



New York Green Bank

Petition to Complete Capitalization

Case 13-M-0412

October 30, 2014

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Petition of the New York State Energy
Research and Development Authority
to Complete Capitalization of the
New York Green Bank

Case 13-M-0412

1.0 Introduction

The New York State Energy Research and Development Authority (“NYSERDA”) is filing this Petition to Complete Capitalization of the New York Green Bank (“Petition”) with the New York State Public Service Commission (the “Commission”) seeking an order authorizing NYSERDA to allocate a total of \$781.5 million to provide the balance of the \$1 billion intended capitalization of the New York Green Bank (“NYGB”).

This \$781.5 million is the same amount that is set out in the Clean Energy Fund (“CEF”) Proposal, filed by NYSERDA on September 23, 2014¹, to complete NYGB’s capitalization from the State. To efficiently and properly support the ongoing business of NYGB and its annual funding needs², NYSERDA requests that the Commission authorize the allocation in four equal annual installments of \$195.375 million in June of each of 2015, 2016, 2017 and 2018 as follows:

- (a) Funds to be made available to NYGB in June 2015 will be from available cash balances in dedicated clean energy accounts; and
- (b) Funds to be made available to NYGB in each of June 2016, 2017 and 2018 will be from incremental collections for which authorization is requested in the CEF Proposal.

Consistent with the initial NYGB Petition³, NYGB is being managed to become self-sufficient and self-sustaining and will not seek additional capital allocations from the Commission beyond the amount requested in this Petition.

¹ Case 14-M-0094, Proceeding on Motion of the Commission to Consider a Clean Energy Fund” issued and effective May 8, 2014; Clean Energy Fund Proposal.

² Currently estimated to be ~\$200 million per year, based on initial market response and needs.

³ Petition of the New York State Energy Research and Development Authority to Provide Initial Capitalization for the New York Green Bank, dated September 9, 2013.

The NYGB initiative has made great progress to date in utilizing its initial capitalization, and is contributing to the New York State energy policy priority of increasing private investment, which will lay the foundation for achieving greater scale of clean energy deployment. Specifically, on October 22, 2014 Governor Andrew M. Cuomo announced NYGB's first seven transactions⁴ - agreements in principle reached with certain global and statewide financial services institutions and developers. NYGB is working diligently toward the completion of each of these transactions; NYGB progress in closing transactions will be reflected in its quarterly filings with the Commission.

Collectively, NYGB's first seven transactions are expected to result in investments totaling more than \$800 million in clean energy projects in New York State, as well as material greenhouse gas ("GHG") savings of 575,000 metric tons annually, equivalent to 12,285,523 MMBtu of annual energy savings. NYGB's current transactions are discussed in more detail in Sections 4.2 and 4.3 of this Petition, and involve investment of approximately \$200 million, nearly all of NYGB's current capital. This means that NYGB's initial transactions alone will mobilize and leverage private sector capital at the ratio of 3:1 - \$200 million of NYGB investment leveraging \$600 million of private investment - consistent with NYGB and State energy policy objectives of animating commercial markets for the benefit of all New Yorkers. This initial 3:1 leverage of private sector capital ratio projects to equal an 8:1 ratio after 10 years (factoring in redeployments), and even higher for a 20-year time horizon, with capital preserved for further reinvestment.

The balance of NYGB's capitalization is requested at this time to build upon the initial momentum, ensure continuity of investment activities and market-responsiveness, minimize any chilling effects from capital uncertainties and support NYGB's ongoing risk management strategy by building a \$1 billion portfolio of investments.

This Petition provides a review and update of NYGB's progress to date, since the order issued by the Commission on December 19, 2013 (the "**Initial Capitalization Order**")⁵. Following a discussion of the establishment of NYGB, this Petition outlines key milestones achieved to date and ongoing execution to plan, as well as the favorable and robust market response to NYGB since its inception. In addition, this Petition describes NYGB's current investment and business activities, the evolving market and NYGB's ongoing expected impacts. These issues are addressed in the context of New York State's integrated energy policy and strategy, which incorporates the central elements of the Reforming the Energy Vision ("**REV**")⁶ and CEF Proceedings. NYGB is an important component of the State's integrated energy strategy, focused on addressing gaps and barriers in the clean energy finance markets in partnership with the private sector, including the effective leveraging of public dollars to produce the desired clean energy results. NYGB also

⁴ "Governor Cuomo Announces First New York Green Bank Transactions", press release dated October 22, 2014.

⁵ Case 13-M-0412, "Order Establishing New York Green Bank and Providing Initial Capitalization", issued and effective December 19, 2013.

⁶ Case 14-M-0101, "Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, pursuant to an Order Instituting Proceeding" issued and effective April 25, 2014.

requests that the scope of its eligible investment types be broadened to include technologies included in the current environmental impact statement being considered in the REV and CEF proceedings.

This Petition then discusses the material issues surrounding this capitalization completion request by NYSERDA, including drivers of the amounts and timing, all in the context of NYGB as the steward of significant public funds charged with achieving key outcomes in the clean energy sector as efficiently and effectively as possible.

2.0 Establishment & Launch of NYGB

NYGB was proposed by Governor Cuomo in his 2013 State of the State address as a \$1 billion green bank, capable of using limited public dollars to mobilize multiples of private capital investment to stimulate the growth of New York's clean energy economy. The specific mission of NYGB is to accelerate clean energy deployment in New York State by working in partnership with the private sector to transform financing markets. The Commission approved the establishment and initial capitalization of NYGB in the Initial Capitalization Order, authorizing the reallocation of \$165.6 million in uncommitted funds from other Commission-regulated programs⁷. Together with approximately \$52.9 million allocated from Regional Greenhouse Gas Initiative ("RGGI") auction proceeds, the current capitalization of NYGB is \$218.5 million⁸. The Initial Capitalization Order also sets out certain critical elements of NYGB's specific mission, which were adopted and amplified in the New York Green Bank Business Plan (Case 13-M-0412), filed with the Commission on June 19, 2014 (the "Initial Business Plan Filing").

One of the primary goals of New York State's energy strategy is to take New York's clean energy market to the next level by achieving significant scale and momentum through capital market intervention. Using a portion of the State's annual clean energy funding to fully capitalize NYGB over a defined period will contribute to that goal, as NYGB deploys these funds, working with private sector clients and partners in areas where financing gaps exist, stimulating market growth. As NYGB works in areas where its clients' opportunities are constrained by the lack of available financing, NYGB has the ability to charge for its capital and so generate assets that earn market-based rates of return. Since NYGB provides financial products with defined repayment and projected holding periods, NYGB also has the ability to recycle its capital into successive investments - all as part of an integrated plan to provide better returns to ratepayers in the

⁷ Initial NYGB funding consisted of \$3.5 million in uncommitted NYSERDA Energy Efficiency Portfolio Standard ("EEPS") I funds; \$22.1 million in uncommitted NYSERDA Technology and Market Development ("T&MD")/System Benefits Charge ("SBC") funds; \$50.0 million in NYSERDA Renewable Portfolio Standard ("RPS") funds; and \$90.0 million in uncommitted utility EEPS I funds.

⁸In addition, in May 2014 NYSERDA transferred \$500,000 of U.S. Department of Energy ("DOE") funds specifically designated for providing loan loss reserve facilities to support commercial property-assessed clean energy ("C-PACE") projects to NYGB given the likely fit of these types of activities within the broader NYGB portfolio. These funds have been committed by NYGB to the Energy Improvement Corporation transaction announced on May 28, 2014 and described in [Section 4.2](#). The DOE funds, together with all repayments and related fees over time, must remain segregated and available only for the particular purposes originally intended. Because of their source, these funds are not considered part of New York State's allocation of NYGB's capitalization.

transformation of New York State's energy markets. While the Draft State Energy Plan⁹, REV and CEF form the foundation to New York's transforming energy system and markets, the \$1 billion NYGB has been designed as a specific lever to be applied to facilitate the private sector's clean energy investments upon which the success of REV and CEF rely.

NYGB officially opened for business on February 5, 2014, with the issuance of a broad market solicitation for investment proposals (the "RFP")¹⁰. The solicitation is open and is intended as a primary intake mechanism for NYGB to source qualifying transactions. It encourages private sector capital providers and other clean energy industry participants to propose clean energy investments that, with the participation of NYGB, would facilitate greater deployment of qualifying technologies in projects across New York State than might otherwise be feasible in current commercial markets. Once fully capitalized, NYGB will continue as an independent, self-sustaining financial institution that will preserve its capital base while covering its own costs of doing business.

NYSERDA and NYGB remain highly aware of, and focused upon, NYGB's role as a steward of the considerable public funds with which NYGB has been and will (on full capitalization) be entrusted. These funds will be put to work to realize particular clean energy objectives through the financing markets, consistent with NYGB's mission. As part of the structural and operational elements that have been established and implemented in starting up NYGB, effective management of risk is the cornerstone of NYGB's ability to be self-sustaining - meeting the requirement that it generate returns in excess of outgoing expenditures. The Initial Business Plan Filing¹¹ details the key risks in NYGB's business, risk management policies, mitigants and risk management oversight. NYGB's investment risks are specifically identified, managed and monitored through the application of investment analysis and review, portfolio construction, ongoing portfolio monitoring and management, and organizational risk culture principles.

