



# NY Green Bank

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## Metrics, Reporting & Evaluation

Quarterly Report No. 6

(Through December 31, 2015)

Case 13-M-0412

February 16, 2016

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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 Commission<sup>1</sup> (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**”).<sup>2</sup> 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.”<sup>3</sup>

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 fourth (calendar) quarter of 2015 and presents the situation as of December 31, 2015. In addition, any material subsequent events occurring in the period from January 1, 2016 through the date of this Report are described in Section 4.

*Table 1. Metrics & Data Collection<sup>4</sup>*

Metric Type	Metric	Data Collection	Timing
Risk Management Metrics <sup>5</sup>	<ul style="list-style-type: none"> <li>▪ Total Capital (authorized and available)</li> <li>▪ Approved Investments<sup>6</sup></li> <li>▪ Committed Funds</li> <li>▪ Deployed Funds</li> <li>▪ Overall Portfolio size and concentrations<sup>7</sup></li> </ul>	NYGB records <sup>8</sup>	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

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

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

<sup>3</sup> *Ibid*, pages 18 – 19 and 21, including Ordering Clause 8, page 25. Also, Metrics Plan, Section 4.1, pages 6 – 7.

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

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

<sup>6</sup> “**Approved Investments**” represent proposed investments that have moved through NYGB’s transaction process – 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” or “Deployed Funds” (both discussed in Section 3). Once an Approved Investment has been fully negotiated, executed and closed, it becomes “Committed” and/or “Deployed” and no longer represents a current Approved Investment. Equally, if an Approved Investment becomes dormant for any reason for a continuous period of one year prior to being fully negotiated, executed and closed and at the end of that period the probability of that investment moving forward towards execution and closing is regarded as low, it may also be removed from the category of Approved Investments. In that event, all capital amounts corresponding to that investment are regarded as released and available for other NYGB investments.

<sup>7</sup> 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, all within the context of NYGB’s specific State and clean energy focus in meeting its mandate.

<sup>8</sup> 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
	<ul style="list-style-type: none"> <li>Portfolio Impairment (percent currently Impaired and projected recoveries)</li> </ul>	NYGB records	Reported annually, consistent with NYGB's fiscal year (April 1 – March 31). First annual report filed within 90 days <sup>9</sup> after March 31, 2015
Financial & Market Metrics	<ul style="list-style-type: none"> <li>Cumulative Revenues<sup>10</sup></li> <li>Cumulative Operating Expenses<sup>11</sup></li> <li>Number and type of NYGB-supported projects financed</li> <li>Number and general type of NYGB clients and partners</li> </ul>	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"> <li>Audited Financials</li> <li>Mobilization Ratio</li> <li>Return on Investment</li> <li>Capital Redeployment Cycle Time</li> </ul>	NYGB records	Reported annually, consistent with NYGB's fiscal year (April 1 – March 31). First annual report filed within 90 days <sup>12</sup> after March 31, 2015
	<ul style="list-style-type: none"> <li>Level of awareness, knowledge and confidence of financial institutions and market intermediaries in clean energy investments<sup>13</sup></li> </ul>	Market evaluation <sup>14</sup>	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"> <li>Estimated lifetime and first year<sup>15</sup> energy saved by fuel type from energy efficiency projects (MWh/MMBtu)<sup>16</sup> and/or estimated lifetime and first year clean energy generated (MWh)<sup>17</sup></li> <li>Estimated lifetime and first year primary energy saved from CHP (Btu)</li> <li>Estimated clean energy generation installed capacity (MW), if applicable</li> <li>Estimated lifetime greenhouse gas emission reductions (metric tons)</li> </ul>	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

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

<sup>10</sup> “**Cumulative Revenues**” means the aggregate of all NYGB’s revenues since inception, including income from all sources but excluding fair market value adjustments (either increases or decreases) relating to NYGB capital held in U.S. Treasury securities.

<sup>11</sup> “**Cumulative Operating Expenses**” means the aggregate of all NYGB’s Operating Expenses since inception.

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

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

<sup>14</sup> 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.

<sup>15</sup> First year metrics have been added to this Report pursuant to the CEF Order (as defined in [Section 4](#)).

<sup>16</sup> 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.

<sup>17</sup> This Metrics 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

As at December 31, 2015:

- Over \$1.0 billion in investment proposals have been received to date, representing total proposed clean energy investment in the State of ~\$4.0 billion;
- Active pipeline is ~\$500.0 million (averaging \$200.0 - \$450.0 million over time) and continues to be diversified across technology, location and end-user segment;
- NYGB has a growing portfolio of investments, with an overall portfolio size of \$54.5 million;
- A ~5:1 leverage ratio of private capital to NYGB funds is expected to be achieved on the first set of transactions<sup>18</sup>;
- Continued transaction revenue growth; and
- Current portfolio lifetime estimated greenhouse gas (“GHG”) reductions up to 1.4 million metric tons, equivalent to removing more than 21,700 cars from the road for a period of 14 years.

NYGB’s investment activities fall into two broad categories of activities respectively relating to:

- (a) Transactions that have been closed, which collectively comprise NYGB’s investment “**Portfolio**”; and
- (b) 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.

During the quarter, NYGB closed two innovative transactions – one involving the commitment of an additional \$5.0 million to Energy Improvement Corporation (“**EIC**”) and the other, the commitment of \$4.0 million to United Wind. These transactions are described in [Section 2.1.2](#) and [Exhibit 1](#).

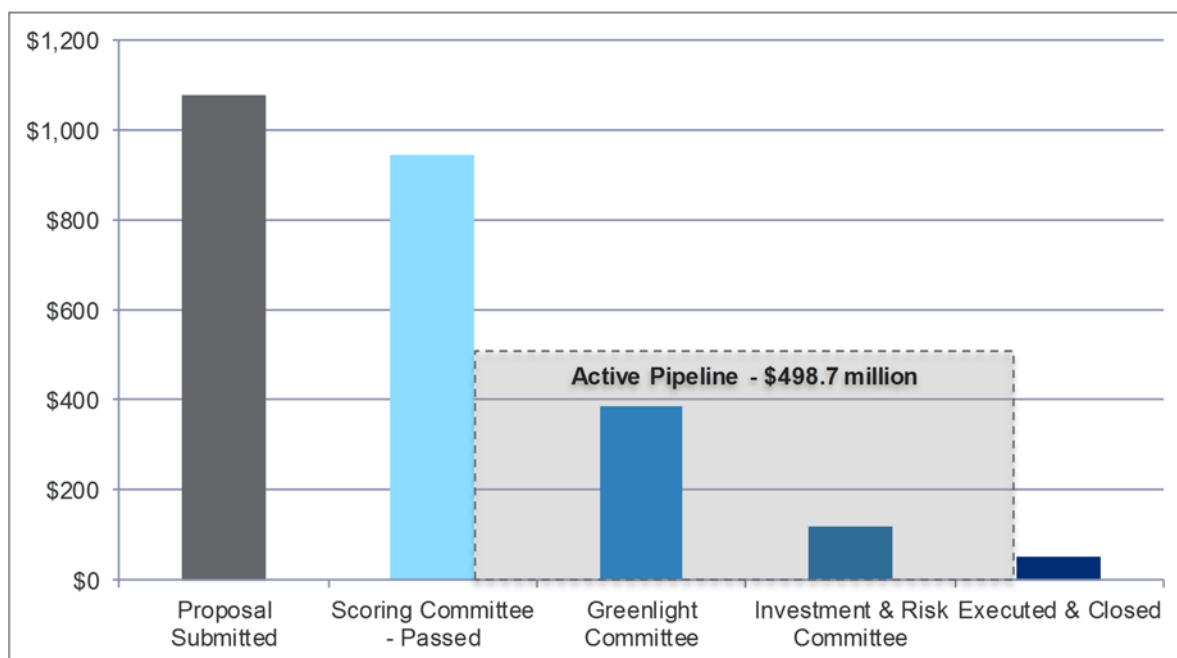
NYGB’s overall transaction status is summarized in [Figure 1](#),<sup>19</sup> showing that since inception through December 31, 2015:

