



**NY Green Bank**  
A Division of NYSERDA

# NY Green Bank

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## **Operational Supplement to Annual Plan and Impact Report**

Case 13-M-0412

May 2, 2022

## Contents

1. Operational Supplement Description and Purpose .....	3
2. NY Green Bank Overview .....	3
2.1. Mission .....	4
2.2. Key Investment Criteria .....	5
2.3. Other Investment Considerations.....	5
2.4. Goals & Key Performance Indicators .....	6
2.5. Impact & Reporting .....	8
3. Investment Process.....	10
4. Risk Management & Oversight Framework .....	11
4.1. Introduction.....	11
4.2. Risk Framework & Identification.....	11
4.3. Risk Mitigation Principles .....	13
4.4. Governance & Oversight Environment .....	15
5. Impact Measurement & Reporting .....	18
5.1. Annual & Lifetime Estimated Impact Benefits .....	18
5.2. Methodology to Assess NYGB Impact .....	18
5.3. Impact Reporting Process.....	19
Figure 1: Mission Statement .....	4
Figure 2: Key Investment Criteria .....	5
Figure 3: Transaction Process .....	11
Figure 4: Governance & Oversight Environment .....	16
Figure 5: Annual & Lifetime Direct Impact Benefit Calculation Methodology .....	19
Figure 6: Estimating Direct Impact & Reporting Benefits.....	21
Table 1: Goals, Key Performance Indicators & Metrics .....	7
Table 2: Key Business Risks.....	12

## 1. Operational Supplement Description and Purpose

As of June 2021, NY Green Bank (NYGB) has revised the structure of its Annual Review and Plan filing to consist of an Impact Report that summarizes the activity of the previous fiscal year and an Annual Plan that lays out strategic goals for the current fiscal year. Additional pertinent information – specifically regarding NYGB’s structure, operations, and core processes – that does not typically change year-over-year has been consolidated in this Operational Supplement. This document will serve as a standing resource to complement the Impact Report and Annual Plan. NYGB will amend this Operational Supplement as needed to ensure that the document remains a current reflection of NYGB processes and operations.

## 2. NY Green Bank Overview

NY Green Bank (“**NYGB**”) is a \$1.0 billion investment fund designed to accelerate clean energy deployment in New York State (“**NYS**” or the “**State**”) and is globally recognized as a leading sustainable infrastructure investor. NYGB’s participation in a growing number and diversity of transactions spurs clean energy development in NYS, with benefits for New York residents and more broadly. NYGB is a division of the New York State Energy Research and Development Authority (“**NYSERDA**”).

Since its formation, NYGB has worked to increase the size, volume and breadth of sustainable infrastructure investment activity throughout the State, expand the base of investors focused on NYS clean energy and increase market participants’ access to capital on commercial terms. To achieve these objectives, NYGB collaborates with the private sector to develop transaction structures and methodologies that overcome clean energy investment barriers. These barriers include challenges in evaluating risk and addressing the needs of distributed energy and efficiency projects where underwriting may be oriented toward larger opportunities and/or toward groups of somewhat homogeneous investments that make up larger portfolios.

NYGB invests where there are limited precedents, less familiar asset structures and/or deal structuring complexities that require specialized skillsets. NYGB often applies project and structured finance transaction approaches that isolate project assets, allocate and protect against downside risks to the greatest possible extent and monetize low-volatility project-generated cash flows to generate appropriate risk-adjusted returns. NYGB also uses other financing approaches as appropriate to meet the needs of various market segments.

NYGB responds to market opportunities that create attractive precedents, standardize investment practices and create roadmaps that capital providers can readily replicate and scale. As funders “crowd in” to an area within the sustainable infrastructure landscape, NYGB moves on to other areas where funding gaps remain.

To solve client problems in real-time and crowd in private sector capital, NYGB operates within private sector time horizons and commercial norms. More information on NYGB’s growing investment portfolio (“**Investment Portfolio**”) is available at [www.greenbank.ny.gov/Investments/Portfolio](http://www.greenbank.ny.gov/Investments/Portfolio).

Guidance on how industry participants and capital providers can work with NYGB, as well as more general information, can be found at [www.greenbank.ny.gov](http://www.greenbank.ny.gov).

NYGB maintains alignment with the State’s strategic direction as provided by the New York Public Service Commission (the “**Commission**”) in the “Order Authorizing the Clean Energy Fund Framework” issued and effective January 21, 2016 (the “**CEF Order**”).<sup>1</sup> NYGB plays a central role in New York’s Clean Energy Fund (“**CEF**”), which was created pursuant to the CEF Order. The CEF is a \$5.3 billion

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<sup>1</sup> See: <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={B23BE6D8-412E-4C82-BC58-9888D496D216}>.

commitment over 10 years to advance clean energy growth and innovation, drive economic development across NYS and reduce ratepayer collections.<sup>2</sup> Each investment made by NYGB contributes to the primary CEF outcomes of greenhouse gas (“**GHG**”) emissions reductions, customer bill savings, energy efficiency, clean energy generation and mobilization of capital. For more information on the CEF, see [www.nysrerda.ny.gov/About/Clean-Energy-Fund](http://www.nysrerda.ny.gov/About/Clean-Energy-Fund).

NYS has continued to expand its clean energy goals since the Inception<sup>3</sup> of NYGB and the CEF, including following the enactment of the Climate Leadership and Community Protection Act (“**CLCPA**”) in July 2019. The CLCPA establishes the most ambitious and comprehensive climate and clean energy legislation in the country, including mandates to:

- Achieve 70% renewable energy by 2030 and zero-carbon emission electric sector by 2040;
- Reduce energy consumption statewide by 185 trillion British thermal units (“**Btus**”) through energy efficiency improvements;
- Install 9,000 megawatts of offshore wind (“**OSW**”) by 2035; 10,000 megawatts of distributed solar by 2030<sup>4</sup>; and 6,000 megawatts of energy storage by 2030<sup>5</sup>; and
- Establish a Climate Action Council (“**CAC**”) and policy roadmap that will ensure 35% of clean energy program resources benefit disadvantaged communities and individuals working in conventional energy industries are provided with training and opportunities in the growing clean energy economy.

## 2.1. Mission

Figure 1 presents NYGB’s mission.

Figure 1: Mission Statement

Work in collaboration with the private sector to transform financing markets in ways that accelerate clean energy investments to combat climate change and deliver benefits equitably to all.

The key elements of NYGB’s mission are to collaborate with private sector participants to implement solutions that overcome market barriers and transform financial markets to attract greater private sector investment in clean energy (specifically by enabling greater scale, new and expanded asset classes, and increased liquidity) and to mobilize investments that reduce GHG emissions while delivering benefits equitably to all New Yorkers.

NYGB has identified financial market barriers to clean energy and sustainable infrastructure projects in the State that constrain growth in the sector, including: lack of transaction standardization; insufficient scale and volume; less familiar project sponsors and counterparty credits; inadequate data on underlying debt (or equity) investments and/or technology performance; and underdeveloped or nonexistent capital markets for clean energy projects. These barriers exist, at varying degrees, across asset classes and project types, limiting investment at scale into otherwise attractive renewable energy, energy efficiency and other sustainable infrastructure opportunities.

NYGB follows certain important operating principles to increase private sector market participation:

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<sup>2</sup> January 2016 through December 2025.

<sup>3</sup> “**Inception**” means the inception of NYGB pursuant to and as of the date of, the Initial Capitalization Order in December 2013. Case 13-M- 0412, “Order Establishing New York Green Bank and Providing Initial Capitalization,” issued and effective December 19, 2013 (the “**Initial Capitalization Order**”), Ordering Clause 5, page 24.