As is described in the Initial Business Plan Filing, NYGB employs various organizational controls in the origination, evaluation and response to investment opportunities consistent with the prudent conduct of its business. In addition to NYGB bringing to bear the experience of its staff and management, input, review and approvals are required at prescribed points in its investment cycle. Ultimate risk analysis and peer review at NYGB is provided by the Investment & Risk Committee ("IRC") with respect to both investment and enterprise risks. No transaction is entered into without thorough vetting by the IRC. Further, monitoring and oversight of NYGB activities is also achieved through the quarterly and annual filing of public reports with the Commission pursuant to the Metrics, Reporting & Evaluation Plan filed June 19, 2014 (the "Metrics Plan")¹².

⁹ The 2014 draft of "Shaping the Future of Energy - New York State Energy Plan" issued by the New York State Energy Planning Board (the "Draft State Energy Plan").

¹⁰ Clean Energy Financing Arrangements - Request for Proposals (RFP) No. 1, available at www.greenbank.ny.gov.

¹¹ See Initial Business Plan Filing, Section 6.0 (Risk Management & Oversight), pages 21 - 25.

¹² Case 13-M-0412, prepared and filed in accordance with the Initial Capitalization Order.

3.0 Major Milestones & Ongoing Execution to Plan

In the Initial Capitalization Order the Commission outlined certain requirements to be addressed and satisfied as part of NYGB's establishment and ramping up of business operations, all of which have been accomplished in a timely fashion. In addition, since NYGB was opened for business in February 2014, key organizational elements have been created and put in place on schedule to ensure that, as NYGB's investment activities increase, the proper risk and operational frameworks exist and are fully functional. The NYGB team has been, and remains, intently focused on the many critical activities on parallel paths that are involved in starting up an organization of this type and ensuring proper controls are in place.

Major milestone achievements to date include:

- (a) Preparing and issuing the detailed RFP to the market, signaling NYGB's opening for business with a clear specification of the types of proposals (in terms of technologies, counterparties and financing arrangements) that are eligible for NYGB investment;
- (b) Preparing and submitting the "New York Green Bank Organization Plan Filing for the Public Service Commission" on February 18, 2014 (including detailed milestones to establish NYGB and the Advisory Committee Framework);
- (c) Undertaking an in-depth strategy and business planning process covering the period through June 2015 and reflecting this in the Initial Business Plan Filing which was completed and submitted to the Commission on June 19, 2014;
- (d) Developing, in consultation with the Department of Public Service ("DPS"), the specific and detailed Metrics Plan including soliciting public review and input, all of which was completed with a filing with the Commission on June 19, 2014;
- (e) Developing, forming and implementing the following aspects of the business, including delivering a certification providing confirmation of the same to the Commission¹³:
 - i. Investment proposal evaluation and selection criteria and procedures;
 - ii. Investment criteria, including the minimum investment criteria prescribed by the Commission in the Initial Capitalization Order;
 - iii. Investment analysis and approval methodologies and procedures;
 - iv. Risk management protocols; and

¹³ Letter from Alfred Griffin, President of NYGB, to the Hon. Kathleen H. Burgess, Secretary to the Commission, filed on July 24, 2014 (<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=13-m-0412&submit=Search+by+Case+Number>).

- v. Establishment of the IRC.

- (f) Hiring senior leadership with deep experience in banking, energy finance and project development and continuing to build out the team with critical transaction and support personnel;

- (g) Identifying and appointing a well-qualified and diverse external Advisory Committee to provide insights, guidance and advice on pertinent matters to NYGB as it executes upon its mission in line with commercial best practices;

- (h) Revising and continually enhancing all external affairs materials (including the website) to ensure coherence and clarity in communicating NYGB's mission, activities and terms of engagement to actual and potential clients and partners, colleagues, collaborators and all other stakeholders, so that all understand the nature of the opportunity, what NYGB is designed to achieve and how to engage with NYGB;

- (i) Engaging qualified legal and technical advisors based on competitive procurement processes to support NYGB's investment structuring, diligence, negotiation and execution in a timely and efficient manner;

- (j) Receiving, reviewing, evaluating and responding in a timely manner to investment proposals on an ongoing basis pursuant to standardized procedures to ensure that all interested parties have the opportunity to present their proposals to NYGB;

- (k) Originating a number of deals in NYGB's pipeline and undertaking significant progress towards closing, including as publicly announced on October 22, 2014;

- (l) Ongoing origination meetings with existing and potential clients and partners in connection with projects that meet NYGB's mission and investment requirements to maintain the flow of market feedback to inform NYGB's deployment of funds in the most effective ways; and

- (m) Ongoing informational and other meetings and interactions with stakeholders, including industry groups, regulators, RGGI and others so that all parties remain updated on NYGB activities, opportunities and outcomes.

In summary, NYGB is on track and executing to plan in all respects.

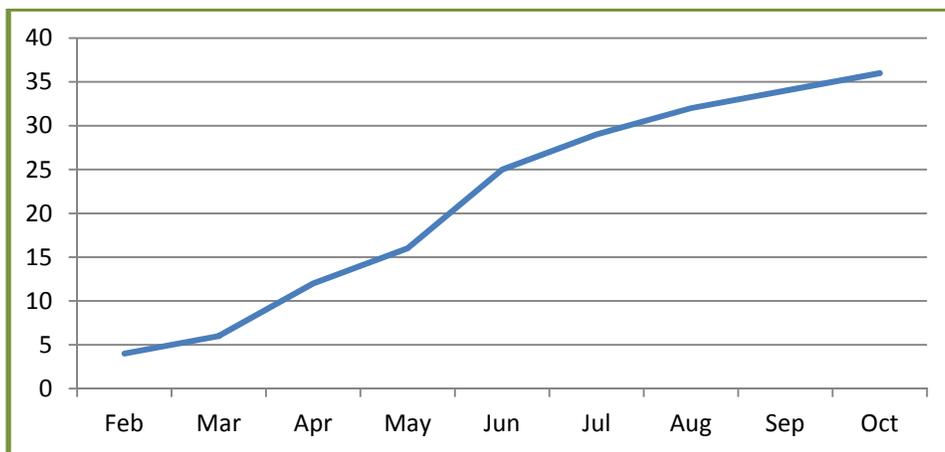
4.0 Market Response, Investment Activity & Benefits

4.1 Market Response

Notwithstanding all the research, analysis, market assessments and strategy development that is undertaken with major initiatives like NYGB, moving to real-world implementation inevitably involves some uncertainty as to whether predicted market needs of the particular types, consistent with NYGB's mission, will materialize and as to the timeframe over which market demand coalesces and becomes express. Since the beginning of 2014, NYGB has emphasized extensive market interactions to introduce and explain the mission of NYGB and its novel approach in the clean energy markets, moving away from the provision of one-time grants and subsidies to the leveraging of public and private capital on commercial terms.

The business of informing all relevant audiences and mobilizing interest and capital for energy projects is a continuous exercise. Energy investments are generally multi-faceted and capital intensive, and involve significant planning, development, structuring and the coordination of numerous parties. Nevertheless, in the short time since NYGB's RFP was published there has been a steady flow of quality formal submissions on a cumulative basis, as shown in [Figure 1](#). This has produced a solid and growing pipeline of "active" deals for NYGB, consistent with its milestone goals and as reflected in the recent public announcement made by Governor Cuomo¹⁴.

Figure 1. Number of Formal Responses to NYGB's Investment Solicitation (RFP) - Cumulative



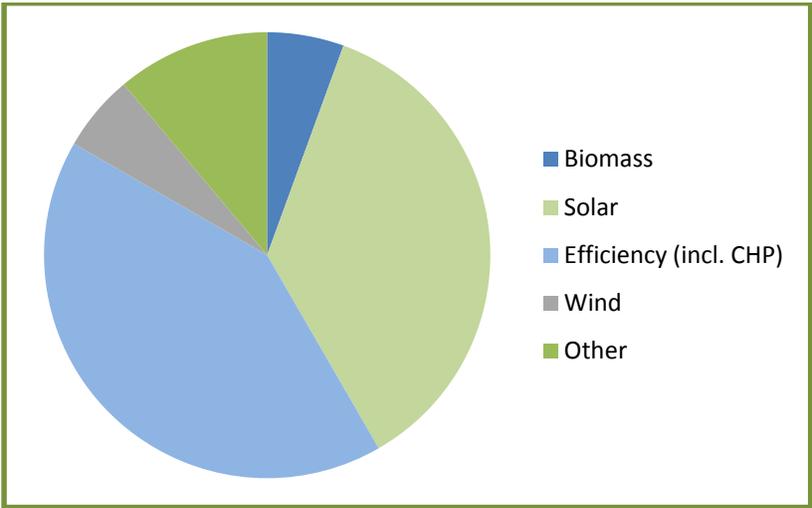
Fundamentally, the market's robust response - and in particular, market actors' willingness to pay market-based returns to NYGB for its potential investments - confirms the need for an entity like NYGB and demonstrates that the private sector is ready to engage in public-private partnerships to drive a considerable increase in the deployment of clean energy projects in New York State, while verifying the business

¹⁴ "Governor Cuomo Announces First New York Green Bank Transactions", press release dated October 22, 2014.

opportunity of investing in this steadily growing industry. As a result, NYGB expects to close a number of the proposals already received (including those recently announced), and anticipates steady growth in its pipeline as a result of continuing engagement with potential clients and partners. Transaction announcements can also be expected to motivate more market participants to respond to NYGB’s RFP, further animating deal flow in a virtuous cycle of expanding clean energy investments in the State.