- (a) ~\$1.1 billion of proposals have been received and evaluated by NYGB’s Scoring Committee;
- (b) \$946.6 million of transactions have passed Scoring Committee evaluation;
- (c) \$386.4 million of transactions have received Greenlight Committee recommendation for advancement;
- (d) \$120.9 million of transactions have been vetted by the IRC and approved by NYSERDA’s President & CEO; and
- (e) \$54.5 million of transactions have been fully executed and closed, comprising NYGB’s Portfolio.

<sup>18</sup> This ratio does not take into account the additional leverage effects that are expected to be realized as investments are repaid and NYGB funds are redeployed over time.

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

Figure 1. Transaction Status (\$ Millions)



Also as shown in [Figure 1](#), NYGB currently has an active pipeline of \$498.7 million.<sup>20</sup> “**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 \$9.0 million. This is made up of the following two transactions:

- (a) Expanding New York’s Distributed Wind Energy Resources: \$4.0 million committed to a revolving construction loan for United Wind - a New York-based distributed wind system lease provider with plans to install over 160 10kW wind energy systems throughout Central and Western NYS over the next two years. NYGB is partnering with both United Wind (as project developer) and U.S. Bank (as 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 in the State 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; and

<sup>20</sup> 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. NYGB expects to manage an Active Pipeline of \$200.0 - \$450.0 million on average at any time.

(b) Supporting & Accelerating the Expansion of Energize NY PACE Finance Throughout New York State: \$5.0 million letter of credit facility provided to EIC to support its Energize NY Finance product. This initiative uses the Property Assessed Clean Energy (“**PACE**”) loan mechanism to finance qualified energy improvements to buildings for commercial property owners and not-for-profits located in participating NYS municipalities. Under the PACE structure, commercial and not-for-profit real estate owners can effectively borrow to finance energy improvements to their properties and repay this debt through additional finance charges that are included in the property tax bills collected by the participating municipalities. As PACE requires that expected energy cost savings exceed the additional annual PACE debt service payments, property owners will benefit from energy savings and any increase in the value of their upgraded buildings. The PACE mechanism eliminates the burden that large upfront capital expenditures can place upon commercial property owners and not-for-profits that so often are a barrier to making energy efficiency investments. NYGB’s letter of credit helps to establish a reserve fund to support participating municipalities’ obligations to pay PACE debt service to EIC if collections of PACE charges are insufficient, whether due to late payment or default by the property owner. Municipalities are required to repay NYGB upon the earlier of a recovery of the delinquent amount, or upon a date certain, generally four years from the date funds are drawn.

Further details on these transactions are included in Exhibit 1.

### **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**”) <sup>21</sup>. Through December 31, 2015, proposals requesting \$1.1 billion of NYGB capital have been received, in connection with total proposed clean energy investments in New York State of an estimated \$4.0 billion <sup>22</sup> (including private sector capital; see Figure 2 and Figure 3).

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<sup>21</sup> Clean Energy Financing Arrangements – Request for Proposals (RFP) No. 1, available at <http://greenbank.ny.gov/Partnering-With-Us/Propose-an-Investment>.

<sup>22</sup> 74% of the proposals received by NYGB identify the total project value of the investments proposed at \$3.3 billion. While 26% 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. \$1.1 Billion Requested NYGB Investment by Technology

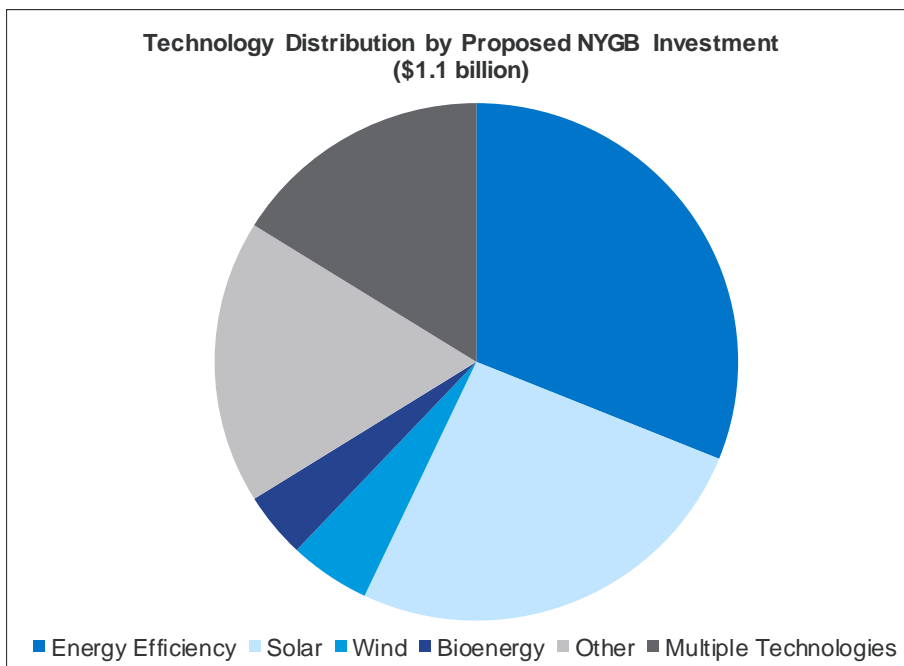
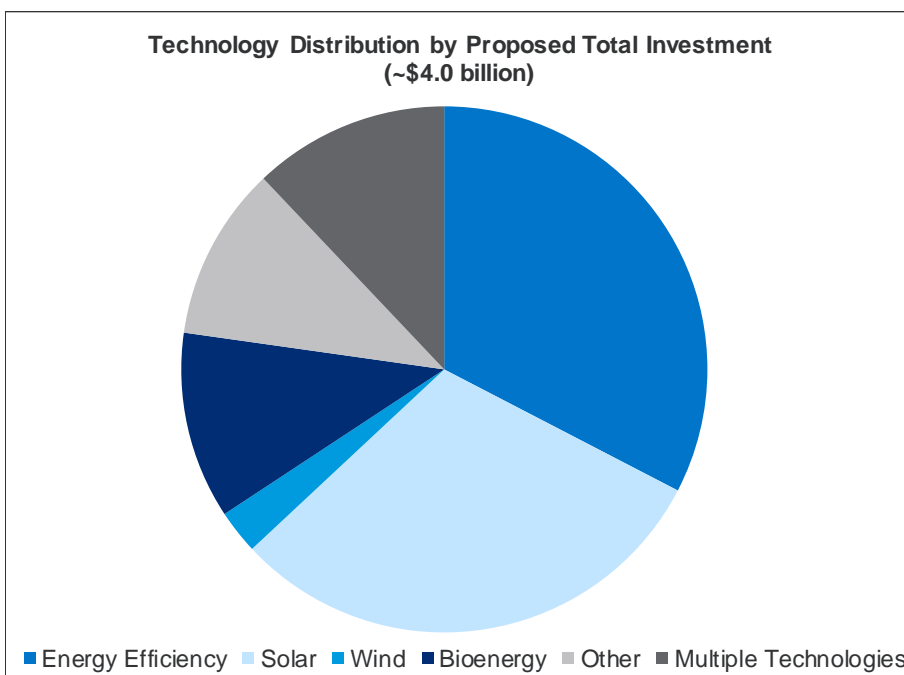


