v. NYGB and NYSERDA are also working with the American Council on Renewable Energy and Connecticut Green Bank to prepare for an upcoming roundtable in November 2015 that will focus on various financing mechanisms to support electric vehicle infrastructure; and
 - vi. NYGB participated in various Climate Week Events in September 2015 to promote the work of NYGB, as part of NYSERDA and in turn as a key lever in New York's overall Reforming the Energy Vision strategy.
- (e) Clean Energy Fund & Continued Process to Complete Capitalization: Following filing of the "Petition of the New York State Energy Research and Development Authority to Complete Capitalization of the New York Green Bank" dated October 30, 2014 (the "**Petition to Complete Capitalization**"),³¹ together with the NYGB and NYSERDA "Reply Comments - Petition to Complete Capitalization" filed on February 2, 2015 (the "**Reply Comments**"),³² NYGB has continued to focus on all aspects of its ongoing capitalization process. This has included working closely with NYSERDA colleagues in connection with preparation and finalization of the Clean Energy Fund ("**CEF**") Information Supplement (the "**CEF Supplement**") which was filed with the Commission on June 25, 2015³³, as well as participating in the comment periods related thereto and providing responses both to public comments and DPS follow-up questions together with NYSERDA on August 28, 2015 and subsequently as required.

On July 16, 2015, the Commission considered the requests and proposals of NYSERDA and NYGB in connection with allocation of NYGB's 2015 capital installment, as set out in the Petition to Complete Capitalization and modified by the CEF Supplement. Pursuant to the "Order Approving Additional Capitalization with Modification for New York Green Bank" issued and effective July 17, 2015 (the "**2015 Capitalization Order**"),³⁴ the Commission authorized NYSERDA to reallocate uncommitted NYSERDA funds totaling \$150.0 million to support NYGB investments upon demonstration through a compliance filing that NYGB has committed \$150.0 million (representing approximately 75% of its total Authorized Capital of \$218.5 million, net of administration, cost recovery fee and evaluation) to fully negotiated, signed and closed agreements (the "**Cash Receipt Trigger**"). The compliance filing shall provide information on the executed investment agreements, inclusive of client/partner, a brief description of the transaction, funding commitment expressed in dollars, and date upon which commitment was made, that cumulatively achieve this milestone. While NYGB will receive the cash representing this additional allocated capital into Available Capital when it satisfies the Cash Receipt Trigger, as of July 17, 2015, NYGB's Authorized Capital has increased from \$218.5 million to \$368.5 million.

- (f) Advisory Committee Meeting: An Advisory Committee meeting was held on July 28, 2015. Information regarding NYGB's Advisory Committee – including its membership and charter - is accessible on NYGB's website at <http://greenbank.ny.gov/About/Advisory-Committee>. Advisory Committee meetings occur at least semi-annually.

³¹ Case 13-M-0412.

³² *Ibid.*

³³ Case 14-M-0094, "Proceeding on Motion of the Commission to Consider a Clean Energy Fund".

³⁴ Case 13-M-0412 and Case 14-M-0094.

(g) Critical Infrastructure & Processes: NYGB released “RFP No. 3: Fund Administrator, Loan/Investment Servicing and Custodial Services” earlier in 2015 to retain independent services to help meet and manage NYGB’s middle and back-office functions consistent with industry best practices for comparable funds (in both the private and public sectors). During the period covered by this Report, NYGB continued to scope out in detail its middle and back office needs and requirements and work with qualified and approved counterparties to identify and negotiate commercial terms to provide fund administration and loan/investment servicing support to NYGB. Material developments with respect to completion of contract negotiations and any scheduled commencement of the provision of fund administration and loan/investment services will be noted as they occur in corresponding Quarterly Reports.

Further, NYGB undertakes continuous efforts to ensure excellence in its risk and compliance tools and frameworks, and internal operations and procedures. During the period covered by this Report, NYGB has advanced and standardized its “know your customer” (“**KYC**”) procedures as part of monitoring and managing counterparty and related risks for NYGB, as well as further developed its procedures for periodic review and ongoing management of its investment portfolio.

(h) Continuing Contributions to Standardization & Best Practices: As part of its investment process, NYGB continues to develop business-level and legal term sheets and legal documentation that it expects in time to provide increased transaction efficiencies, demonstrate best practices and contribute to the standardization of the newer types of transactions and asset classes on which NYGB’s activities are focused.

3 Metrics

The Metrics were devised through collaboration between DPS and NYSERDA to provide clear and concise information to the Commission and stakeholders on a quarterly and annual basis.

Required metrics for the period July 1, through September 30, 2015 are set out in Table 2 below.

Consistent with prior Quarterly Reports, and reflecting the ongoing evolution of NYGB’s Metrics reporting, the following terms apply:

- (a) “**Authorized Capital**”, has the same meaning as “Capital” in the Metrics Plan;³⁵ and
- (b) “**Available Capital**” means, at the relevant time, the sum of all capital contributions received by NYGB, cumulative investment income (derived from investment of cash on hand), any Capital Gains, and cumulative fees and interest on Committed Funds and Deployed Funds, less the sum of Cumulative Operating Expenses, Deployed Funds and any Capital Losses,³⁶ all expressed in dollars.