NYGB was created and is being operated as a market-focused and market-responsive entity centered on identifying and addressing clean energy financing gaps and barriers. NYGB undertakes in-depth and multi-faceted interactions with industry participants to elicit, directly from the marketplace, the types of products and transaction structures that would unleash more private capital into, and scale deployment of, clean energy within New York State. Based on responses to the RFP received by NYGB to date, this approach is being validated. Further, the input, feedback and proposals received from private sector participants so far represent a variety of projects and potential projects by technology¹⁵ (see [Figure 2](#)). These projects squarely support overarching State goals with respect to distributed energy resources (“DER”) and fuel diversity, with the attendant positive implications for energy infrastructure resiliency.

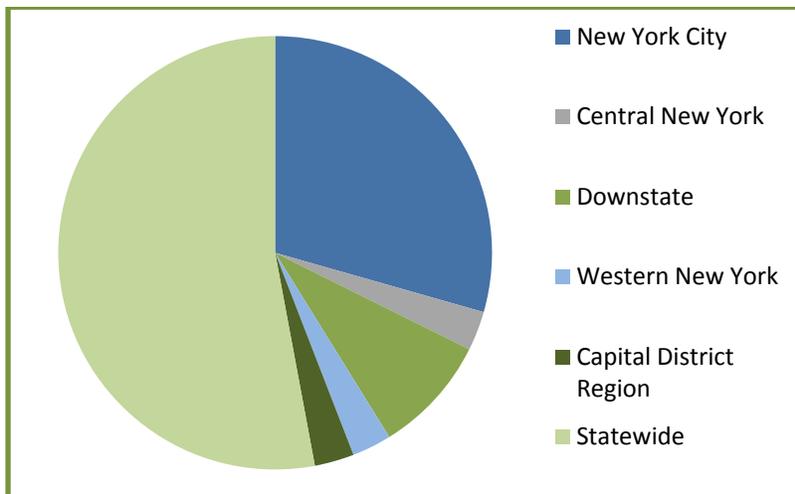
Figure 2. Variety of Technologies in Proposed Investments in New York State (by Number of Proposals)



In addition, NYGB investment opportunities, based on proposals received to date, are diverse by geography¹⁵ as shown in [Figure 3](#), affirming the existence of market demand for NYGB investment across the State to the benefit of a broad cross-section of New York businesses and citizens.

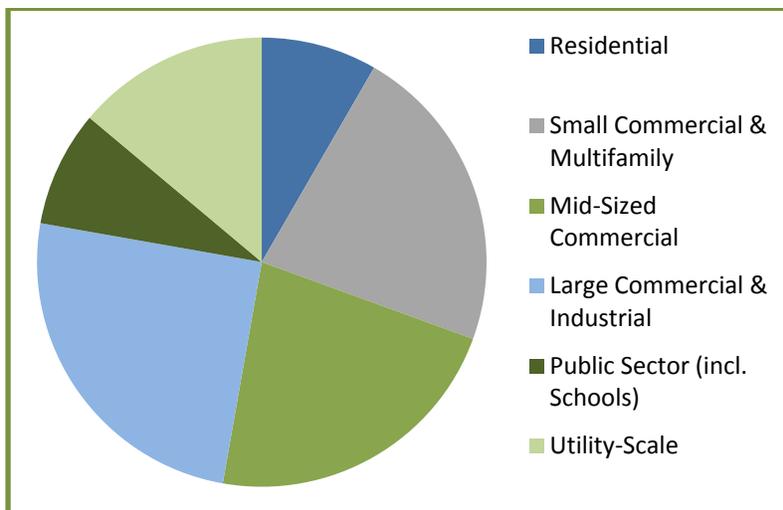
¹⁵ Based on the number of proposals received.

Figure 3. Geographic Diversity of Proposed Investments in New York State (by Number of Proposals)¹⁶



It is also encouraging that the responses to NYGB’s RFP demonstrate apparent demand for investments that are varied by end-use customer segment¹⁷, as set out in [Figure 4](#). This indicates that the benefits of NYGB - even though it is directly active only in the wholesale financial markets - can be expected to ultimately accrue to different end-use groups through NYGB’s clients and partners.

Figure 4. Varied End-Use Customer Segments in New York State (by Number of Proposals)



¹⁶ Note that “New York City” includes the five boroughs and Long Island. “Downstate” includes Westchester north through the Mid-Hudson Valley.

¹⁷ Based on number of proposals received.

4.2 Investment Activity

NYGB is actively working on a number of transactions in its pipeline and, as recently announced, has agreed in principle to complete its first seven transactions with certain global and statewide financial services institutions and developers. NYGB is working diligently toward the completion of each of these transactions; NYGB progress in closing transactions will be reflected in its quarterly filings with the Commission. Collectively, the seven transactions are expected to result in investments totaling more than \$800 million in clean energy projects in New York State. The substance of the announcement confirms the efficacy of the State's new method for accelerating and expanding private sector investments in New York's clean energy economy by utilizing targeted public-private initiatives like NYGB and adopting a more market-based approach.

As Governor Cuomo noted¹⁸, “[b]y leveraging the financial capacity of the private sector with an eye toward clean energy projects, NY Green Bank is creating a cleaner state for all New Yorkers. The State's contribution to the viability of these projects will support jobs and economic activity in our communities and it is helping to grow the market for clean technology in New York by paving the way for more frequent and accessible funding going forward.”

The parties to the transactions announced include a diverse group of established and experienced financial and energy market participants¹⁹. An independent study²⁰ projects the total market value of unrealized opportunities for New York-based clean energy projects to be in the tens of billions of dollars. The size of this untapped market leaves plenty of headroom for NYGB's \$1 billion capitalization to effectively stimulate the deployment of significantly greater amounts of private capital, as NYGB's ongoing investment approach (investing, receiving the return of its capital, then reinvesting) makes commercial financial institutions and other industry participants increasingly comfortable with these transaction types and willing to pursue them more vigorously.

The initial set of NYGB transactions involve NYGB funding of approximately \$200 million - close to the total amount of its current capitalization. This underscores the importance of the timing of this Petition as NYSERDA's objective is to ensure the ability of NYGB to conduct its business on a continuous basis in executing upon its pipeline of transactions and responding to market demand, without the disruptions and uncertainties that can result from capital availability concerns. Equally, it is worth noting the important role that the scale of NYGB - as a \$1 billion initiative - has played in generating the market response to date.

¹⁸ “Governor Cuomo Announces First New York Green Bank Transactions”, press release dated October 22, 2014.

¹⁹ Ameresco, Bank of America Merrill Lynch, BQ Energy, Citi, Deutsche Bank, First Eastern Investment Group, First Niagara Bank, GreenCity Power, M&T Bank, Renewable Funding, Sustainable Development Capital, and Tulum Management.

²⁰ “New York State Green Bank, Business Plan Development, Final Report” issued by Booz & Co. and dated September 3, 2013 (the “Market Study”).

NYGB's full capitalization of \$1 billion, as announced by Governor Cuomo, has been an essential element in attracting the initial impressive market engagement and investment proposal response.

Upon closing of the initial transactions, NYGB's investments will stimulate an additional \$600 million of capital from private sector parties, collectively mobilizing nearly \$800 million of new investment into New York clean energy assets - all resulting from NYGB's business development and operations efforts since its launch in February 2014. Similar to a commercial entity, NYGB's initial investments will be repaid on market terms by the parties to the transactions, allowing NYGB to effectively recycle those funds into new and subsequent opportunities. This recycling will ensure that State funds are further leveraged and will enable even greater impact as the same base of public dollars is continually redeployed.

The types of transactions that NYGB is actively working to finalize, together with those in its pipeline for future execution, not only satisfy the requisite eligibility and investment criteria but also provide concrete examples of the ways in which NYGB investments will meet the Commission's minimum investment criteria as set out in the Initial Capitalization Order²¹ and reproduced in [Figure 5](#).