Figure 3. ~\$4.0 Billion<sup>23</sup> Proposed Total Investments by Technology

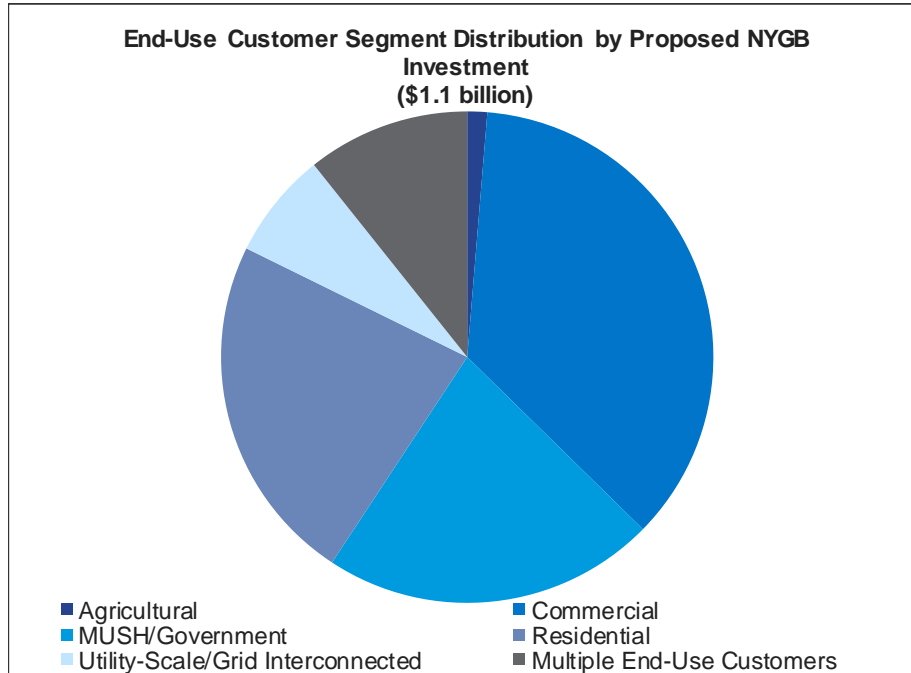


<sup>23</sup> Represents total proposed investment amount, including private capital.

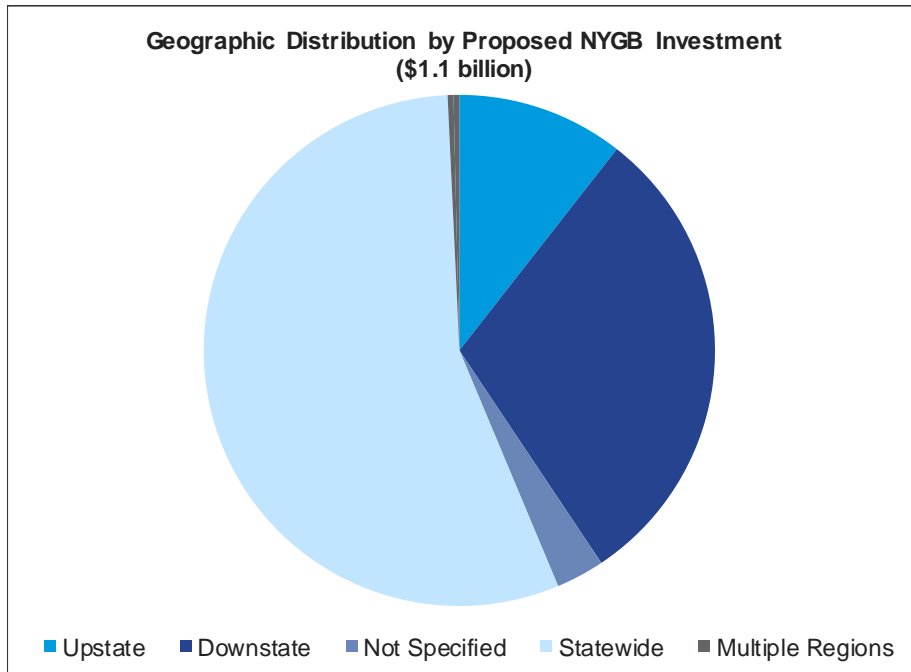


The proposals received to date are diverse by end-use customer segmentation and locations throughout the State as shown in [Figure 4](#) and [Figure 5](#).