NYGB will reach the point of self-sustainability when income generated by its activities is at least sufficient to meet ongoing expenses and any losses, all on a portfolio basis. As stated in the CEF Supplement³⁷, NYGB expects to be self-sufficient by the end of FY 2017-2018.

³⁵ That is, “the aggregate capital allocated to NY Green Bank from all public sources at the relevant time, including time-weighted adjustments to account for changes in NY Green Bank’s capitalization, expressed in dollars”.

³⁶ As defined in Section 3.2 of the Metrics Plan.

³⁷ See Section 10.4, page 167.

Table 2. Quarterly Metrics

Metric	Status – Q2 2015	Status – Q3 2015
Capital:		
Authorized	\$218.5 million ³⁸	\$368.5 million
Available	\$215.2 million	\$214.3 million
Cumulative Revenues	\$1.5 million	\$2.3 million
Cumulative Operating Expenses	\$5.3 million	\$6.7 million
Approved Investments	\$56.4 million	\$44.0 million ³⁹
Committed Funds⁴⁰	\$500,000	\$45.5 million ⁴¹
Deployed Funds⁴²	\$0	\$0 ⁴³
Overall Portfolio Size	\$500,000	\$45.5 million
Overall Portfolio Concentrations⁴⁴	100% Energy Efficiency	45% Energy Efficiency 55% Renewable Energy
Number & Type of NYGB-Supported Projects Financed	1 – Energy Efficiency	2 – Energy Efficiency 1 – Renewable Energy
Number & General Type of NYGB Clients & Partners	2 – C-PACE Developer, International Bank	6 – C-PACE Developer, International Banks, Specialty Finance Companies, Energy Project Developer, Commercial Bank
Estimated Lifetime Energy Saved by Fuel Type from Energy Efficiency Projects (MWh/MMBtu) and/or Lifetime Estimated Lifetime Clean Energy Generated (MWh) for Committed Funds & Deployed Funds	Not Yet Available	Estimated Lifetime Energy Saved by Fuel Type (Energy Efficiency): 400,000 – 420,000 MWh; and 5.5 – 6.0 million MMBtu Estimated Lifetime Clean Energy Generated: 548,000 – 1,322,000 MWh
Estimated Lifetime Primary Energy Saved from CHP (Btu) for Committed Funds & Deployed Funds	Not Applicable	Not Applicable
Estimated Clean Energy Generation Installed Capacity (MW), if applicable, for Committed Funds & Deployed Funds	Not Applicable	22.2 – 42.2 MW
Estimated Lifetime Greenhouse Gas Emission Reductions (metric tons) for Committed Funds & Deployed Funds	Not Yet Available	625,000 – 864,000 metric tons

³⁸ NYGB's Authorized Capital is currently made up of \$165.6 million pursuant to the Initial Capitalization Order, \$150.0 million pursuant to the 2015 Capitalization Order and \$52.9 million in RGGI funding. This aggregate amount does not include \$500,000 of U.S. Department of Energy ("DOE") funds specifically designated for providing loan loss reserve facilities to support

4 Subsequent Events

Since September 30, 2015, the following Milestones have occurred with respect to NYGB's business:

- (a) Transaction Execution & Closing: On October 8, 2015, NYGB closed a transaction with United Wind pursuant to which up to \$4.0 million in revolving construction loans from NYGB, together with investments provided by U.S. Bank, will support New York-based United Wind's installation of over 160 distributed wind energy projects for residential, agricultural and commercial customers throughout Central and Western New York⁴⁵;
- (b) Deployment of Capital: In the normal course of investment and operations, and pursuant to executed contractual arrangements, NYGB periodically deploys funds to its clients for the specific clean energy purposes of each transaction. Deployments commenced in early October 2015 and going forward will be reflected in Section 3 of all Quarterly Reports (i.e., in Deployed Funds) as they occur during the relevant quarters;
- (c) Enhanced Transparency: As part of NYGB's ongoing efforts to maximize transparency and provide all stakeholders and other interested parties greater insight into, and information regarding, NYGB's portfolio and pipeline, NYGB has added a new "Investments" section to its website containing details of NYGB's portfolio (including closed transactions and Transaction Profiles), pipeline, early successes, etc.⁴⁶ It is anticipated that this information will be updated quarterly.
- (d) Advisory Committee: An Advisory Committee meeting was held on October 27, 2015.

5 Defined Terms & Glossary

"**2015 Capitalization Order**" has the meaning given to that term in Section 2.2.

"**Active Pipeline**" has the meaning given to that term in Section 2.1.

commercial property-assessed clean energy ("**C-PACE**") projects which was transferred to NYGB by NYSERDA in May 2014, given the fit of these types of activities within the broader NYGB portfolio. The DOE funds have been committed by NYGB to the Energy Improvement Corporation transaction announced on May 28, 2014 (see <http://greenbank.ny.gov/News/In-the-News/2014-05-28--Energy-Improvement-Corporation-Announces-Agreement-with-Bank-of-America-Merrill-Lynch>) and, together with all repayments and related fees over time, must remain segregated and available only for the particular purposes originally intended.