<sup>4</sup> Updated (as of spring 2022) from the original target of 6,000 megawatts by 2025.

<sup>5</sup> Updated (as of spring 2022) from the original target of 3,000 megawatts by 2030.

- Focusing on wholesale capital markets (that is, providing structured financial products to developers and specific projects that result in clean energy benefits for all New Yorkers at scale rather than funding consumers/homeowners directly);
- Structuring financial products to foster replicable and standardized sustainable infrastructure investments;
- Pricing financial products consistently with commercial approaches to credit quality and risk, thus earning a return on investment to preserve and grow NYGB's capital base;
- Collaborating with, rather than competing against, market participants that can or already do engage the financial markets but are constrained by a lack of available financing; and
- Recycling its capital into new clean energy projects when income is generated and, as investments mature or are realized, maximizing the impact of its capital across multiple deployments.

## 2.2. Key Investment Criteria

NYGB's key investment criteria, applied to all potential transactions, are defined by the Commission in the Initial Capitalization Order and are set forth in [Figure 2](#).<sup>6</sup>

*Figure 2: Key Investment Criteria*

1. Transactions will have expected financial returns such that the revenues of NYGB on a portfolio basis will exceed expected portfolio losses;
2. Transactions will be expected to contribute to financial market transformation in terms of:
  - Scale;
  - Improved private sector participation;
  - Level of awareness and confidence in clean energy investments; and/or
  - Other aspects of market transformation; and
3. Transactions will have the potential for energy savings and/or clean energy generation that will contribute to GHG emissions reductions in support of New York's clean energy policies.

In response to the CEF Modification Order ("**CEF Modifications Order**"), NYGB undertook a stakeholder engagement process to assure its investment products deliver benefits to disadvantaged communities.<sup>7</sup> In the course of that process, NYGB analyzed and confirmed that such investment products could be offered under its key investment criteria defined in the Initial Capitalization Order.

## 2.3. Other Investment Considerations

In applying the key investment criteria, NYGB also considers additionality, impact benefits<sup>8</sup> and transaction size and participation, each of which is discussed below.

### Additionality

<sup>6</sup> Ordering Clause 6, pages 24 – 25.

<sup>7</sup> See CEF Modifications Order <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7bD9BA5CDD-5DC3-45B7-B4AA-C9C78A98B9FD%7d>

<sup>8</sup> Collectively, the estimated installed clean generation capacity and/or energy savings and associated GHG emissions reductions resulting from NYGB transactions are referred to as "**Impact Benefits**" or "**Impact Metrics**."

Additionality is the unique benefit that NYGB brings to the proposed financing or investment arrangement if any proposed project:

- Would likely not occur given the current state of the private markets; or
- Might occur in the private markets but would likely:
  - Involve less favorable terms as to tenor, cost, fees and other key transaction terms;
  - Not happen at the market breadth needed to scale the sector;
  - Not deliver the same scale or extent of impact benefits;
  - Not involve the same level of focus on the NYS market; and/or
  - Not happen as quickly.

## Impact & Public Benefits

NYGB also considers the expected direct and indirect impact and public benefits of potential investments as determined by factors that include:

- Estimated energy savings and/or clean energy generation;
- Other estimated GHG reduction benefits to the extent included in proposed project(s) (outside those achieved through direct energy savings and/or clean energy generation);
- Estimated benefits to disadvantaged communities, defined and quantified/qualified in accordance with NYS and NYSERDA approaches; and
- The strength of the plan pursuant to which a counterparty (or designated third-party) tracks, records and reports performance data.

## Transaction Size & Participation

NYGB considers various transaction sizes and participation levels, but largely expects its participation in any investment opportunity (whether related to a single asset or project portfolio) to fall within the range of \$5.0 – \$50.0 million.

Details of the types of transactions that NYGB considers, including illustrative guidelines for eligible technologies, are included in NYGB's open investment solicitations, referred to as requests for proposals ("RFPs").<sup>9</sup> NYGB provides additional RFP resources to aid prospective proposers in the RFP process.<sup>10</sup>

### 2.4. Goals & Key Performance Indicators

The mission and key investment criteria shape NYGB's goals, which in turn drive NYGB's business operations and tactical initiatives. NYGB's goals guide all stakeholders (such as employees, clients, counterparties, industry participants, investors, ratepayers and the public) as to where NYGB will focus its efforts and resources.

To assess progress toward its goals, NYGB sets and tracks key performance indicators ("KPIs"). These KPIs tie to NYGB's metrics and periodic reporting pursuant to the Metrics, Reporting & Evaluation Plan Version 3.1 (the "**Metrics Plan**").<sup>11</sup> KPIs and metrics are measures that may be used to evaluate NYGB's performance and provide transparency into and accountability for NYGB's activities. These KPIs are set out in [Table 1](#).<sup>12</sup>

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<sup>9</sup> All Investment RFPs and access to the portal for the online submission of investment proposals are available at [www.greenbank.ny.gov/Work-with-Us/Open-Solicitations](http://www.greenbank.ny.gov/Work-with-Us/Open-Solicitations).

<sup>10</sup> See: [www.greenbank.ny.gov/Work-with-Us/RFP-Resources](http://www.greenbank.ny.gov/Work-with-Us/RFP-Resources).

<sup>11</sup> Case 13-M-0412, filed with the Commission on June 20, 2016.

<sup>12</sup> [Table 1](#) contains selected metrics that most directly tie to NYGB's goals and is not intended to be a complete listing of all metrics on which NYGB reports. For these details, see NYGB's Quarterly and Annual Metrics reports available at [www.greenbank.ny.gov/Resources/Public-Filings](http://www.greenbank.ny.gov/Resources/Public-Filings).

Table 1: Goals, Key Performance Indicators & Metrics

NYGB Goals	Key Performance Indicators	Metrics
<b>Attract Capital to Clean Energy Markets in NYS</b>	<ul style="list-style-type: none"> <li>▪ Mobilizing capital at the project and portfolio levels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mobilization Ratio<sup>13</sup></li> <li>▪ Total Project Costs (Cumulative) (\$)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Portfolio driving material clean energy investments across NYS</li> </ul>	<ul style="list-style-type: none"> <li>▪ Total Project Costs (Cumulative) (\$)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Growing portfolio</li> </ul>	<ul style="list-style-type: none"> <li>▪ Overall Investments to Date (\$) <sup>14</sup></li> </ul>
	<ul style="list-style-type: none"> <li>▪ Strong Active Pipeline<sup>15</sup></li> </ul>	<ul style="list-style-type: none"> <li>▪ Active Pipeline (\$)</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Stimulating new clean energy proposals in NYS</li> </ul>	<ul style="list-style-type: none"> <li>▪ Proposals Received – Value (Cumulative) (\$)</li> </ul>
<b>Be Self-Sufficient</b>	<ul style="list-style-type: none"> <li>▪ Revenue growth and expense and potential loss management driving continued self-sufficiency</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cumulative Revenues (\$)</li> <li>▪ Cumulative Operating Expenses (\$)</li> <li>▪ Annual Audited Financial Statements</li> </ul>
<b>Deliver Energy &amp; Environmental Impact Benefits</b>	<ul style="list-style-type: none"> <li>▪ Contributing to CEF objectives and CLCPA goals by financing increased deployment of renewable power generation, energy storage, and energy efficiency and supporting projects that deliver benefits to DACs.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Estimated direct and indirect energy and environmental benefits: <ul style="list-style-type: none"> <li>– Lifetime and Annual energy savings by fuel type (Electricity, Natural Gas, and Other) (MWh/MMBtu<sup>16</sup>);</li> <li>– Lifetime and Annual total energy savings (MMBtu equivalent);</li> <li>– Distributed solar capacity (MW<sup>17</sup>);</li> <li>– Lifetime GHG emissions reductions (metric tons); and</li> </ul> </li> <li>▪ Annual actual (“<b>Actual</b>”)<sup>18</sup> installed energy and environmental benefits and year-over-year change: <ul style="list-style-type: none"> <li>– Energy savings by fuel type (Electricity, Natural Gas, and Other) (MWh/MMBtu);</li> <li>– Total energy savings (MMBtu equivalent);</li> <li>– Distributed solar capacity (MW);</li> <li>– GHG emissions reductions (metric tons)</li> </ul> </li> <li>▪ Progress toward public commitments (%) <ul style="list-style-type: none"> <li>– At least 35% of NYGB capital from January 1, 2020, to the end of the CEF period invested in projects that benefit Disadvantaged Communities (“DAC” or “DACs”)<sup>19</sup>;</li> <li>– \$200 million toward energy storage-related investments;</li> <li>– \$150 million for clean energy improvements in affordable housing properties;</li> <li>– \$100 million in financing to help clean transportation businesses locate or expand in New York; and</li> <li>– Up to \$100 million in support of port infrastructure projects.</li> </ul> </li> </ul>