*Figure 4. \$1.1 Billion Requested NYGB Investment by End-Use Customer Segment*



*Figure 5. \$1.1 Billion 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. In the last calendar quarter, major milestone achievements include:

- (a) Ongoing Execution on 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.
- (b) Building Upon Early Successes & Expanding the NYGB "Halo Effect": NYGB's active participation in transactions in and of itself has facilitated its clients and partners in advancing their businesses and projects in material ways. Some examples of these early successes are included on NYGB's website.<sup>24</sup> Benefits of NYGB's involvement in transactions, even at early stages, include hiring new staff so that NYGB's clients' can ramp up deployment in their respective clean energy businesses, as well as third party equity capital raises, among others. Positive effects flow from NYGB's involvement in proposed transactions, often irrespective of whether or not any such transaction has been closed or funds Deployed. Where NYGB's involvement yields positive outcomes with zero or minimal Deployment of NYGB funds, New York ratepayers ultimately reap the benefits of the resulting clean energy market transformation.
- (c) Public Reporting & Metrics: Filing with the Commission, on November 12, 2015, of the Quarterly Report for the period ending September 30, 2015.
- (d) 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 expanding third party interest in partnering with NYGB to increase clean energy investments in the State.

Specifically, in the period covered by this Report, NYGB team members have presented at ~20 conferences and events. In addition, a growing volume of articles mentioning NYGB have been published nationally and internationally in the same period.<sup>25</sup>

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<sup>24</sup> See [www.greenbank.ny.gov/Investments/Portfolio-and-Pipeline](http://www.greenbank.ny.gov/Investments/Portfolio-and-Pipeline).

<sup>25</sup> (a) Karen M. Shan, "Hudson Valley Green Expo to Showcase NY Green Bank," *Poughkeepsie Journal*, October 1, 2015; (b) Colin Mahoney, "United Wind Secures \$13.5M Financing for Major Expansion of its Wind Lease Program," *Market Watch*, October 8, 2015; (c) Steven Cohen, "Sustainability has Entered the Political Mainstream," *Energy Collective*, October 13, 2015; (d) Thomas Burton, "Policy and Legal Implications of Implementing Renewable Energy at Scale: Finance Gap for Innovation Deployment," *The National Law Review*, October 14, 2015; (e) "Governor Cuomo Announces Three NY Green Bank Transactions to Improve Access to Clean Energy and Reduce Greenhouse Gas Emissions," *Investor Ideas*, October 21, 2015; (f) Michelle Froese, "Three new NY Green Bank deals will expand New York's clean-energy markets," *Windpower Engineering & Development*, October 21, 2015; (g) Fred von Wiegen, "Three NY Green Bank Deals Improve Access to Clean Energy," *Finger Lakes Daily News*, October 21, 2015; (h) David Giambusso, "NY Green Bank announces first major allocations," *Politico*, October 21, 2015; (i) Larry Rulison, "Cuomo's Green Bank approves \$49 million in funding," *Times Union*, October 21, 2015; (j) David Bertola, "United Wind recipient of NY Green Bank funding," *Buffalo Business First*, October 22, 2015; (k) "NY Green Bank providing \$49M for 3 energy projects," *Washington Times*, October 22, 2015; (l) Ali Stewart, "NY Green Bank to fund local solar and wind power," *News10*, October 22, 2015; (m) Eric Reinhardt, "NY Green Bank awards \$4 million to a downstate firm with

- (e) Continuing Stakeholder Outreach & Communications: NYGB staff continued to meet with various stakeholders through industry conferences, working groups and targeted outreach. Specific highlights include:
- i. NYGB continued its work with NY Prize<sup>26</sup> on a webinar providing information on financing opportunities for NY Prize Round 1 Winners. Discussions are underway for additional events to help bring more private capital into microgrid financings;
  - ii. In an initiative aimed at key industry incumbents, NYGB co-hosted a meeting on November 18, 2015 together with the Connecticut Green Bank and the American Council on Renewable Energy, to examine opportunities for financing electric vehicle (“EV”) infrastructure. This meeting was the first in a proposed series aimed at clearly articulating the requisite components for any EV infrastructure proposal submitted to NYGB;
  - iii. NYGB team members continue to participate in events across the State as part of an ongoing series of meetings which NYGB periodically organizes in various cities to engage potential clients and partners and introduce them to NYGB’s offerings. As an example, NYGB President Alfred Griffin participated in meetings in New Paltz, speaking with local businesses and institutions about partnering with NYGB, including discussion around its mandate, process, and products. Those meetings have already resulted in at least one investment proposal;
  - iv. NYGB has also been involved in several meetings focused on addressing financing gaps related to low and moderate income (“LMI”) households. Discussions are ongoing with

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projects in CNY,” *CNY Business Journal*, October 22, 2015; (n) Claude Solnik, “Level Solar taps \$25M in state loans,” *Long Island Business News*, October 22, 2015; (o) Sarah Dougherty, “Starting with \$49 Million, NYGB Works to Get Billions of Clean Energy Private Investment,” *NRDC Switchboard*, October 22, 2015; (p) “NY Green Bank Throws More Support Behind Clean Energy,” *North American Wind Power*, October 22, 2015; (q) Carl Weinschenk, “New York – Directly and Indirectly – Providing \$227M in Energy Funding,” *Energy Manager Today*, October 22, 2015; (r) “Governor Cuomo to cut emissions, boost clean energy with new investment,” *Penn Energy*, October 22, 2015; (s) “New York Adds \$45 Million in New Funding for Green Bank Program,” *Solar Industry Magazine*, October 22, 2015; (t) “Governor Cuomo Announces Three NY Green Bank Transactions to Improve Access to Clean Energy and Reduce Greenhouse Gas Emissions,” *Real Estate Rama*, October 23, 2015; (u) “New York \$49 Million in Green Bank Funding,” *PV Magazine*, October 23, 2015; (v) Katherine Tweed, “New York’s Green Bank Invests \$49 M in Solar, Wind and Efficiency,” *Greentech Media*, October 23, 2015; (w) “New York’s Green Bank Invests Millions in Solar, Wind and Efficiency,” *RenewableEnergy.com*, October 27, 2015; (x) Elisa Wood, “Green Banks to Finance Microgrids?” *Microgrid Knowledge*, November 2, 2015; (y) Scott Waldman, “State’s \$1B ‘green bank’ gets off to a slow start,” *Politico*, November 16, 2015; (z) Doug Sims, “Green Bank Network to Turbocharge Financing for Clean Energy Projects to Help Meet Global Climate Goals,” *NRDC Switchboard*, December 7, 2015; (aa) Scott Waldman, “New York to join international network of Green Banks,” *Politico*, December 7, 2015; (bb) “Global Green Bank Network Forms to Speed Shift to Clean Energy,” *North American Wind Power*, December 7, 2015; (cc) “COP21: Global Green Bank Network Debuts in Paris,” *Environment News Service*, December 7, 2015; (dd) “Global Green Bank Network to Coordinate Funding for Clean Energy,” *Solar Industry Magazine*, December 7, 2015; (ee) Karl-Erik Stromsta, “Green Bank Network Founded by Six Global Institutions,” *ReCharge News*, December 7, 2015; (ff) “First Global Green Bank Network Will Speed Shift to Clean Energy,” *Alternemag.com*, December 8, 2015; (gg) Andrea Sears, “NY Joins Global Green Bank Network,” *Public News Service*, December 8, 2015; (hh) “Governor Cuomo Announces NY Green Bank as a Leading Founder in First Global Green Bank Network,” *Investor Ideas*, December 8, 2015; (ii) Tsvetomira Tsanova, “Green banks unite to grow renewables investment globally,” *SeeNews Renewables*, December 8, 2015; (jj) Priyanka Shrestha, “Global Green Bank Network Debuts in Paris,” *Energy Live News*, December 8, 2015; (kk) Cristina Jennings, “Green Banks unite to grow renewables investment globally,” *The Telegraph Times*, December 8, 2015; (ll) Alfred Sanchez, “NY Joins Global Green Bank Network,” *The Union Oracle*, December 8, 2015; (mm) Dillon Hess, “Global Green Bank Network Forms to Speed Shift to Clean Energy,” *Chronicle Daily*, December 8, 2015; (nn) Andrea Sears, “NY Joins Global Green Bank Network,” *News LI*, December 8, 2015; (oo) Giles Parkinson, “Paris, COP21: Ministers move in, as do the climate deniers,” *Renew Economy*, December 8, 2015; (pp) “Governor Cuomo Announces NY Green Bank as a Leading Founder in First Global Green Bank Network,” *Real Estate Rama*, December 8, 2015; (qq) Elisa Wood, “A New Way to Replicate Green Banks Worldwide,” *Energy Efficiency Markets*, December 8, 2015; (rr) R. Kamalavacini, “Green Bank Network formed to Provide Capital,” *The Malaysian Reserve*, December 9, 2015; (ss) Paul Dvorak, “First Global Green Bank Network Will Speed Shift to Clean Energy,” *Windpower Engineering & Development*, December 10, 2015; (tt) Diane Cardwell, “Wind Power Spreads Through Turbines for Lease,” *NY Times*, December 18, 2015; (uu) Daniel Cusick, “Wind industry strives to expand with leased turbines,” *E&E Publishing*, December 24, 2015.