³⁹ The value of Approved Investments varies over time reflecting that transactions vetted by the IRC and approved by NYSERDA's President & CEO generally progress through negotiation to executed and closed status (whereupon Capital is Committed). In some cases, however, it is possible that transactions stall and may move from active to dormant status and correspondingly be removed from "Approved Investment" classification to support NYGB's ongoing efficient capital availability and allocation to qualifying clean energy transactions.

⁴⁰ Where "**Committed Funds**" means, in any period, the aggregate funds to be provided by NYGB pursuant to fully negotiated client and partner financing agreements executed in that period, without such funds having yet been Deployed, expressed in dollars. "**Committed**" has a corresponding meaning. See Metrics Plan, page 5.

⁴¹ An additional \$4.0 million has been Committed to date in the fourth calendar quarter of 2015, with the result that total Committed Funds at the date of this Report equal \$49.5 million.

⁴² Where "**Deployed Funds**" means, in any period, the aggregate funds that have been advanced by NYGB subject to the terms of fully negotiated client and partner financing agreements executed in that period, expressed in dollars. "**Deployed**" has a corresponding meaning. See Metrics Plan, page 6.

⁴³ To date, in the fourth calendar quarter of 2015, NYGB has Deployed \$4.2 million of capital.

⁴⁴ Based on signed and closed transactions.

⁴⁵ See also Exhibit 2.

⁴⁶ See <http://greenbank.ny.gov/Investments/Portfolio-and-Pipeline.aspx> and <http://greenbank.ny.gov/Investments/Transaction-Profiles.aspx>.

“Advisory Committee” means the advisory committee of NYGB.

“Approved Investments” has the meaning given to that term in footnote 6 to this Report.

“Authorized Capital” has the meaning given to that term in Section 3.

“Available Capital” has the meaning given to that term in Section 3.

“Btu” means British thermal unit, a measure of heat energy in fuels.

“Business Plan” means NYGB’s current Business Plan filed with the Commission on June 19, 2015.

“Cash Receipt Trigger” has the meaning given to that term in Section 2.2.

“C-PACE” means Commercial Property Assessed Clean Energy.

“CEF” means the Clean Energy Fund.

“CEF Supplement” has the meaning given to that term in Section 2.2.

“CHP” means combined heat and power.

“Commission” means the New York State Public Service Commission.

“Committed Funds” has the meaning given to that term in the Metrics Plan.

“Cumulative Operating Expenses” has the meaning given to that term in footnote 11 to this Report.

“Cumulative Revenues” has the meaning given to that term in footnote 10 to this Report.

“Deployed Funds” has the meaning given to that term in the Metrics Plan.

“DOE” means the United States Department of Energy.

“DPS” means the New York State Department of Public Service.

“GJGNY” means Green Jobs Green New York.

“Greenlight Committee” means the NYGB committee of that name described in Exhibit 1.

“Initial Capitalization Order” has the meaning given to that term in Section 1.

“Investment RFP” has the meaning given to that term in Section 2.1.

“IRC” means the Investment & Risk Committee of NYGB.

“KYC” has the meaning given to that term in Section 2.2.

“Metrics” has the meaning given to that term in Section 1.

“Metrics Plan” has the meaning given to that term in Section 1.

“Milestones” has the meaning given to that term in Section 1.

“MMBtu” means million Btus.

“MW” means megawatt, a measure of installed energy generation capacity.

“MWh” means megawatt-hour, a measure of energy production.

“NYGB” means NY Green Bank.

“NYSERDA” means the New York State Energy Research and Development Authority.

“OBR” has the meaning given to that term in Section 2.2.

“Petition to Complete Capitalization” has the meaning given to that term in Section 2.2.

“Quarterly Reports” means the quarterly reports filed by NYGB with the Commission as contemplated in both the Initial Capitalization Order and the Metrics Plan as discussed in Section 1.

“Reply Comments” has the meaning given to that term in Section 2.2.

“Report” means this “Metrics, Reporting & Evaluation – Quarterly Report No. 5 (Through September 30, 2015), Case 13-M-0412, November 12, 2015”.

“RGGI” means the Regional Greenhouse Gas Initiative.

“Scoring Committee” means the NYGB committee of that name described in Exhibit 1.

“Transaction Profile” has the meaning given to that term in the Metrics Plan.

Since inception, NYGB continues to actively and consistently work on a large volume of potential transactions within a clear investment framework. As the steward of significant public funds, NYGB has established and adheres to certain investment and business practices – consistent with prudent practice in comparable industries and institutions. These practices are reflected in all aspects of NYGB’s business including originating, reviewing, evaluating, diligencing, credit underwriting, risk and mitigant assessments, structuring, negotiating, documenting and closing transactions, as well as ongoing risk and compliance and portfolio management principles – as has been described in NYGB’s prior filings with the Commission, including the annual Business Plan⁴⁷ and the Petition to Complete Capitalization⁴⁸ (together with the corresponding Reply Comments).⁴⁹

NYGB employs various organizational layers and bodies in the origination, evaluation and response to investment opportunities. In addition to NYGB bringing to bear the experience of its staff and management, input and review are required at prescribed points in the investment cycle from internal committees that evaluate and “greenlight” proposals, as well as from the IRC.