The NYGB goals, KPIs and metrics flow through all aspects of NYGB's business from investment and portfolio management to risk and compliance, strategy, operations and finance, and legal and regulatory – aligning the entirety of NYGB's activities against its goals.

NYGB files quarterly metrics reports describing its performance for ratepayers, regulators and other stakeholders. In addition, pursuant to the Metrics Plan, NYGB reports on installed energy and

environmental performance across the Investment Portfolio on an annual basis and also files a financial metrics report (“**Annual Financial Metrics Report**”) annually in June focused largely on financial and risk metrics, including NYGB’s audited financial statements (in turn including notes and management discussion and analysis, “**Audited Financials**”).

All Annual Financial Metrics Reports and Audited Financials are available at [www.greenbank.ny.gov/Resources/Public-Filings](http://www.greenbank.ny.gov/Resources/Public-Filings).

## 2.5. Impact & Reporting

One of NYGB’s key investment criteria is to ensure that transactions have the potential for energy savings and/or clean energy generation that contribute to GHG emissions reductions in support of NYS clean energy policies. NYGB tracks specific direct and indirect impacts, including estimated installed capacity and energy savings from efficiency measures as well as estimated GHG emissions reductions.

NYGB contributes to the primary CEF objectives of GHG emissions reductions, customer bill savings, energy efficiency, clean energy generation and mobilization of private sector capital.<sup>20</sup> In turn, the CEF objectives support the State’s clean energy targets, including under the CLCPA, which mandates a significant increase in the CES with a goal of 70% energy generation from renewable sources by 2030 and 100% carbon-free electricity by 2040.<sup>21</sup> The CEF objectives also support the CLCPA,<sup>22</sup> which puts NYS on a road to economy-wide carbon neutrality, through a target of reducing GHG emissions from all anthropogenic sources 85% over 1990 levels by the year 2050, a plan to offset remaining emissions, and an interim mandate of 40% GHG emission reductions by 2030.<sup>23</sup> Additionally, the CLCPA requires a Climate Action Council be formed and policy roadmap developed to ensure that at least 35% of clean

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<sup>13</sup> As defined by the Metrics Plan, “**Mobilization Ratio**” represents the number of dollars of Total Project Costs (Cumulative) mobilized for each dollar committed to investments by NYGB and comprises the ratio of the quotient of Total Project Costs (Cumulative) divided by Overall Investments to Date, to one. In the case where Overall Investment to Date exceeds \$1 billion in investments, NYGB will be recycling the same dollars into the portfolio therefore Overall Investments to Date for the purposes of this calculation will be limited to the total capitalization of \$1 billion. Note that Mobilization Ratio includes the effects of capital recycling. Central to achieving NYGB’s objectives is its ability to efficiently recycle funds. Unlike a pool of public funds that is dispensed once to qualifying projects as non-refundable grants or subsidies, funds entrusted to NYGB are disbursed under commercial arrangements generating investment income and requiring repayment in accordance with agreed terms for each product and counterparty. This means that as each dollar from NYGB cycles through successive investments, benefits will compound. The effective rate of accumulation of these benefits is directly tied to the weighted average holding periods of the financial products that NYGB provides to its clients. Further, as the commercial markets expand into and increasingly accommodate sustainable infrastructure finance needs previously supported by NYGB, the multiplier effect on NYGB’s activities and investments will continue through market follow-on activity.

<sup>14</sup> “Overall Investments to Date” means, at any time, the aggregate of all Committed Funds since Inception, expressed in dollars.

<sup>15</sup> “Active Pipeline” means, at any time and for any period, the sum (expressed in dollars) of the proposed NYGB investment amount in all NYGB active transactions in the Pipeline where, in relation to each transaction: (a) there is agreement in principle between the parties; (b) there is momentum in moving the transaction forward; (c) conditions to investment are expected to be met; and (d) NYGB is dynamically proceeding toward and through Greenlight recommendation, IRC approval and transaction execution.

<sup>16</sup> “MWh” means megawatt hours and “MMBtu” means million British Thermal Units.

<sup>17</sup> “MW” means megawatts.

<sup>18</sup> “Actual(s)” means direct Impact Benefits associated with installed projects, as opposed to estimated benefits before installation is complete.

<sup>19</sup> As outlined in the Climate Act (ECL § 75-0111), DACs will be identified “...based on geographic, public health, environmental hazard, and socioeconomic criteria.”

<sup>20</sup> As set out in Case 14-M-0094, Proceeding on Motion of the Commission to Consider a Clean Energy Fund, Order Authorizing the Clean Energy Fund Framework, (issued January 16, 2016), page 40.

<sup>21</sup> Announced in the 2019 State of the State NYS. See

[www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/2019StateoftheStateBook.pdf](http://www.governor.ny.gov/sites/governor.ny.gov/files/atoms/files/2019StateoftheStateBook.pdf).

<sup>22</sup> Senate Bill S6599 became law on July 18, 2019. See [legislation.nysenate.gov/pdf/bills/2019/a8429](http://legislation.nysenate.gov/pdf/bills/2019/a8429).

<sup>23</sup> The Climate Act codified and expanded New York’s Green New Deal and other nation-leading clean energy and climate targets for the State, including: (a) 9,000 MW of offshore wind by 2035; (b) 6,000 MW of distributed solar deployment by 2025; (c) 3,000 MW of energy storage deployment by 2030; (d) more than doubling new large-scale land-based wind and solar resources through the CES; (e) maximizing the contributions and potential of New York’s existing renewable resources; (f) expanding and enhancing the Solar For All Program to increase access to affordable and clean energy for low-income, environmental justice and other underserved communities; and (g) initiatives to achieve carbon neutral building stock statewide, including through the energy efficiency target to reduce energy consumption by 185 trillion Btus below forecasted energy use in 2025.



energy program resources benefit DACs and individuals working in conventional energy industries are provided with training and opportunities in the growing clean energy economy.