<sup>26</sup> See <http://www.nyserda.ny.gov/All-Programs/Programs/NY-Prize>.

representatives from various Community Development Finance Institutions (“**CDFIs**”) in an effort to identify potential collaborations between CDFIs and NYGB in ways that benefit LMI end-users, among others; and

- v. NYGB continues its cross-agency collaboration in support of developing a Statewide approach to structuring, financing and implementing LED street lighting, together with interested utilities and municipalities.
- (f) **NYGB 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**”),<sup>27</sup> together with the NYGB and NYSERDA “Reply Comments - Petition to Complete Capitalization” filed on February 2, 2015 (the “**Reply Comments**”),<sup>28</sup> NYGB continued to focus on all aspects of its ongoing capitalization process. This included working closely with NYSERDA colleagues in connection with requested follow-up to the Clean Energy Fund (“**CEF**”) Information Supplement (the “**CEF Supplement**”) filed with the Commission on June 25, 2015<sup>29</sup>, including participating in presentations and updates and providing responses to other questions as required.
- (g) **NYGB Impact Reporting & Evaluation**: NYGB is currently working with Yale School of Management, Master of Advanced Management students on a multi-month project relating to standardizing the calculation and reporting of energy, environmental and economic development benefits associated with NYGB investments. This project commenced in late December 2015 and will continue through mid- 2016.
- (h) **International Green Bank Network**: On December 7, 2015 Governor Cuomo announced that NYGB was a leading founder of the first global green bank network – a partnership founded with five other green banks.<sup>30</sup> This network allows NYGB and other participants to effectively leverage member experiences and precedents. In turn, this promotes the ability to address market barriers and provide appropriate financing solutions in an expeditious and efficient manner, including by (x) simplifying processes, (y) aggregating data, and (z) standardizing financial products, documentation and underwriting processes.
- (i) **Advisory Committee**: An Advisory Committee meeting was held on October 27, 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.
- (j) **Critical Infrastructure & Processes**: NYGB seeks 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). The priority infrastructure components include fund administration and loan/investment servicing, together with a customer relationship management platform specifically configured for investment funds and permitting the management of NYGB’s business from pre-proposal through post-closing. Material developments with respect to selection of service providers and platforms, completion of contract negotiations and any scheduled

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<sup>27</sup> Case 13-M-0412.

<sup>28</sup> *Ibid.*

<sup>29</sup> Case 14-M-0094, “Proceeding on Motion of the Commission to Consider a Clean Energy Fund”.

<sup>30</sup> Including the UK’s Green Investment Bank, Australia’s Clean Energy Finance Corporation, the Connecticut Green Bank, Japan’s Green Fund, and the Malaysian Green Technology Corporation.

commencement of the provision of key 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 further streamlined its transaction process and continues to improve its ongoing Portfolio monitoring and management procedures.

- (k) **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. As required by, and consistent with, the Commission's "Order Authorizing the Clean Energy Fund Framework"<sup>31</sup> (the "CEF Order"), NYGB will be updating the Metrics Plan over the coming months.<sup>32</sup>

Required metrics for the period October 1, through December 31, 2015 are set out in Table 2<sup>33</sup> 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;<sup>34</sup> 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,<sup>35</sup> all expressed in dollars.

Table 2. Quarterly Metrics

Metric	Status – Q3 2015	Status – Q4 2015
<b>Capital:</b>		
<b>Authorized</b> <sup>36</sup>	\$368.5 million	\$368.5 million

<sup>31</sup> Cases 14-M-0094 *et al.*, issued and effective on January 21, 2016.

<sup>32</sup> *Ibid.*, Ordering Clauses 35 and 36, page 112.

<sup>33</sup> Note that the energy and environmental metrics included in this Report reflect rounding for ease of representation.

<sup>34</sup> That is, "the aggregate capital allocated to [NYGB] 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".

<sup>35</sup> As defined in Section 3.2 of the Metrics Plan.