Scoring Committee

When NYGB receives proposals in response to an investment solicitation, those proposals are reviewed by the Scoring Committee, the members of which are all NYGB employees and designated by NYGB’s President. The purpose of the Scoring Committee is to review and evaluate all competitive proposals received by NYGB against NYGB selection criteria as described in the Investment RFP. This process is designed to ensure efficiency and standardization in NYGB’s approach to evaluating investment opportunities.

Greenlight Committee

No potential investment proceeds to full-scale diligence and negotiation of terms without vetting by the Greenlight Committee, which is made up of senior NYGB and NYSERDA staff. This committee reviews and makes recommendations (including with respect to requiring certain contingencies or conditions) to NYSERDA’s President & CEO with respect to a proposed transaction. Before any potential transaction is submitted to the IRC for review, prior issues raised by the Greenlight Committee must be addressed. The “greenlighting” requirement adds another check and balance on potential investments in NYGB’s pipeline to ensure that individual transactions meet credit quality standards and all other applicable investment criteria, are consistent with NYGB’s mandate and are appropriate from a risk perspective.

Investment & Risk Committee

No commitment of NYGB capital is made without vetting by the IRC and approval by NYSERDA’s President & CEO after considering recommendations made by IRC members. The IRC membership is also made up of senior NYGB and NYSERDA staff.

The principal steps involved in the advancement of any investment proposal received by NYGB are represented on [Figure 6](#). As shown in the figure, each transaction goes through a number of critical steps – each in turn involving detailed review, input and other work of the NYGB transaction team, its advisors, committees and clients and partners (including their respective advisors) in an iterative and ongoing

⁴⁷ Case 13-M-0412, filed June 19, 2015.

⁴⁸ Case 13-M-0412, filed October 30, 2014.

⁴⁹ Case 13-M-0412, filed February 2, 2015.

process until milestones are reached, culminating in the execution and closing of fully-negotiated transaction documentation.