The Order Approving Clean Energy Fund Modifications includes updated 10-year targets, measured as cumulative annual benefits.<sup>24</sup> Projects supported by NYGB's Investment Portfolio will contribute to the following targets during their useful life ("**Useful Life**"):

- 62.0 million MWh clean energy generated;
- 53 trillion Btu of cumulative annual energy efficiency savings acquired;
- 23 million Btu cumulative annual electricity savings (6.7 million MWh)
- 25 trillion Btu cumulative annual natural gas savings;
- 15 trillion Btu cumulative annual other fuels savings;
- 10 GW renewable distributed solar capacity installed in NYS;<sup>25</sup>
- \$20 billion mobilized/leveraged funds; and
- 40% benefits of CEF investments accruing to Disadvantaged Communities.

As NYGB has developed and grown since its Inception, with increasing diversity in the nature and type of transactions in which it participates, its activities have the potential to generate both Direct<sup>26</sup> and Indirect<sup>27</sup> Impact Benefits for NYS residents. While the Metrics Plan was designed with an initial focus on Direct Impact Benefits, NYGB differentiates between Direct and Indirect Impact Metrics, tracking both to quantify the estimated impact of each NYGB investment on the NYS clean energy and sustainable infrastructure market more comprehensively. This is consistent with the CEF Order, which specifically recognizes the importance of catalyzing markets and generating indirect benefits as part of CEF initiatives, including over longer time horizons.<sup>28</sup>

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<sup>24</sup> Case 14-M-0094, Proceeding on Motion of the Commission to Consider a Clean Energy Fund, Order Approving Clean Energy Fund Modifications, (issued September 9, 2021), Appendix C. In the CEF Modifications Order, NYGB was required to conduct a process, with input from relevant stakeholders, to assess NYGB's offerings to ensure they meet the needs of, and deliver benefits to, Disadvantaged Communities. NYGB was also required to document the results of its stakeholder engagement in an updated Metrics Plan and this Operational Supplement.

<sup>25</sup> By 2030. Updated (as of spring 2022) from the original target of 6 GW by 2025.

<sup>26</sup> "**Direct Impact Metrics**" or "**Direct Impact Benefits**" quantify the estimated impact of a counterparty's project development or business-building activity (i.e., the benefits from NYGB's investment into incremental/new clean energy projects and measures). NYGB tracks and issues quarterly public reports of the Direct Impact Metrics outlined in the Metrics Plan; the reports include NYGB's progress in aggregate toward achieving the impact benefit objectives by the end of the CEF in December 2025. Benefits are tracked on an estimated and Actual basis, with Actual benefits reported annually for NYGB's Investment Portfolio in each calendar year. NYGB's investments typically involve terms that limit or incentivize the use of NYGB investment proceeds to new or incremental project development in NYS.

<sup>27</sup> "**Indirect Impact Metrics**" or "**Indirect Impact Benefits**" seek to measure the effect of NYGB's investment for projects, pipelines or other counterparty structures that wholly or in part catalyze other developments in the clean energy and sustainable infrastructure market beyond those in which NYGB directly invests, spurring follow-on market activity that can subsequently be verified. While some NYGB investments might not exclusively fund new project development in NYS or the acquisition of projects operating in NYS, they may be expected to result in greater project deployment in the State in the future. Hence, material indirect benefits are nevertheless expected to accrue to the State over time as a result of this type of NYGB activity. NYGB tracks such estimated benefits (which can be in MW, MWh, MMBtu, or metric tons of GHG reduced/avoided) on a lifetime basis. The realization of Indirect Impact Benefits is expected over time. To confirm the nature and extent of Indirect Impact Benefits that are in fact realized by the State, NYGB will periodically undertake market assessments as needed to confirm that new development activity has in fact occurred, validating NYGB's estimated Indirect Impact Benefits.

<sup>28</sup> See CEF Order (Cases 14-M-0094 et al.) pages 68 – 69: "The approved [CEF eligibility criteria] provide NYSERDA with the needed flexibility to choose initiatives that will create the greatest benefits for the least cost and to support innovative new technologies and approaches. We recognize that initiatives oriented towards market development, while they have the potential to create the greatest benefits for ratepayers in the long run, will have more indirect and less easily calculated clean energy benefits as compared to resource acquisition programs. We require NYSERDA to take a broad view of these indirect benefits when considering whether an initiative is eligible for CEF funding and to also take into account other benefits of the initiative, including its contribution to all of the CEF goals and its economic development benefits. Funding market-based projects with an indirect impact on clean energy is wholly consistent with the Commission's historic approach to clean energy programs. For example, the Commission approved workforce development programs, designed to achieve both indirect clean energy benefits and economic development benefits, as part of both [the energy efficiency performance standard] and [the renewable portfolio standard]. Holistic consideration of these benefits will best support the SEP, the goals described in the New York State Energy Law, and the interests of ratepayers."

The quantification of Indirect Impact Benefits is intended to capture the market transformational effects of NYGB's investment activity. Many other CEF initiatives also anticipate accruing indirect benefits related to longer-term effects from follow-on market activity. These indirect impacts are grounded in a theory of change developed for each initiative, and NYSERDA will use market evaluation approaches, consistent with the rest of the CEF, to verify the indirect impacts as they accrue over time. Estimated indirect benefits are reflected in NYGB progress reporting, in general and toward meeting NYGB's CEF goals. The realization and evaluation of indirect benefits over time will also be reflected in periodic reporting as appropriate. Both direct and indirect metrics contribute to the reductions of GHGs in the State from NYGB activity.

See [Section 5](#) of this Operational Supplement for additional information about NYGB impact benefits assessment and reporting.