<sup>36</sup> NYGB's Authorized Capital is currently made up of \$165.6 million pursuant to the Initial Capitalization Order, \$150.0 million pursuant to the Commission's "Order Approving Additional Capitalization with Modification for New York Green Bank" issued and effective July 17, 2015 (the "**2015 Capitalization Order**"), and \$52.9 million in RGFI 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 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 are committed by NYGB to an EIC transaction announced on May 28, 2014 (see <http://greenbank.ny.gov/News/In-the-News/2014-05-28--Energy-Improvement-Corporation-Announces->

Metric	Status – Q3 2015	Status – Q4 2015
Available	\$213.7 million	\$206.3 million
Cumulative Revenues <sup>37</sup>	\$1.9 million	\$2.3 million
Cumulative Operating Expenses	\$6.7 million	\$8.3 million
Approved Investments	\$44.0 million	\$75.0 million
Committed Funds <sup>38</sup>	\$45.5 million	\$48.3 million
Deployed Funds <sup>39</sup>	\$0	\$6.2 million
Overall Portfolio Size <sup>40</sup>	\$45.5 million	\$54.5 million
Overall Portfolio Concentrations <sup>41</sup>	45% Energy Efficiency	47% Energy Efficiency
	55% Renewable Energy	53% Renewable Energy
Number & Type of NYGB-Supported Projects Financed	2 – Energy Efficiency	3 – Energy Efficiency
	1 – Renewable Energy	2 – Renewable Energy
Number & General Type of NYGB Clients & Partners <sup>42</sup>	7 – Local Development Corporation, Global Corporate & Investment Banks, Commercial/Regional Banks, Specialty Finance Company, Energy Project Developer	8 – Local Development Corporation, Global Corporate & Investment Banks, Commercial/Regional Banks, Specialty Finance Company, Energy Project Developers
Estimated Lifetime Energy Saved by Fuel Type from Energy Efficiency Projects (MWh/MMBtu) and/or Estimated Lifetime Clean Energy Generated (MWh) for Committed Funds & Deployed Funds	Estimated Lifetime Energy Saved by Fuel Type (Energy Efficiency): 400,000 – 420,000 MWh; and 5.5 – 6.0 million MMBtu	Estimated Lifetime Energy Saved by Fuel Type (Energy Efficiency): 960,000 – 1,000,000 MWh; and 8.6 – 9.4 million MMBtu
	Estimated Lifetime Clean Energy Generated: 550,000 – 1,300,000 MWh	Estimated Lifetime Clean Energy Generated: 1,100,000 – 2,000,000 MWh

[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.

<sup>37</sup> 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 Metrics reports to provide a clearer indication of NYGB's operating revenue. For the period ending December 31, 2015, NYGB's cumulative fair market valuation adjustment was a decrease of \$491,000 (~0.2% of the capital invested). Cumulative revenues and available capital figures for the quarter ending September 30, 2015 have been restated consistent with the treatment described in this note.

<sup>38</sup> 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.

<sup>39</sup> 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. Note that the amount of "Deployed Funds" is not of itself any measure of NYGB success. Many transactions involve NYGB's provision of credit enhancements which, by their nature, are contingent obligations that are generally not intended to be fully drawn against/funded. In addition, many NYGB investments are "delayed draw" in that funds are not deployed until project sponsors meet certain development milestones over a time period necessary to originate, develop and construct a large number of smaller, distributed clean energy projects.

<sup>40</sup> Note that at any time, NYGB's overall Portfolio size equals the sum of Committed Funds and Deployed Funds.

<sup>41</sup> Based on signed and closed transactions, and reflecting proportionate dollar values invested by NYGB.

<sup>42</sup> Descriptions of these categories have been brought into conformity with the nomenclature used in Transaction Profiles.

Metric	Status – Q3 2015	Status – Q4 2015
<b>Estimated First Year<sup>43</sup> Energy Saved by Fuel Type from Energy Efficiency Projects (MWh/MMBtu) and/or Estimated First Year Clean Energy Generated (MWh) for Committed Funds &amp; Deployed Funds</b>	Estimated First Year Energy Saved by Fuel Type (Energy Efficiency): 40,000 – 42,000 MWh; and 550,000 – 600,000 MMBtu	Estimated First Year Energy Saved by Fuel Type (Energy Efficiency): 77,000 – 82,000 MWh; and 760,000 – 830,000 MMBtu
	Estimated First Year Clean Energy Generated: 23,000 – 55,000 MWh	Estimated First Year Clean Energy Generated: 61,000 – 99,000 MWh
<b>Estimated Lifetime Primary Energy Saved from CHP (Btu) for Committed Funds &amp; Deployed Funds</b>	Not Applicable	Not Applicable
<b>Estimated First Year Primary Energy Saved from CHP (Btu) for Committed Funds &amp; Deployed Funds</b>	Not Applicable	Not Applicable
<b>Estimated Clean Energy Generation Installed Capacity (MW), if applicable, for Committed Funds &amp; Deployed Funds</b>	22.0 – 42.0 MW	54.0 – 79.0 MW
<b>Estimated Lifetime Greenhouse Gas Emission Reductions (metric tons) for Committed Funds &amp; Deployed Funds</b>	630,000 – 860,000 metric tons	1,100,000 – 1,400,000 metric tons

## 4 Subsequent Events

Since December 31, 2015, the following Milestones have occurred with respect to NYGB’s business:

- (a) CEF Order, Completion of NYGB’s \$1.0 Billion Capitalization & Authorization of Credit Facility: As the culmination of efforts that commenced with the September 2013 “Petition of the New York State Energy Research and Development Authority to Provide Initial Capitalization for the New York Green Bank”<sup>44</sup>, on January 21, 2016 NYGB’s capitalization was confirmed by the Commission at \$1.0 billion pursuant to the CEF Order. Among other things, the CEF Order:
- i. Confirmed the annual allocation schedule of ratepayer collections to NYGB over the 10-year CEF term (the “**CEF NYGB Incremental Collections**”), including the Commission’s acknowledgment that “[m]aintaining the momentum established to date is paramount to positioning NYGB for success”<sup>45</sup>;
  - ii. Authorized putting in place a NYGB credit facility, backed by the CEF NYGB Incremental Collections (the “**Credit Facility**”). The purpose of the Credit Facility is to ensure that NYGB has the requisite liquidity to remain fully able to meet and service market demand for its investment and participation in transactions. The Credit Facility is estimated to permit “an additional \$500 million of investment ... [during the period of the CEF], increasing NYGB’s investment to \$1.9 billion and ... adding an additional \$1.5 billion in leveraged funds for a total estimated impact of \$5.7 billion”<sup>46</sup>. Based on need, the Credit Facility will be put in

<sup>43</sup> First year energy savings refer to the first year of estimated 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.

<sup>44</sup> Case 13-M-0412, dated September 9, 2013.

<sup>45</sup> Case 14-M-0094 *et al.*, at page 74.

<sup>46</sup> *Ibid*, at page 77.