Figure 5. Initial Capitalization Order - NYGB Investment Criteria

- Transactions will have expected financial returns such that the revenues of NYGB on a portfolio basis will be in excess of expected portfolio losses;
- 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
- Transactions will have the potential for energy savings and/or clean energy generation that will contribute to GHG reductions in support of New York's clean energy policies.

4.2.1 Current Transactions Contributing to Financing Market Development

NYGB's market-focused approach of addressing financing barriers and enabling access to private capital makes it a first-of-its-kind institution that will increase investments in New York's clean energy economy. The recently-announced transactions demonstrate how NYGB facilitates clean energy projects that otherwise would not have happened by overcoming market barriers, including:

- Lack of demonstrated scale required for institutional investor involvement in certain transaction types and project deployment models;
- Transaction complexity amplified by the lack of precedent transactions and standardization;

²¹ See Initial Capitalization Order at page 24.

- Tenor and other lending constraints impacted by bank regulatory environment; and
- Concentration of project finance and/or structured finance experience in institutions that may not be the most logical capital providers for small and medium scale projects.

The Metrics Plan developed by NYSERDA and NYGB in consultation with the DPS (as required by the Initial Capitalization Order) outlines the specific type and scope of information that NYGB will provide in connection with its investments once “financing agreements are signed and closed”²². In particular, the Metrics Plan requires NYGB to create a “Transaction Profile” “to support evaluation design and other information needs”²³ that will be populated with summary information, plans and methods about each transaction including:

- “Market objectives and barriers being addressed;
- Most useful energy and environmental metrics;
- Plan for collecting associated requisite data; and
- Proposed method of outcome/impact evaluation by NYSERDA”²⁴.

Information regarding NYGB’s recently announced transactions is included below, providing examples of the nature and extent of NYGB’s investment activities to date. As with all responses to the RFP, each of the following transactions has been assessed using NYGB’s established internal processes and procedures.

- Expanding Commercial and Industrial (“C&I”) Energy Efficiency & Distributed Generation. Ameresco is a leading independent provider of comprehensive energy services, energy efficiency, infrastructure upgrades, asset sustainability and renewable energy solutions for facilities throughout North America. Ameresco would use proceeds from a NYGB credit facility to make investments in C&I clean energy projects in new markets to further their commitment in New York State. The capital provided by NYGB would be used in partnership with third party project lenders to finance projects utilizing energy savings, power purchase and/or lease agreements, providing scale in the C&I market and filling gaps of financing for longer tenors than are currently available.
- Energy Equipment Financing. A co-investment relationship between Bank of America Merrill Lynch (“BofA Merrill”) and NYGB seeks to expand and enhance BofA Merrill’s current capabilities to finance public and private sector clean energy projects, including renewable energy, energy efficiency and combined heat and power (“CHP”). NYGB will co-invest long-term capital that will be designed to enhance and potentially broaden BofA Merrill’s current suite of energy efficiency financing products

²² Metrics Plan, Section 5.4 (Defining Evaluation Benefits), page 8.

²³ *Ibid.*

²⁴ *Ibid.*

and capabilities. This additional capital will be applied to achieving deeper energy efficiency retrofits and greater savings for property owners across the State.

- (c) Using Energy Service Agreements (“ESAs”) to Grow Commercial Property Efficiency Markets. NYGB is working to provide a senior debt facility to Deutsche Bank (“DB”) to support its initiatives in energy efficiency projects under ESA structures, offering many potential benefits to building owners. When completed, this credit facility will support the execution of ESA-based retrofit projects with a range of real estate asset types, including commercial real estate properties - a segment that has largely not had access to financing for efficiency upgrades - thereby allowing for the more widespread adoption of ESA-based retrofits throughout the State.
- (d) Template for Mid-Sized Commercial Solar Projects with New Sources of Capital. First Niagara Bank and M&T Bank are in advanced negotiations, working towards providing financing for BQ Energy’s SteelSun (“Steel Sun”) 4 megawatt (“MW”) ground-mounted solar photovoltaic energy project on the former Bethlehem Steel Mill Site - a New York State Brownfields Cleanup site in Lackawanna. NYGB plans to provide certain guarantees to the bank lenders for construction and tax equity financing. These guarantees will help transform financing markets for smaller-scale commercial solar by demonstrating to the commercial markets that financings of this size are an attractive investment for institutions such as regional and community banks and can be replicated easily to potentially build larger aggregated and marketable portfolios.
- (e) Scaling up Residential Energy Efficiency. Renewable Funding (“RF”) together with Citigroup (“Citi”), seeks to bring RF’s Warehouse for Energy Efficiency Loans (“WHEEL”) program to New York State, providing large-scale capital for residential energy efficiency loans. NYGB will provide a credit facility to be used in conjunction with Citi and RF’s warehouse facility, and a \$100 million Medium Term Note financing program. NYGB participation will expand the availability of loans to homeowners in the State and promote the creation of a marketplace for the securitization of residential energy efficiency loans.
- (f) Building Marketable Portfolios of Energy Efficiency and Distributed Generation Assets for C&I and Public Buildings. Sustainable Development Capital, LLC (“SDCL”) has launched a new investment vehicle to invest in energy efficiency and distributed energy generation projects for commercial, industrial, and municipal buildings and other assets utilizing ESAs with property and infrastructure owners in the State. Upon closing, NYGB’s credit facility will provide senior loans to SDCL’s investment vehicle, capitalized by First Eastern Investment Group and other investors and managed by the dedicated energy efficiency investment arm of SDCL located in New York. This investment vehicle will finance various energy efficiency and distributed generation projects with the goal of

building portfolios of broadly standardized assets that are of sufficient size to attract new, direct investors.

- (g) Expanding Capital Availability for Small-Scale Commercial Cogeneration Projects. NYGB is working towards funding construction and permanent debt as the senior lender to GreenCity Power, LLC (“GCP”), a business which designs, builds, owns, and operates small-scale cogeneration projects in New York City’s largest commercial buildings (hospitals, hotels, office buildings, etc.). GCP’s projects will deploy high efficiency natural-gas-fired reciprocating engines to generate electricity, heating and cooling. NYGB will co-invest, along with Tulum Management, in GCP’s first five projects. Once a target portfolio of operating projects has been developed, institutional investors are expected to provide permanent funding.

NYGB is also participating in a \$75 million agreement with BofA Merrill and the Energy Improvement Corporation (“EIC”) in an energy efficiency and renewable program currently effective throughout the State²⁵. EIC’s Energize NY Property Assessed Clean Energy (“PACE”) Finance Program represents one of the first PACE program financing arrangements in which a leading global financial institution has participated. Subject to mortgage holder consent where applicable, Energize NY offers tax lien secured financings to commercial property owners investing in energy improvements that meet eligibility requirements for ownership, value of property and energy improvement type. This transaction, including NYGB’s credit support, materially contributes to the commercial development and expansion of the PACE program in the State, bringing commercial property owners in all participating counties a step closer to being able to access and benefit from energy efficiency retrofits, including energy savings.

4.2.2 Scope of Eligible Investments

Currently, in accordance with the Initial Capitalization Order, NYGB is limited to participating in financing arrangements for projects using technologies within the parameters of Commission SEQRA determinations in the SBC, EEPS and RPS programs²⁶, so long as project proponents also demonstrate a potential for increased deployment of clean energy and/or a potential for GHG reductions in New York State²⁷. NYGB requests that the Commission expand the scope of NYGB’s eligible investment types to mirror those included in the Generic Environmental Impact Statement currently under consideration in the REV and CEF proceedings²⁸. The DGEIS notes that “[t]o achieve the objectives established by the Commission in [the CEF Order], NYSERDA proposed a program framework configured around four program portfolios, designed to complement and align with the

²⁵ Funded from capital provided by U.S. DOE as described in Section 2.0, at note 8.

²⁶ See the Initial Capitalization Order, pages 14 - 16.

²⁷ NYGB has published illustrative guidelines for eligible investment types in the RFP; these guidelines are included in this Petition in the Appendix.

²⁸ “Draft Generic Environmental Impact Statement in Case 14-M-0101 - Reforming the Energy Vision and Case 14-M-0094 - Clean Energy Fund” issued on October 24, 2014 and prepared for the Commission by Industrial Economics, Incorporated and Optimal Energy, Incorporated (the “DGEIS”).

long-term energy objectives established by the REV and State Energy Plan policies”, specifically including NYGB²⁹. As stated, while the Draft State Energy Plan, REV and CEF form the foundation of New York’s efforts to transform energy systems and markets, the \$1 billion NYGB has been designed as a specific lever to facilitate the private sector’s investment in the DER and clean energy technologies upon which the success of REV and CEF rely. This request is entirely consistent with what is contemplated in the State’s energy strategy and policy, and specifically in the CEF Proposal³⁰. As discussed in detail in Section 5.0 of this Petition, NYGB is a key component in achieving, with REV and the CEF, the State’s unified, integrated energy strategy and so ought to be positioned to invest in technologies across the entire scope available in REV and the CEF.