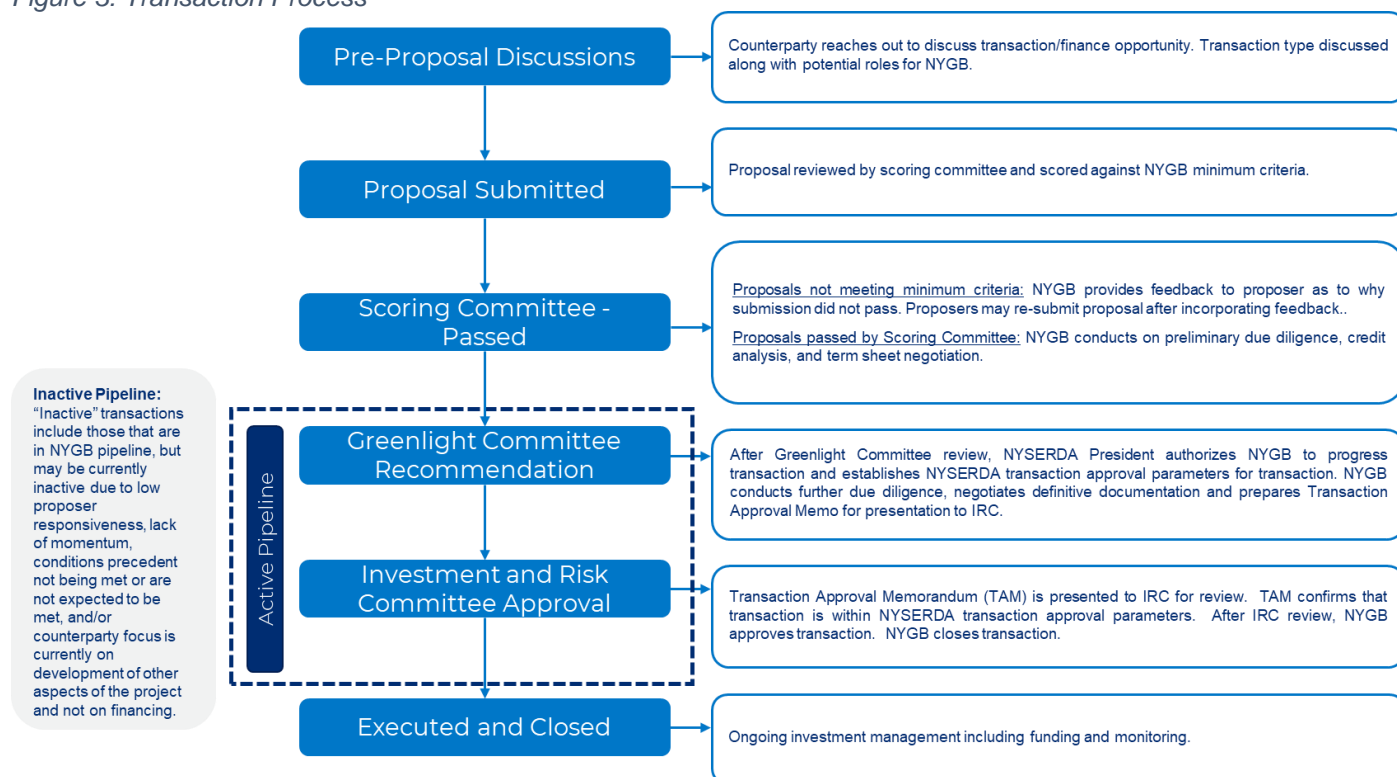
### **3. Investment Process**

Since Inception, NYGB actively and consistently works 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.

NYGB employs various review committees 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 score and “greenlight” proposals, as well as from the Investment & Risk Committee (“**IRC**”).

The principal steps involved in the advancement of any investment proposal received by NYGB are represented in [Figure 3](#). 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 counterparties (including their respective advisors) in an iterative and ongoing process until milestones are reached, culminating in the execution of transaction documentation.

Figure 3: Transaction Process



## 4. Risk Management & Oversight Framework

### 4.1. Introduction

Risk-taking is an intrinsic part of all investment businesses, including NYGB. At NYGB, risk management is not only important in minimizing and controlling loss, it also plays a role in strategic planning, portfolio construction, investment management processes and operations.

Effective management of risk is a cornerstone of NYGB's ability to meet its mission of generating returns in excess of expenses and other uses of cash, and to be a responsible steward of the public funds with which it is entrusted. While realizing NYGB's market-responsive mission requires it to retain flexibility in its decision-making, investments and operations, NYGB is acutely aware that such flexibility must be subject to rigorous processes and accountabilities.

Risk management is the process of identifying, assessing and controlling both enterprise and portfolio risks to minimize unanticipated losses and uncompensated risks and optimize the risk/reward ratio. At NYGB, risk management principles are applied at the enterprise and Investment Portfolio levels and are both quantitative and qualitative in nature. This means that risk management is viewed not just as the duty of one individual or department but as the responsibility of all NYGB personnel as a fundamental part of organizational culture.

This section outlines the key risks in NYGB's business, risk management policies, mitigants and risk management oversight.

### 4.2. Risk Framework & Identification

NYGB classifies all risks arising in the business as either investment risks or enterprise risks. Investment risks are those involved in investment selection and asset management; enterprise risks reflect the balance of largely operational risks related to NYGB's business. Investment risks are further segmented into those related to investment selection and those related to portfolio management, reflecting that the nature of risks that arise in connection with the commitment and deployment of funds differs depending on whether NYGB is making an investment or managing its overall portfolio.

Table 2 summarizes the key business risks to be managed by NYGB.

Table 2: Key Business Risks

Investment Risks		Enterprise Risks	
Technology Risk	The risk that the technology employed in a potential investment will not function as and when intended, including to expected and necessary performance levels	Capitalization Risk <sup>29</sup>	Risk that NYGB does not receive the funds allocated to it on the expected schedule, which could negatively impact NYGB's concentration risk and result in a portfolio that is overweight in individual investment types versus plan
Operating Risk	Operational risks related to portfolio investments, including construction, fuel/renewable resource, input prices, servicing, maintenance and billing/collections arrangements, management, performance of other debt, equity and project participants	Liquidity/Balance Sheet Risk	Risk that counterparties are unable to refinance NYGB's position when expected and/or NYGB is unable to sell-down assets (at times and/or on terms acceptable to NYGB), tying up capital and slowing the capital recycle rate
Legal & Capital Structure Risk	Risks of inadequate contractual terms and documentation to properly structure the relevant project and protect NYGB's interests; risks inherent in proposed capital structure and contractual risk allocations between capital providers	Capital Deployment Risk	Risk that capital is not deployed at a sufficient rate to generate the revenues necessary for self-sufficiency, or the benefits expected to the clean energy sector in New York and to the leveraging of public funds
Counterparty & Credit Risk	Risk of default by a project and/or direct NYGB counterparty in an investment	Execution Risk	Risk of not having the right skills, in the needed amounts available to execute on NYGB business as intended (applies to internal capabilities and external collaborations)
Refinancing Risk	Risk of market development and conditions such that investment either cannot be refinanced (where applicable), except in part or at a loss to	Operational Risk	Risks affecting NYGB's "license to operate" potentially arising in these areas: <ul style="list-style-type: none"> <li>• Legal</li> <li>• Legislative and regulatory</li> <li>• Environmental</li> </ul>

<sup>29</sup> Note that this was a risk until January 2016, when NYGB was fully capitalized with its allocated ratepayer funds.

Investment Risks		Enterprise Risks	
	NYGB, or on terms which might reasonably result in default		<ul style="list-style-type: none"> <li>• Intra-Agency integration (e.g., NYSERDA, DPS, etc.)</li> <li>• State Comptroller/NYSERDA audit deficiency</li> <li>• Inadequate systems, processes or controls</li> </ul>
Market/Price Risk	Risk that energy prices do not sustain the investment/project as modeled and proposed, or that any unhedged costs exceed expectations, over investment/project life	Political Risk	Risks relating to NYGB, as a State-sponsored specialty finance entity, being perceived as a target to provide special treatment to particular constituencies or suffering from changed political priorities with respect to clean energy within NYS
Non-Performance	Risk that during the course of an investment it begins to underperform and/or becomes non-performing	Reputational Risk	Risks that can arise in every aspect of NYGB's business and operations that an event occurs relating to a transaction, counterparty or business practice which detrimentally impacts NYGB and therefore the regard in which it is held in the marketplace and among all stakeholders. Diminished reputation can materially undercut NYGB's ability to operate and achieve success
Concentration Exposures	Risks posed by lack of sufficient diversification among portfolio investments, such that non-performance in a particular investment type has a substantial impact on overall portfolio performance		
Investment Servicing & Administration	Risk of investment servicing and administration (including all related monitoring and reporting) lacking in scope, accuracy, or timeliness, impacting the ability to optimally manage NYGB investments and portfolio		

**4.3. Risk Mitigation Principles**

NYGB addresses the risks that arise across its business through the application of key risk management principles in combination with a system of specific risk mitigation measures. NYGB's investment risks are identified, managed and monitored according to the practices described in the balance of this section in the context of investment analysis and review, portfolio construction, ongoing portfolio monitoring and management, and organizational risk culture. NYGB's risk management reflects the principles set out below.

**4.3.1. Investment Analysis & Review**

- Structured and comprehensive due diligence for all potential investments, addressing all identified investment risk categories consistent with usual and customary commercial approaches;

- Conducting “know your customer” background checks on potential counterparties, with a process in place that can be tailored across the spectrum from smaller private ventures to larger companies;
- Creating the most appropriate investment structure, including financial terms (e.g., covenants, ratios, leverage, reporting requirements, etc.) for a particular asset class;
- Implementing a comprehensive set of contractual risk mitigants (e.g., representations, warranties and covenants, indemnities, defaults, penalties, etc.);
- Adhering to internal procedures for investment decision-making, including Scoring Committee, Greenlight Committee and IRC reviews, input and respective approval processes; and
- Leveraging internal and external expertise as required to understand a particular opportunity, including technical and legal.