Figure 6. NYGB Typical Transaction Process

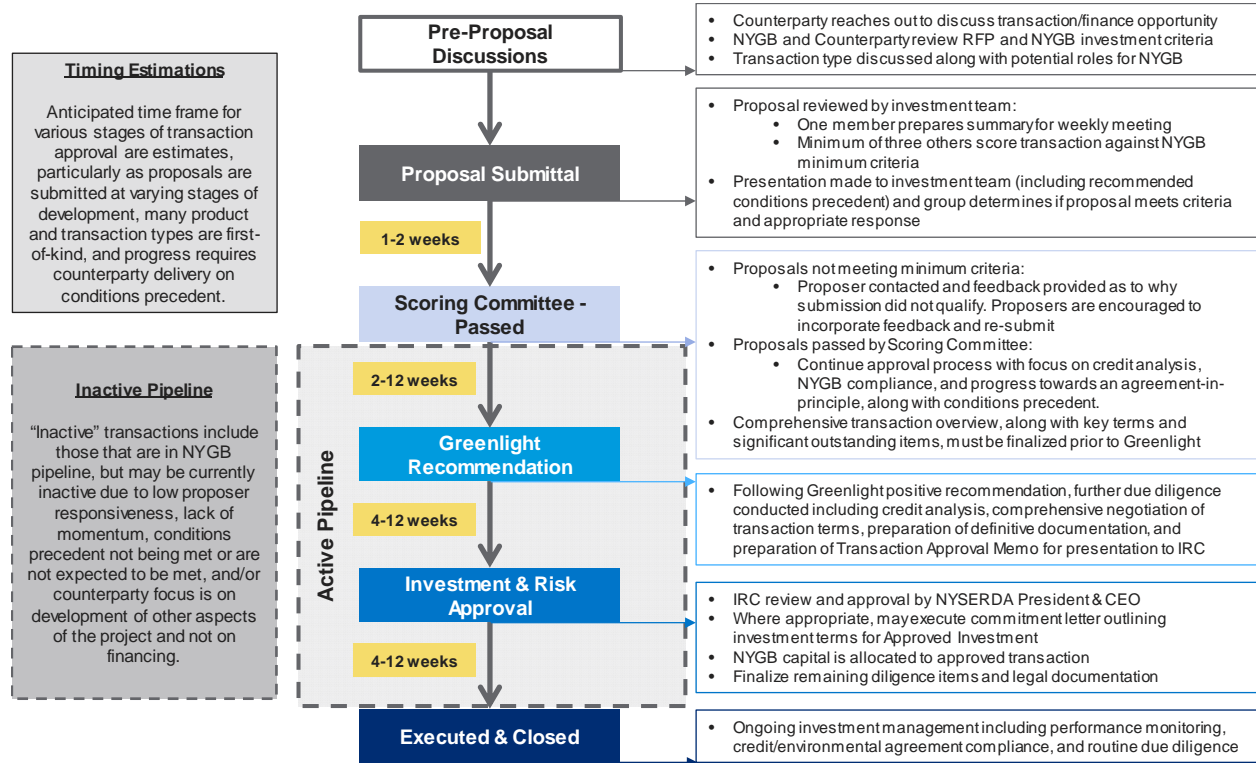


Exhibit 2. Transaction Profiles

In addition to providing the information contained in this Report on a quarterly basis and making the required annual Metrics filings, as NYGB signs and closes the definitive documentation for each investment, the corresponding “**Transaction Profile**” (broadly in the form of the template provided in Appendix A to the Metrics Plan) will be made available. Part I of each Transaction Profile – the Transaction Description – will be posted on NYGB’s website within a few weeks of signing and closing definitive financing/investment agreements. Transaction Profiles including both Part I and also Part II – Metrics and Evaluation Plan – will be included in the Quarterly Report corresponding to the period in which the relevant transaction was executed and closed.⁵⁰ Each complete profile provides key data in connection with the attributes of individual NYGB investments demonstrating in particular transaction fit with NYGB’s mandate, as well as estimated energy and environmental benefits and proposed ongoing impact evaluation approaches. Transaction Profiles for each of the investments which NYGB has closed since the date of the last Quarterly Report are included below.

⁵⁰ As required by the 2015 Capitalization Order, page 18.

September 2015

Expanding Residential Solar Opportunities for New York Homeowners

Level Solar

\$25.0 million credit facility provided by NY Green Bank (“NYGB”) will allow Level Solar, a New York-based solar provider that designs and installs systems at no cost to the customer, to materially grow its customer base. By providing renewable power to homeowners through long-term power purchase agreements, Level Solar is expected to reach sufficient scale to attract financing entirely through private markets.

Part I: Transaction Description

Level Solar designs and installs solar arrays on residential homes, and currently serves over 700 customers in Suffolk and Nassau Counties on Long Island. Each installation immediately reduces both carbon emissions and electricity cost for residential customers. Level Solar exemplifies the many emerging, successful renewable energy project developers in the State which, despite seasoned senior management teams and early marketplace success, experience challenges in securing adequate financing to support demand for their clean energy products and/or services. NYGB’s \$25.0 million financial warehouse facility¹ – which could ultimately be upsized to \$50.0 million – provides revolving credit to Level Solar to fund residential solar installations, enabling it to reach thousands of new customers. This transaction type is replicable for other participants in the solar market in New York State (“NYS”) – specifically smaller developers with early marketplace success but limited scale to date – providing precedent for further expanding residential renewable energy in the State.

Future refinancing(s) may occur via securitization – the sale of a pool of loans to third party investors – providing additional avenues to develop and expand this emerging asset class. To date, the market for residential solar securitizations has been limited with only a small number occurring globally since the end of 2013. NYGB’s \$25.0 million warehouse facility will be used by Level Solar to finance installation and development costs as it expands its current operations to achieve the scale needed for the business to be financed in commercial markets.

NYGB is participating in the Level Solar transaction with a division of U.S. Bank, which is investing approximately \$20.0 million in tax equity. While U.S. Bank is active in solar financings, this transaction establishes a fund dedicated primarily to NYS.

This Transaction Profile is provided pursuant to the “New York Green Bank – Metrics, Reporting & Evaluation Plan” developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on June 19, 2014 (the “**Metrics Plan**”).² The Transaction Profile contains specific information in connection with the Level Solar transaction (which was entered into on September 30, 2015), as required by the Metrics Plan.³

¹A warehouse 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 with respect to which there may be greater interest and long term investment alternatives in the commercial markets than might otherwise be available to finance each individual project. During the period (which could be a number of years) over which a particular portfolio of projects is being built or aggregated, the underlying facility is considered to be a “warehouse” in the figurative sense that it is the “place” where each developed and developing project is “held” as the larger portfolio of projects is built during the facility term.

² Case 13-M-0412.

³ See Section 5.4, pages 8 – 9 and Appendix A.

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation	Revolving Credit	\$25.0 million

Location(s) of Underlying Project(s)

New York. Level Solar's operations are based primarily on Long Island and NYGB's \$25.0 million warehouse facility is expected to be largely focused in that region. Level Solar's ongoing growth and expansion, including to other regions in NYS, will be enhanced by this transaction.

Types of Client and Partner Organizations that are Transaction Participants

	Name	Participant Type
Client	Level Solar	Energy Project Developer
Partners (current)	U.S. Bank	Commercial Bank
Partners (future)	To Be Identified	Institutional Investor(s)

Summary of Financing Market Objectives and Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Homeowners	Limited ability to contract for the supply of solar energy directly to homes without significant up front cost.	This transaction will produce material 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.
Capital Market Participants	Difficulty securing adequate financing (e.g., amount, tenor, terms) for certain solar developers with limited track record.	NYGB's participation in this transaction facilitates the growth of a NYS-based developer and demonstrates this type of business as being more readily financeable by private sector capital providers going forward. In addition, a broader and deeper market benefits all developers as the asset class achieves greater scale.
	Limited private capital interest to date in supporting smaller or less well-known developers active in New York's solar market, primarily restricted by lack of scale.	Where there is more limited historical system and end-user/loan performance data, track records for financings of this nature are less, in turn limiting private capital appetite for this type of exposure. For smaller developers and early entrants to an emerging market, lack of scale translates directly into higher costs for project procurement, permitting, and fees. NYGB's participation in this transaction is expected to help demonstrate that competitive risk-return profiles can be achieved through the provision of capital to qualified smaller solar developers, both within the State and generally.