NYGB’s business is driven primarily by the market and where financing gaps and barriers currently exist that are not being addressed by commercial incumbents or other State programs. The types of projects that are being submitted to NYGB for consideration and their distribution closely mirror the nature and extent of clean energy opportunities that exist in the State. For example, energy efficiency initiatives potentially have the largest impact on New York’s shift to a clean energy economy, across geographies and end-users. As noted in the *Energy Efficiency and Renewable Energy Potential Study of New York State Final Report* (the “**EE & RE Potential Study**”)³¹, capturing the achievable efficiency potential would generate nearly \$30 billion of net benefits to the State, with about two-thirds of achievable net benefits accruing from the commercial sector, and the balance coming mostly from the residential sector. Energy efficiency also represents an emerging opportunity at scale in that commercial financial markets, which have long been involved in utility scale renewable projects, are now turning attention to the ways in which they can participate in the diffuse energy efficiency sector. Similarly, private sector participants, in recognizing the movement towards distributed generation assets, particularly renewables, are looking to put capital to work in these segments in a way that addresses historic gaps and barriers around project size, new counterparties and structures, and a relative lack of standardization to date.

The motivation for finding commercial solutions - and hence the demand for NYGB involvement to facilitate the transition - is strong. The economic potential for renewable electric generation in New York, based on screening against projected avoided costs, represents significant growth from current levels. The EE & RE Potential Study found that by 2030 renewable generation has the economic potential to provide an additional 33,101 gigawatt-hours (“GWh”) of generation per year, which when combined with existing renewable generation in the State, represents 30% of projected electric generation needs³².

²⁹ *Ibid*, CEF “Program Direction and Funding Objective” Section on page 1-16.

³⁰ The CEF Proposal states (on page 38) that “[t]o synchronize with the mission of the CEF to provide comprehensive support for all clean energy activities, the NYGB is included herein as a component of the overall CEF”. Where CEF is designed to work in tandem with REV - specifically to build and scale markets around REV technologies - authorizing NYGB to invest in the broadest permitted selection of approved technologies as a lever in achieving overarching REV and CEF goals is justified.

³¹ Dated April 2014, sponsored by NYSERDA and prepared by Optimal Energy, Inc., the American Council for an Energy-Efficient Economy and the Vermont Energy Investment Corporation (Report Number 14 -19).

³² According to *Power Trends 2014 - Evolution of the Grid* published by the New York Independent System Operator (“NYISO”) total energy usage in 2013 was 163,514 GWh.

4.3 Benefits

The benefits to stakeholders of NYGB's activities as a fully capitalized entity materialize across a number of key objectives and deliverables consistent with overarching energy policy and strategy in the State.

Generally, the positive effects of NYGB's participation in the marketplace will be seen in the evolution and scale of clean energy markets³³, greater private sector participation, the creation of new asset classes and enhanced liquidity and efficient use of public dollars, as set out in Figure 6.

³³ As required by the Metrics Plan (see Section 5.2 (Market Evaluation), page 8), "[m]arket [e]valuation will help identify the effect of [NYGB] on transforming the clean energy finance market... Market [E]valuation will be conducted on sectors that [NYGB] has supported and will occur approximately three to five years following initial [NYGB] capital deployments", i.e., expected to begin in the period 2017 - 2019.

Figure 6. Before and After Effects of a Fully Capitalized NYGB

	Before NYGB	After NYGB
Clean Energy Markets	Many Projects Not Implemented. Economically and technically feasible clean energy projects are not completed because of lack of access to needed capital.	Increasing Availability of Capital. NYGB works with private sector to address real-time market needs to alleviate existing gaps and barriers with an emphasis on scale and ability to replicate, deployment opportunities are maximized.
Private Sector Participation	Certain Classes of Feasible Projects Shut-Out of Commercial Market Participation. Commercial markets focused on utility-scale, grid-connected generation projects, with limited focus on distributed resources or efficiency projects just outside of current lending scope (e.g., those of smaller size, involving less familiar structures, credits and counterparties etc.).	Successful Partnerships Lead to Expanded Market for Financing Opportunities. Mobilizing and leveraging private sector investments alongside NYGB funds produces greater capital availability to be deployed across larger numbers, types and locations of projects than would otherwise be the case, as NYGB acts to “crowd in” the private sector.
Asset Classes & Liquidity	Existing Slate of Investment Opportunities Precludes Participation by Some Private Capital Sources and End Users. Asset classes reflect commercial market focus on utility-scale and/or investment grade clean energy projects, limiting new investor types interested in exposure to distributed generation and efficiency assets. Concentration on highest credits hampers access to clean energy solutions for large proportion of NYS end users.	New Types of Investments and New Investors Materially Increase Private Investment in NYS Clean Energy Sector. NYGB and its clients and partners effectively drive the creation of new opportunities to invest and attract new sources of capital. This supports material expansion of clean energy financing markets in NYS through structured transactions involving first-of-their-kind ratings, bringing new players into transactions, creating structures allowing for aggregation of creditworthy projects into portfolios supporting resale and/or securitization (including standardization).
Efficient Use of Public Dollars to Address Financing Gaps	Focus on Government-Driven Grants & Subsidies. Public monies typically deployed as one-time grants or subsidies through pre-determined programs, without addressing specific market gaps and barriers through a holistic, systematic approach.	Transition to Market-Based Investments and Multiple Deployments for Each Dollar. NYGB achieving greater impact for each NYGB dollar invested by leveraging funds and institutional capabilities of its clients and partners. Generating fees at commercial rates and obtaining repayment of investments allows NYGB to be self-sustaining and recycle capital through successive investments. All achieved through NYGB’s focus on wholesale markets, proven technologies and employing existing financing tools and structures in innovative ways.

NYGB offers New York a route to get things done faster and with greater scale in the implementation of clean energy technologies - particularly distributed generation and efficiency assets - than would otherwise be the case, given the existing commercial market. NYGB operates on the near-frontier of current clean energy capital markets, focusing on areas where there is market interest but limited capital availability due to specific financing gaps and barriers.

Using the announced transactions as representative examples, certain early indicators of the type and scope of benefits to be realized from NYGB activities can be identified:

- (a) All the transactions described in Section 4.2 are good illustrations of how greater value can be derived from each dollar collected from ratepayers. Specifically, averaged across all these deals, an initial \$1.00 of ratepayer investment through NYGB will mobilize a further \$3.00 of investment by the private sector³⁴, representing leverage of funds on a deal-by-deal basis (before taking into account the additional effects of NYGB's ability to recycle capital through successive investments). The Market Study estimates that this initial NYGB 3:1 leverage of private sector capital ratio could be 8:1 after 10 years (factoring in redeployments), and even higher for a 20-year time horizon, with capital preserved for further reinvestment. This leveraging effect is critical to achieving New York's clean energy objectives as efficiently as possible, as it avoids the need for additional funding from ratepayers to plug what would otherwise be a gap in available private sector capital. Deploying capital through NYGB makes ratepayer dollars go further in that individual consumers would never be able to leverage their clean energy dollars in the way that NYGB can through its operations in the wholesale financial markets in partnership with the private sector. After deployment of its initial \$1 billion, on a rolling basis over five, ten and more years, NYGB is constantly making new investments to redeploy funds which are being repaid, maximizing NYGB's impact in the clean energy financing markets in New York State;
- (b) NYGB's business model represents a prudent use of collections in that NYGB investments create value streams consistent with State energy policy objectives, decrease GHGs and increase energy efficiency, clean energy installed capacity, grid resiliency and fuel diversity/neutrality, with effects across the State, including in rural communities;
- (c) Transactions like Steel Sun complement utility and community energy programs in opening up commercial avenues for smaller but replicable renewable projects. This type of transaction is not being looked at by any of the commercial participants as a one-off deal but rather part of constructing portfolios of assets in the context of building the larger market. In transactions like this, NYGB is facilitating the entry of private sector parties into the market earlier than they might otherwise. This yields a number of benefits, including demonstrating the attractiveness of investments of this type, as well as furthering achievement of the goals of New York's energy policy, through private action and private capital rather than government intervention;
- (d) Renewable energy transactions have been shown to be job creators in the places where those projects are deployed. The April 2014 *Renewable Energy Finance, Market Policy & Overview* undertaken by the U.S. Partnership for Renewable Energy Finance ("US PREF"), a program of the American Council on Renewable Energy ("ACORE") notes that the solar industry experienced a nearly 20% growth in employment from 2012 - 2013, 10 times the national average. The industry is

³⁴ Around \$200 million of NYGB investment will mobilize \$600 Million of private capital, producing this 3:1 ratio.

forecasting jobs growth at 15.6% in 2014. Given the increasing solar investment activity within New York, including that mobilized by NYGB, similar increases can be expected in related employment within the State. While job-creation impacts may be considered second and third order benefits from the business activities of NYGB, it is reasonable to recognize that NYGB is a material, if indirect, lever to job creation - across all investments, not just solar - within the State; and

- (e) The initial investments described in Section 4.2 involve an estimated annual reduction of approximately 575,000 tons³⁵ of carbon dioxide - equivalent to the amount emitted by the average-sized coal power plant operating in New York today (the average-sized coal power plant is responsible for approximately 2% of total carbon emissions from in-State electricity generators), or 12,285,523 MMBtu in annual energy savings, or to removing 120,000 cars from the road each year, or planting 15 million trees per year. Projected GHG reductions, reasonably estimated from full deployment of NYGB's \$1 billion capital in clean energy investments in the State, total approximately 13.6 million tons of lifetime GHG savings. This is equivalent to approximately 8.5% of New York State's *total* carbon dioxide emissions in 2011³⁶.