#### 4.3.2. Portfolio Construction

- Apply prudent diversification principles to the extent possible taking into account NYGB’s market-responsive approach, including with respect to:
  - Each investment and how it fits within NYGB’s portfolio;
  - Particular clean energy sub-sectors (e.g., solar, wind, storage, efficiency, etc.);
  - Types of projects (e.g., by technology etc.);
  - Target segment representation (including end-use type – commercial and industrial, residential, agricultural, etc.);
  - Specific clients and counterparties;
  - Types of product offerings; and
  - Geographic distribution;
- Identify and monitor concentration risk and exposures (e.g., companies, technologies, asset classes, products, etc.), also taking into account NYGB’s market-responsive approach;
- In the context of NYGB’s demand-driven approach, evaluate and revise as needed target transaction size range;
- Use recognized commercial benchmarks for comparable asset classes to assess NYGB relative performance once the portfolio has reached sufficient size; and
- Manage returns from individual investments as well as across the entire portfolio, ensuring that revenues exceed losses on a portfolio basis;

#### 4.3.3. Ongoing Portfolio Monitoring & Management

- Regular and periodic evaluation of each investment against its investment case;
- Identification of early signs of potential/actual under-performance and/or non-performance;
- Proactive management of recoveries and maximization of recovery in line with sound commercial principles; and
- Regular reporting to the IRC.

#### 4.3.4. Organizational Risk Culture

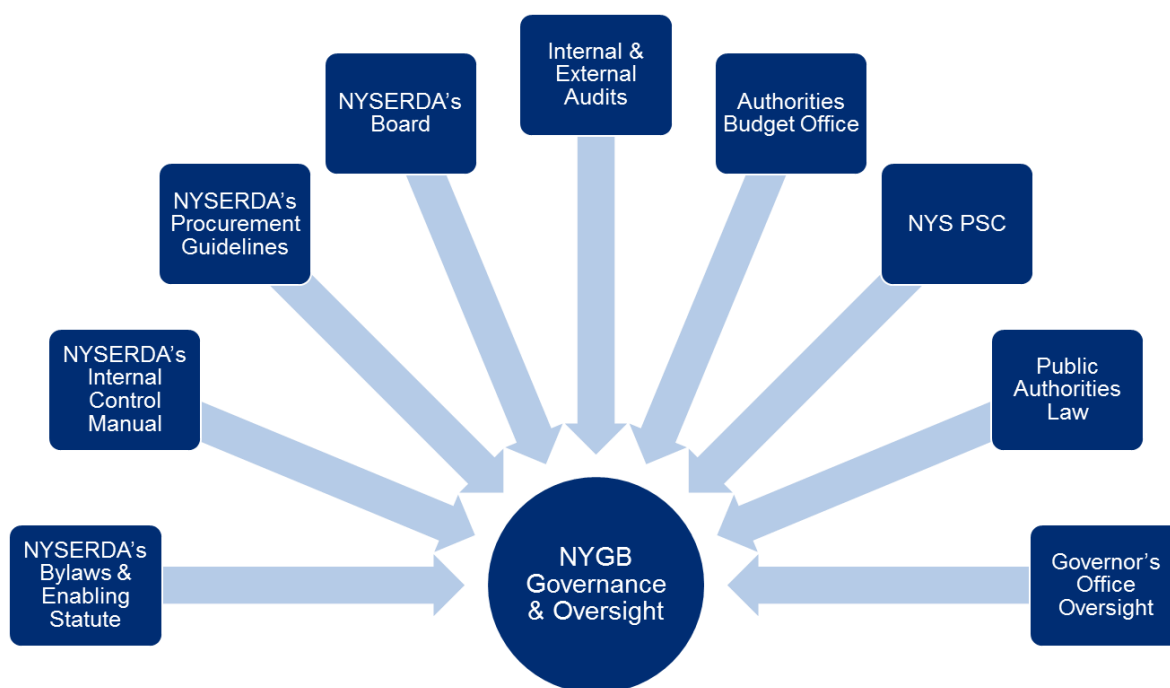
- NYGB has adopted and strives to maintain an organizational culture in which understanding and managing risk is everyone’s responsibility. Risk mitigation and management is not just about policing and enforcing limits. NYGB personnel at all levels must be cognizant of risks and willing to do their part to make sure that those risks within their sphere of responsibility are managed in a manner consistent with NYGB’s policies and disclosures to clients, counterparties and broader stakeholders. Implementation and compliance with NYGB risk parameters, principles, policies and procedures are considered as key factors in personnel performance;

- Ongoing NYGB emphasis on communications, transparency and consistent updates in connection with existing investments, investment opportunities, clients, counterparties and key stakeholders;
- Organizational checks and balances are established and maintained, including appropriate segregation of front/mid/back-office functions. Risk function is housed in an independent control group with a single point of responsibility (i.e., the Managing Director, Risk & Compliance) and having access to NYGB's President and the IRC;
- NYGB organizational structure in which risk management roles and responsibilities are clearly defined, including written policies and other procedures identifying the specific people within the organization who are authorized to approve various actions, etc.;
- Senior management and the IRC are responsible to fully understand NYGB risks, define risk tolerances and set the risk management and ethical tone of the organization. This is critical to NYGB achieving its mission and protecting its reputation in the marketplace;
- NYGB acquires and maintains technology to support risk functions, including appropriate software platforms and other tools for portfolio management, performance analysis and monitoring;
- NYGB has implemented and seeks to maintain effective recordkeeping and management of all documents and records pursuant to commercial and appropriate protocols;
- NYGB works with information technology personnel at NYSERDA to ensure:
  - Adequate backup and disaster recovery support; and
  - The existence of an effective system of security to protect the interests of NYGB employees, clients and counterparties;
- Financial statements are prepared quarterly (unaudited) and annually (audited) in accordance with all applicable accounting standards;
- An experienced and credible accounting firm is retained to audit NYGB financial statements annually; and
- NYGB, as a division of NYSERDA, remains subject to NYSERDA internal controls, policies and procedures and internal audits, as applicable.

#### **4.4. Governance & Oversight Environment**

NYGB is an administrative division of NYSERDA created pursuant to an order issued by the Commission. As a division of NYSERDA, NYGB's activities and outcomes are overseen by the President and Chief Executive Officer ("CEO") of NYSERDA and the NYSERDA Board. The NYSERDA Board has the right to request, receive and review reports, plans, and other materials relating to NYGB's business. The NYGB President provides periodic updates to the NYSERDA Board upon its request. As a division of NYSERDA, NYGB is subject to the full range of operational, reporting, and ethical requirements that NYSERDA requires across its operations and provides quarterly briefings to the full NYSERDA Board. NYGB must comply with NYSERDA's Bylaws, Internal Control Manual, Operations and Procedures Manual, Personnel Handbook, Procurement Guidelines and Board requirements. NYGB is also subject to internal and external audits. Through their oversight of NYSERDA, the Authorities Budget Office and the Commission provide another layer of NYGB oversight. NYGB's governance and oversight environment is represented in [Figure 4](#).

Figure 4: Governance & Oversight Environment



In addition to NYGB's external governance and oversight environment, NYGB is subject to the NYGB Operations & Procedures Manual and has senior management, dedicated Risk & Compliance and Legal & Regulatory Affairs functions, and the following committees providing oversight of and/or inputs to various aspects of NYGB's business: the IRC, the Scoring Committee, the Greenlight Committee and the Advisory Committee.