Technologies Involved

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

Part II: Metrics and Evaluation Plan

Planned Energy and 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”.⁴ In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on⁵:

- Lifetime clean energy generated (MWh);
- Clean energy generation installed capacity (MW); and
- Lifetime GHG emission reductions (metric tons).

The estimated lifetime and annualized energy and environmental impacts of the expansion of Level Solar in New York at full deployment, facilitated by NYGB’s financial participation in this transaction, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Clean, renewable energy generated	528,000 MWh	1,292,000 MWh	21,120 MWh	51,680 MWh
Clean energy generation installed capacity ⁶	20 MW	40 MW	20 MW	40 MW
GHG emission reductions	150,000 metric tons	364,000 metric tons	6,000 metric tons	14,560 metric tons

Planned Market Characterization Baseline and 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.⁷ 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 and size (generation capacity and dollar value) of projects completed through the Level Solar financing;
- Expansion of geographic coverage of Level Solar operations; and
- Performance of 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 loan and project performance data by financing entities, as produced by this project;
- Decreased project cost for Level Solar and other developers (procurement, permitting, fees), due to increased experience and scale;

⁴ 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.

⁵ See Metrics Plan, Section 3.0, page 5.

⁶ Built clean energy generation capacity at full deployment of funds is the same for annualized and lifetime duration.

⁷ See Metrics Plan, Section 5.2 at page 8.

- Demonstration of competitive risk-return profiles for solar investment;
- Replication of Level Solar finance model by other solar developers (especially those with previously limited scope); and
- Future refinancing via securitization or sale of Level Solar loans to third-party investors.

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) and 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: participation rates, 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 actual system performance data to understand energy and environmental outcomes; selected on-site verification of measures installed; 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 Level Solar. 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 understanding risk in this technology area.

As with all NYGB investments, Level Solar 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 any projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.

Expanding Availability of Residential Energy Efficiency Loans to Homeowners Throughout New York State

RenewFund Finance

NY Green Bank (“NYGB”) will provide up to \$20.0 million in subordinated capital to RenewFund Finance (“RF Finance”), a wholly-owned subsidiary of Renew Financial,¹ to support the extension of up to \$100.0 million of unsecured loans to as many as 12,000 homeowners Statewide for residential renewable energy and energy efficiency improvements.

Part I: Transaction Description

NYGB has committed \$20.0 million of subordinated capital to RF Finance which, together with a warehouse line of credit provided by Citi, will finance the purchase of New York State (“NYS”) residential energy efficiency loan receivables, as well as a small portion of renewable energy loan receivables (given the size of individual loans available for homeowners only a minimal number are expected to be used towards the financing of renewable energy projects, so this profile will focus on energy efficiency factors and outcomes). Purchased receivables will be pooled with energy efficiency loan receivables originated under related RF Finance programs. The objective is to provide cost-effective funding for residential energy efficiency projects through RF Finance’s national financing platform, referred to as the Warehouse for Energy Efficiency Loans or “WHEEL”, created through a public-private partnership with Citi.

Since mid-2014, several other states have worked with RF Finance to offer low-cost renewable energy and energy efficiency loans to homeowners. NYGB will do the same for the benefit of NYS homeowners with the goal of increasing the scale of deployment in NYS. This program not only will support homeowner efficiency improvements, but also promote residential energy efficiency loan receivables as attractive alternative investments for banks and institutional investors. The success of RF Finance’s program is expected to increase market volume and liquidity for energy efficiency loans, and provide needed performance data (both in connection with installed improvements and underlying loans) and commercial track records. In turn, these developments should drive lower required returns (reflecting better understood and more efficiently priced risks), and reduce homeowners’ financing costs to make energy efficiency improvements.

This Transaction Profile is provided pursuant to the “New York Green Bank – Metrics, Reporting & Evaluation Plan” developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on June 19, 2014 (the “**Metrics Plan**”).² The Transaction Profile contains specific information in connection with the RF Finance transaction (which was entered into on September 25, 2015), as required by the Metrics Plan.³

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loans & Investments	Other - Subordinated Capital	\$20.0 million

¹ Formerly named “Renewable Funding”.

² Case 13-M-0412.

³ See Section 5.4, pages 8 – 9 and Appendix A.

Location(s) of Underlying Project(s)

Statewide.⁴ Loans of up to \$20,000 with a duration of up to 10 years will be offered throughout NYS to help finance renewable energy and energy efficiency improvements for up to 12,000 owner-occupied residences. The portfolio of loan receivables is expected to be securitized within approximately 18 months.