- place, consistent with the requirements of the CEF Order, including efforts to minimize associated fees and interest;
- iii. Prescribes a consistent approach – across all CEF programs – to eligibility criteria. Consistent with the CEF Order, NYGB will make clean energy investments that (x) advance market transformation, deployment or technical innovation; and (y) advance at least one of the goals laid out in the 2015 New York State Energy Plan (i.e., reduce GHG emissions; increase renewable energy capacity; or increase energy efficiency); and
  - iv. Includes certain filing and other requirements of NYGB in connection with the Metrics Plan, Business Plan and Credit Facility.
- (b) Stakeholder Outreach: NYGB continues to develop and deepen relationships with key external stakeholder organizations which have been following NYGB’s development throughout the CEF process. Following the CEF Order, a stakeholder outreach effort was undertaken including with the Independent Power Producers of New York, Multiple Intervenors, Sierra Club, PACE Law, and the Business Council of New York, among others. Outreach efforts remain an ongoing priority for NYGB as part of stimulating an important and collaborative dialogue. NYGB welcomes constructive input from all stakeholder groups.
- (c) 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 are reflected in Section 3 of all Quarterly Reports (i.e., in Deployed Funds) as they occur during the relevant quarters. As noted in Section 3, the amount of Deployed Funds is not of itself a measure of NYGB success since many transactions involving credit enhancement products (which represent a contingent obligation for NYGB) are frequently not intended to be drawn against (i.e., Deployed). In addition, many NYGB investments are “delayed draw” in that funds are not Deployed until project sponsors meet certain development milestones over a time period necessary to originate, develop and construct a large number of smaller, distributed clean energy projects.
- (d) Advisory Committee: An Advisory Committee meeting was held on February 2, 2016.



## 5 Defined Terms & Glossary

“**2015 Capitalization Order**” has the meaning given to that term in [footnote 36](#).

“**Active Pipeline**” has the meaning given to that term in [Section 2.1](#).

“**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, at any time, NYGB’s then-current annual business plan filed with the Commission.

“**CDFI**” has the meaning given to that term in [Section 2.2](#).

“**CEF**” has the meaning given to that term in [Section 2.2](#).

“**CEF NYBG Incremental Collections**” has the meaning given to that term in [Section 4](#).

“**CEF Order**” has the meaning given to that term in [Section 3](#).

“**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.

“**Credit Facility**” has the meaning given to that term in [Section 4](#).

“**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.

“**EIC**” has the meaning given to that term in [Section 2.1](#).

“**EV**” has the meaning given to that term in [Section 2.2](#).

“**GHG**” has the meaning given to that term in [Section 2.1](#).

“**Greenlight Committee**” means the NYGB committee of that name in its investment process.

“**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.

“**LMI**” 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.

**“PACE”** has the meaning given to that term in Section 2.1.

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

**“Pipeline”** has the meaning given to that term in Section 2.1.

**“Portfolio”** has the meaning given to that term in Section 2.1.

**“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. 6 (Through December 31, 2015), Case 13-M-0412, February 16, 2016”.

**“RGGI”** means the Regional Greenhouse Gas Initiative.

**“Scoring Committee”** means the NYGB committee of that name in its investment process.

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

*Exhibit 1. 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.<sup>47</sup> 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. The Transaction Profiles for the investments which NYGB has closed since the date of the last Quarterly Report are included below.

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<sup>47</sup> As required by the 2015 Capitalization Order, page 18.

## 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**").<sup>1</sup> 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.<sup>2</sup>

### 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.<sup>3</sup> 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.

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

<sup>2</sup> See Section 5.4, pages 8 – 9 and Appendix A.

<sup>3</sup> 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
<b>Client</b>	United Wind	Energy Project Developer
<b>Partners</b>	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”.<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>:

- 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 <sup>6</sup>	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.<sup>7</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 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;

<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 5.

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

<sup>7</sup> 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.



# Supporting and Accelerating the Expansion of Energize NY PACE Finance Throughout New York State

## Energy Improvement Corporation and Energize NY Finance

*NY Green Bank (“NYGB”) has provided two letters of credit totaling \$5.5 million to New York-based Energy Improvement Corporation (“EIC”), a not-for-profit, local development corporation formed to promote and facilitate meaningful energy savings through energy efficiency and renewable generation improvements to existing properties throughout New York State (“NYS”).*

### Part I: Transaction Description

EIC’s Energize NY Finance product uses the Property Assessed Clean Energy (“PACE”) loan mechanism to finance qualified energy improvements to buildings for commercial property owners and not-for-profits located in participating NYS municipalities. Under the PACE structure, commercial and not-for-profit real estate owners can effectively borrow to finance energy improvements to their properties and repay this debt through additional finance charges that are included in the property tax bills collected by the participating municipalities. As PACE requires that expected energy cost savings exceed the additional annual PACE debt service payments, property owners will benefit from energy savings and any increase in the value of their upgraded buildings. The PACE mechanism eliminates the burden that large upfront capital expenditures can place upon commercial property owners and not-for-profits that so often are a barrier to making energy efficiency investments.

In May 2014, NYGB provided EIC with a \$500,000 Irrevocable Standby Letter of Credit (“LC No. 1”) serving two purposes – providing the federal credit support required by the NYS PACE enabling legislation<sup>1</sup> and protecting municipalities from absolute loss if proceeds from any eventual liquidation and sale of a defaulted property are less than the property owner’s outstanding PACE loan balance.

In December 2015, NYGB provided EIC with a \$5.0 million Irrevocable Standby Letter of Credit (“LC No. 2”) to help establish a reserve fund to support participating municipalities’ obligations to pay PACE debt service to EIC if collections of PACE charges are insufficient, whether due to late payment or default by the property owner. Any draws made on LC No. 1 or LC No. 2 will be repaid pursuant to the terms of the respective agreements with EIC.

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”).<sup>2</sup> This profile contains specific information in connection with the EIC transactions, as required by the Metrics Plan.<sup>3</sup>

### Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Credit Enhancement(s)	LC No. 1 – Letter of Credit	\$500,000
	LC No. 2 – Letter of Credit	\$5.0 million

<sup>1</sup> NYS General Municipal Law, Article 5-L.

<sup>2</sup> Case 13-M-0412.

<sup>3</sup> See Section 5.4, pages 8 – 9 and Appendix A.



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

Statewide.<sup>4</sup> For eligible properties in participating NYS municipalities that install permanent improvements<sup>5</sup> to reduce energy costs. Eligible properties include multifamily, commercial and industrial, retail/mixed use, privately owned schools, colleges and universities, and institutional properties. Permanent improvements can range in cost from a minimum of \$3,000 to as much as 10% of a property’s appraised value.