#### 4.4.1. President and CEO of NYSERDA

The President and CEO of NYSERDA plays a significant role in NYGB's risk oversight environment as they are required to approve the following NYGB documents and actions:

- Any material amendments to the NYGB Operations & Procedures Manual;
- The Metrics Plan, the Impact Report and the Annual Plan;
- Any solicitation for a competitive or strategic opportunity;
- Any transaction reviewed by NYGB's Greenlight Committee (which includes establishing the NYSERDA transaction approval parameters for the transaction);
- Modifications outside the NYSERDA transaction approval parameters; and
- All write-ups and write-downs, and any investment disposition.

#### 4.4.2. Greenlight Committee

- The Greenlight Committee reviews and recommends approval or otherwise of all proposed NYGB transactions before NYGB engages in detailed due diligence and negotiation of definitive legal documentation. The Greenlight Committee consists of the President and CEO of NYSERDA, the NYGB President, the heads of NYGB's various business function, and other NYGB staff members designated by the NYGB President from time to time.



#### 4.4.3. Investment & Risk Committee

The IRC is responsible for overseeing NYGB activities to ensure that NYGB transactions support NYGB business objectives and NYGB's investment portfolio is appropriately monitored and managed. To fulfill these responsibilities, the IRC uses the following mechanisms:

- Review and recommendation of approval or rejection of Transaction Approval Memoranda ("**TAM**") that are consistent with the NYSERDA transaction approval parameters;
- Review and recommendation of approval or rejection of proposed material amendments, waivers, consents, restructurings, and/or dispositions of existing NYGB investments that are consistent with the relevant transaction approval parameters;
- Review of the performance of closed transactions in NYGB's portfolio as summarized in Quarterly Investment Reports; and
- Review of NYGB's financial and impact metrics performance and outlook as summarized in the Quarterly Performance Reports.

More generally, the IRC will be responsible for reviewing and recommending approval of all key constituent plans and documents of NYGB, together with any material updates and/or proposed amendments thereto, including:

- Strategy and business plans;
- Overall capital deployment plans and strategies;
- Risk management practices and framework;
- Financial and economic performance metrics and reporting;
- Any material reports or documents required to be filed with the Commission or other State agencies.

The IRC will also be responsible for the following:

- Reviewing and recommending approval of any material amendments to NYGB Operations & Procedures Manual;
- Reviewing and recommending the Metrics Plan, the Impact Report and the Annual Plan for filing with the Commission;
- Reviewing and recommending approval of any material amendments to the Advisory Committee Charter;
- Reviewing and recommending approval of competitive and strategic opportunity summaries; and
- Reviewing NYGB's approval and portfolio management practices.

The IRC consists of the NYGB President, the heads of NYGB's various business functions, as well as other NYGB staff members designated by the NYGB President from time to time.

#### 4.4.4. Valuation Committee

The Valuation Committee monitors all portfolio transactions, which includes reviewing financial models, vetting the assumptions used to monitor and value transactions, ascribing and maintaining shadow ratings and assessing whether investments are valued appropriately. The Valuation Committee is chaired by the business function head of Risk & Finance and also includes the business function head of Finance & Operations, the Chief Financial Officer of NYSERDA, and the NYGB President.

#### 4.4.5. Advisory Committee

The Advisory Committee is a group of senior professionals, prominent in their fields, that delivers guidance on an ongoing basis to the NYGB President and management team regarding matters pertinent to NYGB's business. Advisory Committee members are appointed on the recommendation of NYGB's President, with the approval of NYSERDA's President & CEO. These members represent a range of backgrounds that may include energy and environmental issues (preferably focused on the clean energy sector), project development and finance, banking, capital/financial markets, portfolio management, new venture management/business development, utility and related infrastructure, engineering/technology, real estate, and environmental justice and advocacy. Advisory Committee member expertise includes deep knowledge of project financing structures; portfolio management, renewable energy investment, regulatory and operational expertise; and active investor experience in clean energy. The Advisory Committee includes experienced environmental justice advocates who can advise NYGB as it works to deliver benefits to disadvantaged communities through its investments. The Advisory Committee meets at least twice a year. Details regarding its members, purpose, objectives and terms of engagement are available at [www.greenbank.ny.gov/About/Advisory-Committee](http://www.greenbank.ny.gov/About/Advisory-Committee).

## 5. Impact Measurement & Reporting

### 5.1. Annual & Lifetime Estimated Impact Benefits

Central to measuring and monitoring impact are the concepts of estimated benefits for both annual (“**Annual Metrics**”) and lifetime (“**Lifetime Metrics**”) durations. Annual Metrics are relevant only to discussion of Direct Impact Benefits and refers to estimates of energy savings and clean energy generation in NYS for all projects expected to be installed and placed in service the first year after the availability period for NYGB capital has expired.<sup>30</sup> In most cases, this does not coincide with the first year of NYGB's investment, considering delayed draw schedules while projects are being constructed and/or portfolios of distributed assets are being assembled. Annual Metrics are also the basis for calculating the Lifetime Metrics of the projects that benefit from NYGB investment, depending on the expected Useful Life (in years) of the technologies deployed.<sup>31</sup>

### 5.2. Methodology to Assess NYGB Impact

In managing its investment process and activity to achieve the Direct Impact Benefit Objectives and to maximize other impacts, NYGB engages its counterparties during the structuring and negotiation phase of each new investment. NYGB assesses the scope of all projects and initiatives included in any proposed investment and determines data sets and calculations needed to estimate the

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<sup>30</sup> All Annual metrics are estimates and refer to the first year of estimated benefits (e.g., energy saved, installed capacity, GHG reductions) which are expected to occur when each underlying project is fully installed. This means that estimated Annual benefits across NYGB's portfolio do not (and are not intended to) correspond to installed benefits in any given year and instead represent cumulative estimated benefits across the portfolio based on transactions executed throughout the CEF term. Note that underlying projects are usually installed over one or more years following execution of investment agreements (reflecting project development/implementation and funding deployment cycles). The sum of all estimated Annual measures approximates the total annual CEF benefits goals for NYGB investments at the end of the CEF term (i.e., in 2025). As set out in Section 2.2.2 of the Metrics Plan, NYGB reports on installed energy and environmental benefits associated with NYGB's investments in the prescribed form annually, with such reporting included in the Quarterly Metrics Report for each quarter ending December 31.

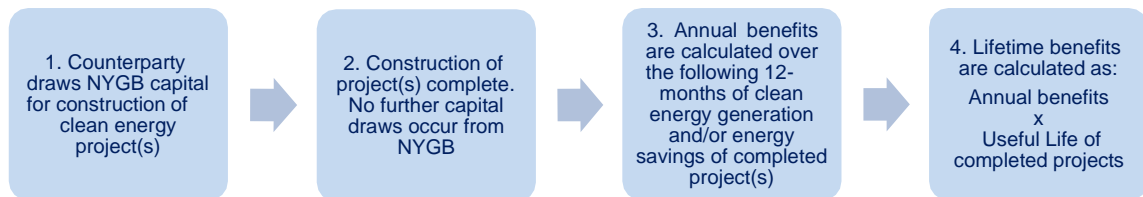
<sup>31</sup> Note that NYGB's “expected Useful Life” applies to all technologies, including the “Effective Useful Life” approach applied by NYSERDA to new energy efficient equipment for the purpose of determining lifetime energy savings as found in Appendix P of the “New York Standard Approach for Estimating Energy Savings from Energy Efficiency Programs” (NYSERDA's technical resources manual). NYGB follows such guidelines when estimating the useful life of energy efficient equipment installed by counterparties to remain consistent with defined NYSERDA approaches. In the absence of a prescribed approach, NYGB consults independent engineers, program staff, and technical studies to determine the appropriate expected Useful Life. See: <https://www3.dps.ny.gov/W/PSCWeb.nsf/All/72C23DECF52920A85257F1100671BDD>.

corresponding potential Direct and/or Indirect Impact Benefits. Estimates reflect the sustainable infrastructure or clean energy technologies utilized, installed capacity, number of systems to be deployed, operational yield of systems (i.e., capacity factors), industry-accepted electrical and fuel energy conversion factors and Useful Life of systems, among other factors. To control for exogenous factors (e.g., project ramp times, delays and seasonality), NYGB works with counterparties to identify low and high estimates of expected Impact Benefits. To ensure that the impact assessment methodology for any given investment is consistent with NYSERDA's methodologies for the CEF, NYGB leverages the experience of NYSERDA's performance management team and technical resource manuals.