Fundamental to the establishment of NYGB is that it be self-sustaining beyond its \$1 billion capitalization and that it provide greater leverage for public dollars in the deployment of clean energy in New York State, with all the corresponding benefits. Central to achievement of these objectives is NYGB's 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 client/partner project. This means that as each dollar from NYGB cycles through successive investments, additional benefits of the types identified above will be generated and be compounding. The effective rate of accumulation of these benefits will be directly tied to the weighted average holding period of the financial products that NYGB provides³⁷. Further, as the commercial markets expand into and increasingly accommodate clean energy finance needs previously supported by NYGB, the multiplier effect on NYGB's investments will continue.

The transactions discussed above and the other business activities of NYGB set out in this Petition confirm statements made in the context of the REV proceeding to the effect that "[r]ecent additions to New York's clean energy portfolio, such as the Green Bank ... have begun the process of animating markets toward large

³⁵ All tonnages are metric.

³⁶ U.S. Energy Information Administration - New York State Profile and Energy Estimates, see www.eia.gov/state/rankings/?sid=NY.

³⁷ As set out in the Initial Business Plan Filing (Section 5.5 (Capital Redeployment Cycle), page 20), the average duration of NYGB investments varies depending on the needs of each specific transaction. Generally, for the type of products that NYGB is offering, financing terms can be from less than a year to 15 - 20 years. However, capital recycling assumptions reflect expected amortization schedules for particular products as well as the likelihood of NYGB's ability to sell down or monetize its longer-term positions as the secondary market appetite develops for the classes of assets that NYGB holds. The combination of these factors means that weighted average holding periods for NYGB investments across a fully deployed capital base, and the corresponding capital redeployment cycle, could reasonably be projected to be in the range of three to five years.

scale penetration of distributed clean energy resources and a transition away from almost exclusive reliance on one-time incentive-based programs”³⁸. The authorization of the remainder of the \$1 billion in NYGB capitalization will ensure the continuation of this growing momentum in the marketplace and facilitate NYGB in realizing its ambitious goals and objectives for the benefit of all New Yorkers.

5.0 NYGB as a Key Component of the State’s Integrated Energy Strategy

5.1 State Energy Plan

As set out in the Draft State Energy Plan, a comprehensive set of initiatives is being deployed in New York State to meet the policy and strategy objectives of “providing clean, reliable and affordable power; creating jobs; and producing the other economic and environmental benefits that flow from a clean energy economy”. The Draft State Energy Plan creates a framework of separate but integrated components “to enable sustainable growth, balancing the need to harness proven technologies with the flexibility to adapt to future insights and innovation”³⁹.

As one of its key initiatives, the Draft State Energy Plan calls for “a \$1 billion New York Green Bank to unlock and mobilize private sector capital for greater investment in New York’s clean energy economy”. The Draft State Energy Plan emphasizes that even with new utility business models and a more competitive market around the customer as is being addressed by REV, one key issue that must be simultaneously addressed is how to attract the substantial quantity of private capital needed to transition to a clean energy future. As noted in the *Reforming the Energy Vision - NYS Department of Public Service Staff Report and Proposal*, Case 14-M-0101 dated April 24, 2014 (the “REV April Staff Report”), the capital investment needed to maintain New York’s energy infrastructure over the next 10 years under a business-as-usual scenario is estimated at \$30 billion⁴⁰, and that does not take into account the costs associated with the proposed transition to a clean energy economy within the State. Based on market response to date, a fully capitalized NYGB represents a powerful and necessary policy lever to mobilize significant capital for investment into New York’s clean energy sector.

5.2 Reforming the Energy Vision

A fundamental underpinning for the evolution of New York’s energy system is REV. The REV initiative is aimed at promoting more efficient use of energy, deeper penetration of renewable energy resources (e.g., wind and solar), and wider deployment of other DERs (e.g., microgrids, on-site power supplies and storage).

³⁸ Case 14-M-0101, “Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision. Developing the REV Market in New York: DPS Staff Straw Proposal on Track One Issues”, August 22, 2014 (the “REV Track One Straw Proposal”), pages 50 - 51.

³⁹Draft State Energy Plan, Volume 1, page P1.

⁴⁰ REV April Staff Report, page 6.

In commencing the REV proceeding, the Commission identified six key policy objectives (collectively, the “REV Policy Objectives”) as follows:

- (a) Enhanced customer knowledge and tools that will support effective management of their total energy bill;
- (b) Market animation and leverage of ratepayer contributions;
- (c) System-wide efficiency;
- (d) Fuel and resource diversity;
- (e) System reliability and resiliency; and
- (f) Reduction of carbon emissions.

The Commission further ordered the REV proceeding “to consider a substantial transformation of electric utility practices to improve system efficiency, empower customer choice, and encourage greater penetration of clean generation and efficiency technologies”⁴¹. In both policy and execution there is high congruence between REV and NYGB objectives and targeted outcomes. While the Draft State Energy Plan and REV form the foundation of New York’s transforming energy system and markets, the \$1 billion NYGB has been designed as the specific lever to be applied to the clean energy financing markets, working in partnership with the private sector. Throughout the REV proceeding documentation, it is acknowledged that financing of the full spectrum of clean energy opportunities in New York needed to achieve the REV objectives remains a challenge due to existing market gaps and barriers. For example, under REV the Distributed System Platform Provider is expected to, among other things, identify individual points on the system that will require system upgrades, and to allow the market to propose DER as a more cost-effective solution. The ability of the market to respond to that opportunity will be functionally limited by the availability, complexity and cost of financing. The creation and operation of the \$1 billion NYGB, consistent with its mission is an integral tool to address these issues⁴² in advance, rather than waiting until the inability to finance becomes a constraint.

NYGB uses existing and demonstrated financing tools to accelerate deployment of proven technologies, leverage private capital, and promote self-sustaining markets by alleviating financial barriers and harnessing

⁴¹ Case 14-M-0101, “Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, Order Instituting Proceeding” issued and effective April 25, 2014.

⁴² “Financing barriers can be addressed, in the first instance, by improving markets to make product offerings and payback periods more predictable. Utilities and/or third party aggregators can also be better positioned to take risk than individual customers are. Even with best efforts by regulators and utilities, the novelty of the products and markets will result in disparities between what deserves to be financed and what is available in the financial markets. The Green Bank is expected to play a crucial role in bridging these gaps and enabling customers to realize the values inherent in new markets”, REV April Staff Report, page 37.

capital markets. NYGB enables private sector financing to reach markets currently on the frontier of commercial clean energy opportunities at scale, further increasing the penetration of proven clean energy technologies in New York State. NYGB's request that its scope of eligible investments be expanded to include technologies included in the REV/CEF environmental impact statement is particularly important to NYGB's success in addressing opportunities for the clean energy technologies that are priority DERs under REV⁴³.

5.3 Clean Energy Fund

The CEF Proceeding was issued as a component of the other initiatives outlined in the Draft State Energy Plan to "ensure continuity of the State's clean energy programs, and to enhance program efficiency and leverage, while also managing their transition from an almost-exclusive reliance on ratepayer surcharges to tariff and sustainable market based clean energy activities"⁴⁴, such as those envisioned under the REV framework. Pursuant to the CEF Order, NYSERDA recently filed its Clean Energy Fund Proposal seeking a 10-year program that incorporates NYGB and will work in coordination with other State efforts to advance cleaner, more resilient and more affordable energy infrastructure.

There is complete alignment between the overarching goals of the CEF and NYGB. In particular, the following NYGB key objectives and methods of operation resonate closely with CEF themes:

- (a) The priority of clean energy outcomes (including GHG reductions) and market transformation;
- (b) The focus on upstream action to maximize downstream impact (i.e., NYGB operates in wholesale markets, which indirectly facilitates retail lending in the clean energy sector by NYGB's clients and partners);
- (c) The leveraging of public-private partnership resources and approaches to mobilize and recycle capital through successive clean energy investments within the State, and a continual emphasis on pushing outward the frontiers of commercial market participation;
- (d) NYGB being self-sustaining based on full capitalization of \$1 billion; and
- (e) Entering into investments and transactions upon commercial terms, within the overall context of transitioning to market-based financial participation in the clean energy industry in the State.

⁴³ The spectrum of DER includes solar, wind, CHP, microgrids, storage, efficiency, demand management and demand response, according to the REV April Staff Report, page 37.