Types of Client and Partner Organizations that are Transaction Participants

	Name	Participant Type
Client	RF Finance	Specialty Finance Company
Partners (current)	Citi	Global Corporate & Investment Bank
Partners (future)	To Be Determined	Term Institutional Investor(s)

RF Finance is the master servicer of WHEEL 2.0, as well as the loan originator and manager of the New York State contractor network; and Citi is providing the senior secured warehouse facility.

Summary of Financing Market Objectives and Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Homeowners	High upfront costs prevent homeowners from investing in residential energy efficiency improvements.	The WHEEL platform – a nationwide program launching in NYS with financing from NYGB – was designed to apply public support for private funding to provide cost-effective consumer loans for residential energy efficiency improvements. WHEEL is able to mitigate unsecured loan risks because of standardized homeowner and contractor underwriting, and by pooling geographically diverse residential energy efficiency loans, resulting in cost-effective loan rates for homeowners.
Capital Market Participants	Investors are not substantially familiar with performance behavior of unsecured consumer loans for residential energy efficiency projects.	While Citi and NYGB are providing interim financing, the final financing for the loans will be raised through a rated asset-backed securitization when sufficient collateral (i.e., pool of residential energy efficiency loans) has been originated and aggregated in the warehouse facility. As investors become more familiar with the performance behavior of this asset class, broader market demand from investors may translate into better rate levels of future residential energy efficiency loans, benefitting homeowners. Continued growth and success of the WHEEL program is expected to broaden the recognition of this emerging asset class of residential energy efficiency in the securitization market.

Technologies Involved

Technology	Measures
Energy Efficiency	Energy Star appliances; qualified indoor and outdoor lighting fixtures and light bulbs; qualified heating, ventilation and air conditioning improvements; certain water conservation measures; qualified windows, skylights and doors; certain air sealing and insulation measures; energy monitoring and metering systems
Renewable Energy	Solar photovoltaic systems, solar thermal systems and solar water heaters

⁴ Defined as projects located in four or more regions of the State.

Part II: Metrics and Evaluation Plan

Planned Energy and 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”.⁵ In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on⁶:

- Lifetime energy saved by fuel type from efficiency projects (MWh/MMBtu) and/or lifetime clean energy generated (MWh);
- Clean energy generation installed capacity (MW); and
- Lifetime GHG emission reductions (metric tons).

The estimated lifetime and annualized energy and environmental impacts of the WHEEL program financing in New York at full deployment, facilitated by NYGB’s participation in this transaction, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Energy savings from efficiency measures (electric)	400,000 MWh	420,000 MWh	40,000 MWh	42,000 MWh
Energy savings from efficiency measures (fuel)	5.5 million MMBtu	6.0 million MMBtu	550,000 MMBtu	600,000 MMBtu
Clean, renewable energy generated	20,000 MWh	30,000 MWh	2,000 MWh	3,000 MWh
Clean energy generation installed capacity ⁷	2.2 MW		2.2 MW	
GHG emission reductions	475,000 metric tons	500,000 metric tons	47,500 metric tons	50,000 metric tons

Planned Market Characterization Baseline and 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.⁸ 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;
- Number and type of measures installed; and
- Number of contractors participating in program.

⁵ 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.

⁶ See Metrics Plan, Section 3.0, page 5.

⁷ Built clean energy generation capacity at full deployment of funds is the same for annualized and lifetime duration.

⁸ See Metrics Plan, Section 5.2 at page 8.

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:

- General understanding of renewable energy and energy efficiency loan performance by the financial community;
- View of banks and institutional investors as to the investment value of residential energy efficiency and renewable energy loan receivables;
- Increased awareness and use of residential loan and project performance data produced by this project by financing entities;
- Market volume of residential energy efficiency and renewable energy loans;
- Scale of energy efficiency and renewable energy investments by homeowners in NYS;
- Homeowner financing costs for energy efficiency and renewable improvements;
- Number of securitizations for residential energy efficiency and renewable energy loan pools in place; and
- Number of commercial banks offering similar warehouse lines of credit.

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) and 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: participation rates, project scale information, interest in renewable energy and energy efficiency, and influence of the intervention on financial markets and homeowners. 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 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 loan 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 of approximately 8% or more of total consumption. Should the project makeup indicate that billing analysis is not a viable method for certain segments of the participants, other methods will be considered. For renewable energy projects, meter reads of energy generation will be taken with on-site verification conducted as needed. Importantly, all customer data will be anonymized and/or aggregated prior to being reported or published.

As with all NYGB investments, RF Finance 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.

Expanding New York's Distributed Wind Energy Resources

United Wind

United Wind will install over 160 distributed wind energy systems for residential, agricultural and commercial customers throughout Central and Western New York State ("NYS"), facilitated by a \$4.0 million revolving construction loan from NY Green Bank ("NYGB"). United Wind's systems will foster greater access to renewable energy, while NYGB's participation will help develop a strong track record for distributed renewable energy construction financings in the State.