After a transaction has received a recommendation to proceed from NYGB's Greenlight Committee, NYGB further refines its estimates of the metrics in NYS for all projects associated with NYGB investments. Once energy savings and/or clean energy generation are estimated, NYGB calculates the estimated GHG emissions reductions, utilizing electric and fuel energy conversion factors consistent with the CEF.

Figure 5 illustrates the steps involved in the calculation of Annual and Lifetime metrics for a typical clean energy technology project such as PV or energy efficiency where there are expected to be direct Impact Benefits. GHG emissions estimation methodologies can vary depending on the technology type (e.g., a building retrofit that includes the installation of more efficient lighting will be expected to reduce the energy footprint of the building; the electricity saved can be calculated and those savings can be converted into emission reductions).

Figure 5: Annual & Lifetime Direct Impact Benefit Calculation Methodology



Under the CEF and pursuant to the evaluation requirements set out in the Metrics Plan, NYSERDA carries out baseline impact evaluation efforts after a critical mass of investment types close and conducts follow-up evaluations to assess the accuracy of the estimation methods used by NYGB.<sup>32</sup>

### 5.3. Impact Reporting Process

Once a new investment is closed, NYGB publishes a transaction profile on its website<sup>33</sup> that includes estimates of the impact NYGB's participation in the investment is expected to have in terms of incremental clean energy benefits in NYS and financial market transformation ("**Transaction Profile**"). The transparency provided by Transaction Profiles highlights both NYGB-specific activities and the evolving available financing techniques that can be utilized to expand sustainable infrastructure in the State, for the benefit of potential clients and counterparties, as well as for stakeholders.

Pursuant to the reporting requirements set out in the Metrics Plan, NYGB aggregates the estimated direct Impact Benefit ranges from the Transaction Profiles and reports the cumulative estimated direct

<sup>32</sup> Metrics Plan, Section 3.0, pages 6 – 8.

<sup>33</sup> Pursuant to the requirements of the Metrics Plan, Transaction Profiles are the primary public document describing NYGB's individual investments. NYGB Transaction Profiles can be found at [www.greenbank.ny.gov/Investments/Portfolio](http://www.greenbank.ny.gov/Investments/Portfolio).

Impact Benefits in its Quarterly Metrics Reports and webinars.<sup>34</sup> These aggregate estimates inform all interested stakeholders of how NYGB has performed on an incremental quarterly basis and toward overall CEF goals. NYGB will include estimated indirect benefits in aggregate reporting to more fully track the catalytic effect of NYGB activity on the clean energy market in the State and provide a more complete picture of impact, as contemplated by the CEF Order. At multi-year intervals, market assessments are expected to be conducted as needed to validate that estimated indirect Impact Benefits are manifested over time in NYS.

NYGB reports on the installed or Actual direct energy and environmental benefits of its Investment Portfolio on an aggregate basis each year. These annual reports reflect:

- Performance data periodically received from NYGB's clients and counterparties for clean energy installations made pursuant to and with the benefit of NYGB investments, as required by negotiated investment terms, in aggregate; and
- Technology performance and conversion factors, consistent with NYSERDA's overall reporting practices, as applicable.

NYGB reports on Actual energy and environmental performance each calendar year during the term of the CEF once annually each February.<sup>35</sup>

NYGB also submits periodic performance data for inclusion into other public reports, including the CEF (quarterly and annually) and other applicable State reporting requirements.

Figure 6 presents an illustrative example of the calculation of direct Impact Benefits.

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<sup>34</sup> Quarterly Metrics Reports and webinars can be found at [www.greenbank.ny.gov/Resources/Public-Filings](http://www.greenbank.ny.gov/Resources/Public-Filings) and [www.greenbank.ny.gov/Resources/Publications-and-Events](http://www.greenbank.ny.gov/Resources/Publications-and-Events), respectively.

<sup>35</sup> NYGB has reported Actuals in the Quarterly Metrics Report for the years ending December 31, 2016, 2017, 2018, 2019, 2020, and 2021. Each report is available at [www.greenbank.ny.gov/Resources/Public-Filings](http://www.greenbank.ny.gov/Resources/Public-Filings).

Figure 6: Estimating Direct Impact & Reporting Benefits

Calculation of Direct Impact Benefits – An Illustrative Example

In 2019, Clean Energy Co. secured \$20.0 million of financing from NYGB with a three-year availability period. At closing, Clean Energy Co. plans to install five clean energy systems in NYS. Each system has a 20-year Useful Life and contributes an estimated incremental 5,000 metric tons of GHG emissions reductions per year of operation. A system's Annual savings are 5,000 metric tons and the estimated Lifetime savings are 100,000 metrics tons in NYS (i.e., 5,000 metric tons x 20 years). The entire project would contribute an estimated Annual savings of 25,000 metric tons (i.e., 5 systems x 5,000 Annual savings per system) and an estimated Lifetime savings of 500,000 metric tons in NYS over the 20-year Useful Life (i.e., 5 systems x 5,000 Annual savings per system x 20 years).

At the time of transaction close, NYGB would include the estimated 500,000 metric tons of GHG reductions as part of its estimated Impact Benefits, tied to its Overall Investments to Date and reported in the applicable Quarterly Metrics Report.

Over the three-year availability period, NYGB monitors its borrower's progress and reports summary data relating to the actual systems deployed (aggregated across NYGB's entire portfolio) each year.

In 2022, at the end of the three-year availability period, NYGB would assess if all five systems were installed and placed in service as expected. If, for example, more than five were built, NYGB would adjust the estimated aggregated portfolio benefits to account for the actual systems placed in service in NYS. This adjustment is referred to as a **"True-Up,"** a practice that is continuously exercised throughout the life of the CEF. True-Ups have a positive effect where more systems are built than expected, or per system output is greater than anticipated. If fewer than expected systems are built, or per system output is less than anticipated, NYGB would also adjust its reported impact accordingly.

While the estimation of Indirect Impact Benefits will depend on, and vary by, the type of NYGB investment into clean energy assets that may already exist, NYGB's core methodology considers parameters such as NYGB investment amount, assumed debt-to-equity ratios and technology costs per unit of installed capacity for new projects (i.e., \$/MW or \$/kilowatt ("**kW**")) to determine the size of a new project that would be supported if NYGB committed a similar amount of capital to a developer planning to install new resources. In this way, Indirect Impact Benefits are intended to capture the follow-on activity in the State catalyzed by NYGB's investment. NYGB activity that generates Indirect Impact Benefits frequently has the effect of helping to preserve and get more from existing renewable assets, as well as contribute to the preservation of fuel diversity in the State – both critical components to meeting NYS goals, including with respect to resiliency.