⁴⁴ REV Order Commencing Proceeding, Issued and Effective May 8, 2014, page 2.

NYGB as a division of NYSERDA also represents a seamless complement to NYSERDA's ongoing activities under the CEF by focusing on accelerating clean energy deployment in the State through action in the wholesale financing markets, while NYSERDA's other main initiatives are active in various segments through the Market Development, Technology and Business Innovation, and NY-Sun programs.

5.4 Summary

A fully capitalized NYGB in the near term is both consistent with, and a necessary part of, achieving the objectives of the Draft State Energy Plan. Such objectives include:

- (a) Consistency and interdependency with REV and REV's core themes. NYGB investment activity helps build the clean energy asset base in the State allowing investments to be the product of market forces while effectively leveraging private sector participation;
- (b) Being complementary to the REV and CEF fundamental philosophy since NYGB is wholly directed towards animating the clean energy financing markets;
- (c) Pursuing economic development by expanding synergies where New York State's long term commitment and holistic approach to advancing the clean energy economy underpins private sector clients' and partners' confidence that New York is a good market in which to actively participate over a reasonable investment horizon. It offers the requisite market volumes and opportunities, commitment across energy policy and strategy initiatives and consistency of implementation; and
- (d) Having all current initiatives fitting together to animate and buttress the marketplace and so facilitate an increase in the overall opportunities and benefits for all stakeholders, where the result can be expected to be greater than the sum of the parts.

6.0 Full Capitalization

This Petition requests that the Commission issue an Order authorizing the allocation of \$781.5 million to NYGB to fully fund it at the intended \$1 billion level, with receipt of this amount by NYGB being budgeted in four annual installments of \$193.375 million each, commencing in June 2015. These amounts and their corresponding timing are reflected in the recently submitted CEF Proposal⁴⁵. Specifically, NYSERDA requests authorization to fund the 2015 allocation from available cash balances in dedicated clean energy accounts.

⁴⁵ See CEF Proposal, Table 6 and note 22 on page 44.

For the following reasons, it is fundamental to the success of NYGB, which is in turn a critical element in the success of REV, CEF and the Draft State Energy Plan, that NYGB be fully capitalized according to the requested schedule:

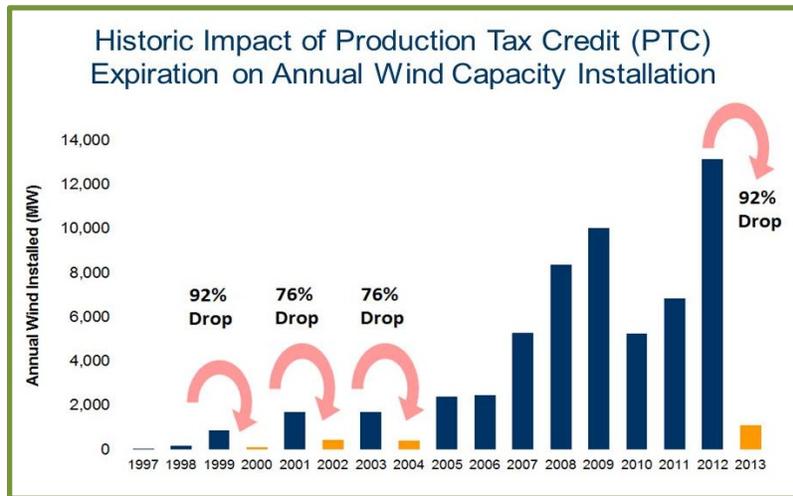
- (a) From the outset, NYGB has been billed as a \$1 billion initiative. The \$1 billion “headline” number is a critical signal to the market that NYGB is a priority initiative in the State. It is also of sufficient magnitude to get the attention of, and be taken seriously by, the private sector clients and partners with whom NYGB must engage in order to achieve its mission, as evidenced by the group of counterparties included in NYGB’s recently announced initial set of transactions;

- (b) Capitalization at \$1 billion that is fully authorized and allocated to NYGB provides both credibility and certainty in the marketplace. For NYGB to be successful there must be market confidence in NYGB’s ability to build a strong transaction pipeline based on available capital. This will ensure that private sector participants see the benefit of NYGB transactions and want to be part of that pipeline – further mobilizing capital and accelerating clean energy deployment;

- (c) Certainty around full NYGB capitalization is central to setting expectations for the market and potential counterparties as to how big the available fund is and its longevity so that people can plan their investments and capital developments accordingly. As noted earlier in this Petition, in the energy sector parties are generally dealing with both long-lead time developments and long-lived assets. What must be avoided is the chilling effect on investment in such assets that would come from NYGB’s funding being uncertain or being provided in installments or subject to approvals other than those contemplated in this Petition. An analogy to what might be expected to occur comes from the wind industry and the effects of uncertainty and sporadic extensions of the federal Production Tax Credit (“PTC”). Since 1992, the PTC has been extended mostly in one and two-year intervals and has even been allowed to expire on several occasions. According to analysis undertaken by the American Wind Energy Association (“AWEA”) this unpredictability has made it difficult for the wind industry to become fully cost-competitive. When initiatives supporting clean energy are uncertain, private sector participants usually respond by delaying or cancelling developments, including cancelling equipment and work orders, with ripple effects into the economy. Figure 7⁴⁶ illustrates the chilling effect on investment of expiration and late renewals of the PTC in the wind industry as reflected in annual wind capacity installation;

⁴⁶ Source AWEA at www.awea.org.

Figure 7. Historic Impact of PTC Expiration on Annual Wind Capacity Installation



- (d) Framing the size of investments that NYGB is able to prudently make occurs by reference to its full capitalization amount, consistent with market practice. NYGB considers various transaction sizes and participation levels but largely expects its participation in any individual transaction to fall within the range of \$5 - \$50 million or ~1% - 5% of its full \$1 billion capitalization. If NYGB has smaller capital amounts authorized and allocated from time to time, then the proportion available to each individual investment opportunity will be much smaller, likely producing markedly less interest from private sector parties to engage and impacting NYGB's ability to effect clean energy outcomes for the State at reasonable scale;
- (e) Fully capitalizing NYGB and supporting its operations at scale will accelerate the process of developing clean energy markets in the State also at scale. This in turn will facilitate the clean energy markets becoming self-sustaining (i.e., without further ratepayer support) faster, and help reduce both the hard and soft costs of subsequent clean energy projects through the establishment of economies of scale; and
- (f) Risk management is most appropriately and effectively implemented across the full size of a portfolio. NYGB is currently building a \$1 billion portfolio, and addressing diversification and other risk management issues across that asset base. Such risk management could not be done effectively and efficiently in, say, \$200 million portfolio increments where there remain questions as to the ultimate portfolio size and the timing/certainty of any incremental capital authorizations. In that case, NYGB would of necessity end up with a different overall portfolio mix and would be less able to be responsive to market demand and needs in accelerating the deployment of clean energy technologies in New York State.

7.0 Conclusion

Having established itself and become a fully operational business in the period following the Initial Capitalization Order, NYGB offers the ability to leverage private capital, to recycle funds and earnings, to open up markets on the near-frontier, and to reduce market inefficiencies that raise the cost of capital for clean energy projects. In doing so, NYGB - operating in the wholesale financial markets - is able to deliver more benefits and value per ratepayer dollar than would otherwise be accessible to ratepayers directly or with other less market-focused business models. Deployment of NYGB's full capital of \$1 billion will provide critical support for the activities that REV and CEF are designed to promote, and will deliver long-term impacts in the financial markets including reduced energy project costs, overall expansion of the clean energy financing markets through increased coverage and liquidity, and improved transparency and market confidence.

The Draft State Energy Plan and REV both hinge upon the need to have credible and effective policy levers addressing financing issues for clean energy asset transformation in the State. The \$1 billion NYGB, as part of the CEF, has been created as the financing instrument operating in the wholesale markets to facilitate such greater private sector investment. NYGB's success and credibility with private sector clients and partners, collaborators and all other stakeholders depends in part on certainty as to its funding levels and timing. As a steward of key public resources, NYGB has established detailed operational and risk management principles and procedures to underpin its allocation of funds to projects that meet its mission and investment criteria. In the relatively short period that NYGB has been open for business, market response has been robust, providing early validation of the overall approach.

Taken together, all the aspects of NYGB's business discussed in this Petition, including the benefits of its activities, offer attractive outcomes to New York State resulting from NYGB's ability to leverage public dollars to achieve the effective, efficient and scalable clean energy outcomes mandated by the Draft State Energy Plan and REV. Finalizing the full capitalization of NYGB will reinforce signals to the market as to the State's commitment to deploying proven clean energy technologies at scale throughout the State, in a new, market-based approach.