Part I: Transaction Description

United Wind is a New York-based distributed wind system lease provider that will partner with NYGB to install over 160 wind energy systems throughout Central and Western NYS over the next two years. Each installation will utilize a single 10 kW wind turbine generator, expected to generate in aggregate between 64,000 and 78,000 MWh of clean energy over the 30-year useful life of the total project portfolio. NYGB is partnering with both United Wind (the project developer) and U.S. Bank (the tax equity investor) to advance this first-of-its-kind distributed energy generation construction loan product. With NYGB's participation in this transaction, United Wind will be able to offer its signature product: "WindLease", a turnkey solution that allows residential, agricultural and commercial customer lessees to install distributed wind systems, resulting in the generation of clean energy and immediate reductions in electric bills, with no upfront cost to the end-user. The WindLease program is projected to help over 160 new customers install wind energy systems, greatly broadening the distributed energy types and financing options available to interested consumers, while also expanding asset classes for private capital investment.

This Transaction Profile is provided pursuant to the "New York Green Bank – Metrics, Reporting & Evaluation Plan" developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the "**Commission**") on June 19, 2014 (the "**Metrics Plan**").¹ The Transaction Profile contains specific information in connection with the United Wind transaction (which was entered into on October 7, 2015), as required by the Metrics Plan.²

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loans & Investments	Revolver	\$4.0 million

Location(s) of Underlying Project(s)

Multiple Regions.³ Qualifying end-users throughout Central and Western New York will have the opportunity to benefit from United Wind's WindLease product, including residential, agricultural and small commercial customers.

¹ Case 13-M-0412.

² See Section 5.4, pages 8 – 9 and Appendix A.

³ Defined as projects located in two or three regions of the State.

Types of Client and Partner Organizations that are Transaction Participants

	Name	Participant Type
Client	United Wind	Energy Project Developer
Partners	U.S. Bank	Commercial Bank
	Approved Installers and Equipment Suppliers	Industry Vendors

Summary of Financing Market Objectives and Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Residential, Agricultural and Commercial Customers	Limited access to distributed energy solutions and high energy bills.	This transaction aims to provide NYS residential, agricultural and commercial customers with greater access to distributed energy solutions and, ultimately, to more affordable energy, as United Wind's lease product is estimated to save customers up to 30% - 50% on their energy bills over 30 years.
Capital Market Participants	Limited private capital interest to date in supporting the construction of distributed energy projects in New York's clean energy marketplace.	There is currently insufficient scale in this sector, representing a material barrier to private capital interest in providing construction finance for distributed clean energy projects. NYGB's key objective in this transaction is to establish a precedent for a construction loan for distributed generation and to address limited interest to date in supporting the construction of distributed energy projects. NYGB's participation as construction lender in this transaction establishes a market precedent for construction financing of a portfolio of distributed energy generation projects. NYGB transactions are designed to be easily replicated and the structure of this construction loan will not only be applicable to wind, but replicable for other clean energy technologies. The financing of multiple distributed wind projects will also help establish a performance track record and provide investors with critical data and greater confidence in investments of this type.

Technologies Involved

Technology	Measures
Renewable Energy	Onshore wind systems

Part II: Metrics and Evaluation Plan

Planned Energy and 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”.⁴ In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on⁵:

- Lifetime clean energy generated (MWh);
- Clean energy generation installed capacity (MW); and
- Lifetime GHG emission reductions (metric tons).

The estimated lifetime and annualized energy and environmental impacts of projects by United Wind in New York at full deployment, facilitated by NYGB’s financial participation, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Clean, renewable energy generated	64,000 MWh	78,000 MWh	2,133 MWh	2,600 MWh
Clean energy generation installed capacity ⁶	1.7 MW		1.7 MW	
GHG emission reductions	18,000 metric tons	22,000 metric tons	600 metric tons	733 metric tons

Planned Market Characterization Baseline and 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.⁷ 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 distributed wind energy systems in development and completed under the WindLease program;
- Average and aggregate dollar value of distributed wind energy systems (by end-use sector) completed under the WindLease program; and
- Development of data set on technology performance and loan performance for distributed wind energy projects.

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

- Increased deployment of distributed wind energy projects in NYS;
- Increased awareness and use of technology performance and loan performance data by financing entities;

⁴ 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.

⁵ See Metrics Plan, Section 3.0, page 5.

⁶ Built clean energy generation capacity at full deployment of funds is the same for annualized and lifetime duration.

⁷ See Metrics Plan, Section 5.2 at page 8.

- Expansion of private capital interest in construction loan financing for distributed clean energy projects;
- Application of similar construction financing approaches for other distributed wind (or other clean energy) projects; and
- Similar construction financing for distributed clean energy projects offered by other private lenders.

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) and 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: participation rates, project scale information, interest in financing options – specifically WindLease – 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 actual system performance data to understand energy and environmental outcomes; selected on-site verification; and/or electronic monitoring of clean energy generation. Impact evaluation is expected to include periodic review and analysis of actual wind electricity production data collected by United Wind. 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 risk affiliated with this technology type.

As with all NYGB investments, United Wind 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.