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

	Name	Participant Type
<b>Client</b>	EIC	Local Development Corporation
<b>Partners</b>	Bank of America Merrill Lynch (“ <b>BAML</b> ”)	Global Corporate & Investment Bank
	First Niagara Bank	Regional Bank
	Participating NYS Municipalities	Government
	Qualified Building Contractors	Industry Vendors

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Municipalities	In the absence of specially structured programs, options for municipalities to facilitate energy efficiency projects within their jurisdictions have been severely limited. Specifically, municipalities have been constrained in their ability to participate in PACE initiatives to the extent that they are obligated to make payment during the pendency of a delinquent tax charge collection associated with the PACE loan mechanism. Participating municipalities must compensate for any missing tax revenues from other funds if a property owner does not pay tax charges when due.	<p>NYGB is alleviating these concerns by providing credit support for a reserve fund which municipalities can utilize in the event of a collection delinquency or default. Energize NY Finance, together with NYGB’s supporting measures, are aimed at providing PACE opportunities broadly to all interested municipalities, in turn expanding the availability of energy improvement financing to commercial, multifamily real estate owners and not – for-profits – of all sizes – within participating municipalities throughout the State.</p> <p>The two standby letters of credit NYGB provided to EIC address the following key issues for participating municipalities:</p> <ul style="list-style-type: none"> <li>• <u>LC No. 1</u> is intended to protect municipalities from absolute loss if proceeds from the eventual liquidation and sale of a defaulted property are less than the property owner’s outstanding PACE loan balance; and</li> <li>• <u>LC No. 2</u> will help to support a reserve fund that reduces participating municipality cash flow volatility if payment is due but collections of PACE charges are insufficient, whether due to late payment or default by the property owner.</li> </ul>

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

<sup>5</sup> Which improvements are of types that have been certified by either the New York State Energy Research & Development Authority (“**NYSERDA**”) or a utility in the context of acceptable upgrades.

Beneficiary	Market Barrier	Financing Solution
Capital Market Participants	Private capital providers' interest and participation in investments is driven largely by analysis of, and comfort with, lengthy performance histories for technologies and counterparties. Limited performance history for energy savings and clean energy generation projects for commercial buildings and not-for-profits has materially curtailed the provision of private funding in this sector to date.	<p>EIC's Energize NY Finance program, including the critical credit support provided by NYGB, is transformational in that it is expected to greatly broaden the availability of capital for energy savings and clean energy generation projects for commercial buildings and not-for-profits across the State. The PACE financing structure enhances the credit profile of many projects, allowing building owners to gain access to funding that will improve the energy efficiency of their buildings while reducing energy costs. Over time, growing performance history for this asset class, standardization of structures and documentation, and the realization of economies in transaction costs is expected to drive material PACE growth in NYS.</p> <p>This transaction exemplifies the market-based public-private partnership solutions that NYGB seeks to implement. By utilizing local jurisdictions' existing property tax structures and modest State credit support, private sector capital is effectively able to deliver public benefits by financing clean energy improvements to commercial building stock throughout the State.</p> <p>By working with EIC and all transaction partners to provide the catalyst for significant increase in the number of participating municipalities, the \$75.0 million committed by BAML and the \$3.0 million First Niagara warehouse facility, both part of this overall transaction, are expected to be deployed more quickly by EIC to finance clean energy improvements, delivering greater energy savings and environmental benefits to New Yorkers.</p>

## Technologies Involved

Technology	Measures
Energy Efficiency	Boilers and controls; chillers and controls; insulation and air sealing; lighting; pumps; windows and doors
Renewable Energy	Solar photovoltaic systems; solar thermal systems; geothermal; wind turbines
Demand Management	Combined heat and power; battery storage; thermal storage; fuel cells

## 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 energy saved by fuel type from efficiency projects (MWh/MMBtu) and estimated lifetime clean energy generated (MWh);
- Estimated lifetime primary energy saved from CHP (Btu);
- Estimated clean energy generation installed capacity (MW); and
- Estimated lifetime GHG emission reductions (metric tons).

LC No. 1 and LC No. 2 are expected to accelerate the expansion of EIC’s municipal membership, resulting in more than 550 PACE projects. This represents ~\$150.5 million in estimated total project costs and a projected range of cumulative lifetime<sup>8</sup> GHG emission reductions of between 470,000 and 520,000 metric tons.

At closing, the estimated lifetime and annual energy and environmental impacts of the EIC program, facilitated by NYGB’s financial participation, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Energy savings from efficiency measures (electric)	560,000 MWh	600,000 MWh	37,000 MWh	40,000 MWh
Energy savings from efficiency measures (fuel)	3.1 million MMBtu	3.4 million MMBtu	210,000 MMBtu	220,000 MMBtu
Clean, renewable energy generated <sup>9</sup>	530,000 MWh	620,000 MWh	35,000 MWh	41,000 MWh
Clean energy generation installed capacity <sup>10</sup>	30 MW	35 MW	N/A	N/A
GHG emission reductions	470,000 metric tons	520,000 metric tons	32,000 metric tons	35,000 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 that NYGB has supported and will occur approximately three to five years following initial NYGB capital deployments.<sup>11</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 by the Commission and effective December 19, 2013, Ordering Clause 6 at pages 24 – 25.

<sup>7</sup> See Metrics Plan, Section 3.0, page 5.

<sup>8</sup> Assuming an average lifetime of qualifying energy efficiency and renewable energy measures undertaken under the Energize NY Finance program of 15 years.

<sup>9</sup> Clean, renewable energy generated (MWh) and clean energy generation installed capacity (MW) presented in this table reflect impacts associated with solar projects only. It is anticipated that additional renewable energy technologies (e.g., smaller-scale wind) may also contribute to this transaction but are not estimated here.

<sup>10</sup> Built clean energy generation capacity at full deployment of funds is the same for annualized and lifetime duration.

<sup>11</sup> See Metrics Plan, Section 5.2, page 8.

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 rate at which municipalities join Energize NY/PACE;
- Location of municipalities joining Energize NY/PACE;
- Number of projects in development and completed;
- Average and aggregate dollar value of projects in development and completed; and
- Number and type of measures installed.

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:

- General understanding of renewable energy/energy efficiency benefits by municipalities and the financial community;
- Awareness and use of PACE and project performance data associated with this investment by municipalities and financial community;
- Market volume of commercial/not-for-profit energy efficiency and renewable energy loans funded through Energize NY/PACE;
- Scale of Energize NY/PACE transactions by participating municipalities;
- Number of private sector capital providers willing to step into the position of letter of credit provider in comparable future transactions;
- Number of private sector capital providers offering warehouse facilities to Energize NY or comparable programs in future; and
- Number of private sector capital providers advancing funds to finance energy efficiency and renewable energy improvements through Energize NY/PACE.

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.

## **Economic Development**

Energize NY Finance will not only greatly broaden the availability of capital for energy savings and clean energy generation for commercial property owners and not-for-profits, but will also support economic development and job creation in each of the qualifying municipalities where it is active.

## **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 participation rates, project scale information, interest in energy efficiency and renewable energy, and influence of NYGB's participation on municipalities and 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 and other relevant factors as Energize NY Finance evolves.

**Impact evaluation** is expected to include retail electric and natural 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 to assess utility data both 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 consumption. Should the makeup of Energize NY financed projects

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, Energize NY Finance projects that receive any public incentive or funding from other entities (e.g., utility, other NYSERDA program, etc.) 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 be made to coordinate market and impact evaluation activities for the projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.