For the reasons set out in this Petition, NYSERDA respectfully requests that the Commission issue an Order:

- (a) Confirming the total capitalization of the NYGB at \$1 billion, and authorizing NYSERDA to allocate \$781.5 million to provide the balance of \$781.5 million to the NYGB, and authorizing NYSERDA to make allocations to NYGB in four equal annual installments of \$195.375 million in each of June 2015, 2016, 2017 and 2018 as follows:

- i. Funds to be made available to NYGB in June 2015 will be from available cash balances in dedicated clean energy accounts; and
 - ii. Funds to be made available to NYGB in each of June 2016, 2017 and 2018 will be from incremental collections for which authorization is requested in the CEF Proposal; and
- (b) Expanding the scope of NYGB's eligible investment types to include those technologies and approaches included in the Generic Environmental Impact Statement currently under consideration in the REV and CEF proceedings (as those may be finalized and/or amended in future), where project proponents also demonstrate a potential for increased deployment of clean energy and/or a potential for GHG reductions in the State, in addition to those technologies already authorized pursuant to the Initial Capitalization Order.

NYGB and NYSERDA appreciate the opportunity to continue their efforts toward the achievement of the State's unified, integrated energy policy goals.

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Respectfully submitted,



Peter Keane
Deputy General Counsel
NYSERDA
17 Columbia Circle
Albany, New York 12203-6399

Tel: (518) 862-1090

Email: peter.keane@nyserda.ny.gov

8.0 Glossary

“**ACORE**” means the American Council on Renewable Energy.

“**Advisory Committee**” means the advisory committee of NYGB.

“**AWEA**” means the American Wind Energy Association.

“**BofA Merrill**” means Bank of America Merrill Lynch.

“**C&I**” means the commercial and industrial sector.

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

“**CEF**” means the Clean Energy Fund, pursuant to Case 14-M-0094.

“**CEF Order**” or “**CEF Proceeding**” means the “Proceeding on Motion of the Commission to Consider a Clean Energy Fund initiated by an Order Commencing Proceeding” (Case 14-M-0094) issued and effective May 8, 2014.

“**CEF Proposal**” means the “Clean Energy Fund Proposal” submitted by NYSERDA to the Commission on September 23, 2014 pursuant to the CEF Order.

“**CHP**” means combined heat and power.

“**Citi**” means Citigroup.

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

“**DB**” means Deutsche Bank.

“**DER**” means distributed energy resources.

“**DGEIS**” means “Draft Generic Environmental Impact Statement in Case 14-M-0101 - Reforming the Energy Vision and Case 14-M-0094 - Clean Energy Fund” issued on October 24, 2014 and prepared for the Commission by Industrial Economics, Incorporated and Optimal Energy, Incorporated.

“**DOE**” means the United States Department of Energy.

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

“**Draft State Energy Plan**” means the 2014 draft of “Shaping the Future of Energy - New York State Energy Plan” issued by the New York State Energy Planning Board.

“**EE & RE Potential Study**” has the meaning given to that term in Section 4.2.

“**EEPS**” means the New York State Energy Efficiency Portfolio Standard.

“**EIC**” means Energy Improvement Corporation.

“**ESA**” means Energy Service Agreement.

“**GCP**” means GreenCity Power LLC.

“**GHG**” means greenhouse gas.

“**GWh**” means gigawatt-hour, a measure of energy production.

“**Initial Business Plan Filing**” means the “New York Green Bank Business Plan (Case 13-M-0412)” filed with the Commission on June 19, 2014 pursuant to the Initial Capitalization Order.

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

“**Investment & Risk Committee**” or “**IRC**” means NYGB’s investment and risk committee.

“**Market Study**” means “New York State Green Bank, Business Plan Development, Final Report” issued by Booz & Co. and dated September 3, 2013.

“**Metrics Plan**” has the meaning given to that term in Section 2.0.

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

“**NYISO**” means the New York Independent System Operator.

“**NYGB**” means the New York Green Bank.

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

“PACE” means Property Assessed Clean Energy.

“Petition” means this “Petition of the New York State Energy Research and Development Authority to Complete Capitalization of the New York Green Bank (Case 13-M-0412)”.

“PTC” means the federal Production Tax Credit.

“REV” means Reforming the Energy Vision, pursuant to Case 14-M-0101.

“REV Order” or “REV Proceeding” means the “Proceeding on Motion of the Commission in Regard to Reforming the Energy Vision, pursuant to an Order Instituting Proceeding” (Case 14-M-0101) issued and effective April 25, 2014.

“REV April Staff Report” has the meaning given to that term in Section 5.1.

“REV Policy Objectives” has the meaning given to that term in Section 5.2.

“REV Track One Straw Proposal” has the meaning given to that term in Section 4.3.

“RF” means Renewable Funding, LLC.

“RFP” means the “Clean Energy Financing Arrangements - Request for Proposals No. 1” published by NYGB on February 5, 2014.

“RGGI” means the Regional Greenhouse Gas Initiative.

“RPS” means the New York State Renewable Portfolio Standard.

“SBC” means System Benefits Charge.

“SDCL” means Sustainable Development Capital, LLC.

“SEQRA” means the State Environmental Quality Review Act of New York.

“Steel Sun” has the meaning given to that term in Section 4.2.

“T&MD” means the Technology and Market Development program in New York State (formerly referred to as the SBC).

“US PREF” means the U.S. Partnership for Renewable Energy Finance, a program of ACORE.

“WHEEL” means Warehouse for Energy Efficiency Loans.

Illustrative Guidelines for NYGB Eligible Investments by Technology⁴⁷

This is an *illustrative, non-prescriptive* and *non-exhaustive* list of technologies that could be included in proposed project(s).

Renewable Energy Resources⁴⁸

- Solar photovoltaics (no minimum/maximum capacity)
- Solar thermal (no minimum/maximum capacity)
- On/offshore wind (no minimum/maximum capacity)
- Fuel cells (continuous duty) - natural gas fuel or hydrogen
- Hydroelectric
 - Upgrades and/or repowering
 - New low-impact run-of-facility (30 MW or less with no new storage impoundment)
- Biomass (from eligible biomass feedstock⁴⁹)
 - Biomass direct combustion
 - Combined heat and power
 - Co-fire with existing fossil fuel (only biomass feedstock portion is eligible)
- Biothermal energy
- Biogas
 - Landfill gas (methane)
 - Sewage gas (methane)
 - Manure digestion
 - Anaerobic digestion
 - Biomass thermo-chemical gasification (syngas from municipal solid waste)
 - Biogas (from eligible biomass feedstock) combined heat and power
 - Biogas (from eligible biomass feedstock) co-fired with existing fossil fuel combustion
- Liquid biofuels - ethanol, biodiesel, methanol, bio-oil, and eligible biomass feedstock
- Tidal/ocean power

Energy Efficiency Resources

- Commercial & industrial - Comprehensive efficiency improvements to new and existing facilities that save energy, including:

⁴⁷ Reproduced from NYGB's RFP - Attachment B.

⁴⁸ This list specifically excludes nuclear, municipal solid waste combustion, and adulterated biomass or biofuels.

⁴⁹ General categories include agricultural residue, harvested wood, mill residue, pallet waste, construction and demolition debris, silvicultural waste wood, woody or herbaceous crops and urban waste wood.

- Industrial process efficiency improvements, including without limitation: data center, information technology, communications, water/wastewater, pipeline, mining/extraction, and similar end-use processes, facilities, buildings, and infrastructure
- Lighting and control systems
- Heating, ventilation and air conditioning systems
- Building envelope
- Energy management and/or control systems, including continuous commissioning
- Occupant plug load management systems
- Load Reduction
 - Thermal and electric energy storage
 - Demand response programs
- Residential - Comprehensive energy efficiency improvement projects in existing residential buildings, including:
 - Primary heating and cooling systems: Furnaces, boilers, duct sealing, pipe insulation, central air conditioners, heat pumps (including air-source and geothermal) water heaters, and programmable thermostats
 - Building envelope: Insulation, air sealing, windows and doors
 - Other required health and safety measures and related accessories
- Multifamily housing - Comprehensive improvement projects to multifamily housing facilities, including systems that affect the entire building, the common area, and/or the resident spaces and the following potential measures:
 - Lighting and control systems, including exterior, security, and safety lighting systems
 - Heating, ventilation and air conditioning systems, including boilers (hydronic and steam), furnaces, chillers, room air conditioners, supporting pumps, fans, motors and other auxiliary systems
 - Building envelope, including air sealing, weather-stripping, and insulation
 - Energy management and/or control systems, including continuous commissioning
 - Resident plug load management systems, including home energy monitors and smart strips
 - Appliances, including common area laundry, refrigerators, and dishwashers, both commercial and residential sizes
 - Advanced metering systems to support conversion of master-metered buildings to sub-metering
 - Domestic hot water systems, including generation and distribution
 - Fuel conversion projects that include upgrades to system energy efficiency
 - Water conservation improvements

Other Clean Energy Projects

- Natural gas-fired CHP

- Electric vehicle infrastructure (including charging stations)
- Fuel cells
- Anaerobic digester gas systems (farm and non-farm)
- Offshore wind