

STATE OF NEW YORK PUBLIC SERVICE COMMISSION

Petition of the New York State Energy
Research and Development Authority
to Provide Initial Capitalization for
the New York Green Bank

Case 13-M-_____

I. Introduction

The New York State Energy Research and Development Authority (“NYSERDA”) is filing this Petition with the Public Service Commission (the “Commission”) seeking an Order reallocating and repurposing \$165.6 million in uncommitted NYSERDA EEPS I and SBC III funds, uncommitted utility EEPS I funds, and NYSERDA RPS funds to provide the initial capitalization for the New York Green Bank (“NYGB” or “Green Bank”).

The Green Bank is a \$1 billion initiative proposed by Governor Andrew M. Cuomo in his 2013 State of the State address, designed to use public dollars to mobilize private sector capital to stimulate the growth of New York’s clean energy economy. A number of barriers currently constrain the clean energy financing market, including new bank capital rules that curtail lending in the space (particularly for smaller project sizes and longer tenor loans), federal policy uncertainty, insufficient data on underlying loan and technology performance, and the underdeveloped or non-existent state of publicly-traded capital markets for clean energy. These barriers limit private sector capital flows into otherwise attractive renewable energy and energy efficiency projects, creating market gaps. The Green Bank will work to eliminate the market barriers and fill these financing market gaps by partnering with private sector intermediaries through the use of various forms of financial support such as credit enhancement, warehousing and securitization, enabling a much larger supply of private capital to finance clean energy projects.

The Green Bank presents a market transformative opportunity for New York through its introduction of a self-sustaining financing model. New York State spends roughly \$1.4 billion each year to promote and advance energy efficiency and renewable energy, yet the State is still falling short of achieving its clean energy goals. As the Governor highlighted in January, nearly 80% of this annual budget is currently provided in the form of one-time subsidies and grants. This system has been effective in kindling the State’s clean energy market, but has proven unsuccessful in achieving real market scale. Using a discrete portion of this annual clean energy funding over a few years to capitalize the Green Bank will provide strong returns to ratepayers over both short and long-term horizons. The financing techniques that the Green Bank will deploy to fill market gaps are not new. They are novel to the clean energy sector, but are well tested approaches that have been used successfully by both private and public sector credit enhancers and guarantors in the past. Focusing on market gaps will allow the Green Bank and its private sector partners to earn reasonable rates of return on their investments. Prudent use of

well tested financial support mechanisms will minimize NYGB's default risk. Consequently, once fully capitalized, the Green Bank will become an independent, self-sustaining financial institution that will preserve and grow its capital base.

One of the primary advantages of the Green Bank is its ability to achieve significantly greater leverage of ratepayer funds than the one-time use subsidy/grant model. This leverage will come in several different ways. The bank's initial investments will be leveraged with private capital (which leverage levels would likely be comparable to the leverage achieved by one-time grants and incentives). But as the Green Bank's initial financing vehicles mature, the capital will be returned to the bank to be redeployed into new clean energy projects, generating another round of private capital leverage. As these cycles continue, the market will begin to achieve scale, which will reduce costs and create a virtuous system. By reducing costs and developing a track record of project and loan performance, the Green Bank will "kickstart" that sector of the market, so that it can thrive without the need for further ratepayer funding because market opportunities will prove attractive to private sector entities. This transition to a stand-alone, dependable private sector financing market produces the ultimate leverage of ratepayer dollars, at which point the Green Bank's capital base will still be available for investment in the next clean energy frontier.

The Green Bank will operate in accordance with the following guiding principles:

1. Provide a bridge to a sustainable and efficient private sector clean energy financing market.
2. Address market barriers and inefficiencies that are impeding scale of clean energy financing, and partner with private sector entities to fill financing market gaps.
3. Partner alongside, rather than compete against, financial institutions and other private sector entities, leveraging both private sector capital and these entities' institutional capabilities.
4. Earn a reasonable rate of return on investments; leave the provision of incentives to the NYSEERDA and utility-administered programs.
5. Focus on projects that are economically viable but not currently financeable.
6. Work with existing intermediaries that are making progress in the market, but whose progress is limited by lack of available financing.
7. Facilitate the development of clean energy capital markets (in particular, bond markets).
8. Enhance market confidence in clean energy investing by compiling and publishing loan payment and project performance data on all Green Bank-financed clean energy transactions.
9. Maintain the administrative flexibility needed to adapt to movements in the markets, and to focus on a constantly evolving frontier where the bank's credit enhancement can unlock new sectors of the clean energy finance market.

The Commission's leadership in advancing progressive policies and regulatory changes has helped push New York to the forefront of energy innovation. However, if the State is to deliver on its ambitious agenda to lead the nation in clean energy deployment, it must continue to innovate. The Green Bank is an important step forward. NYBG will not operate in a vacuum, but will be designed to work in concert with the best of existing NYSEERDA and utility programs

and capabilities in order to unlock a private sector-based clean energy market that can finally achieve true scale.

The Green Bank will operate as a division of NYSERDA, which will have a synergistic effect. NYSERDA will provide various “backbone” administrative and financial reporting capacities as well as technical expertise, while the Green Bank will develop and/or enhance some other core capabilities within NYSERDA like transaction structuring, risk management and credit analysis. The success of the Green Bank activities in developing reasonably priced private sector financing solutions to fill current financing gaps for clean energy will allow for carefully considered reductions in, or even possible elimination of, subsidy-based incentives in certain sectors, thus reducing long-term ratepayer costs to support clean energy. This market transformation will allow New Yorkers to transition away from their primary reliance on an exhaustible grant and incentive model in certain sectors to generate the environmental and economic benefits of clean energy deployment.

In sum, the Green Bank is a cost-effective, powerful and complementary addition to New York’s existing portfolio of clean energy support programs, which NYSERDA believes can provide unique value that current programs alone cannot deliver. The Green Bank will enable private sector financing to reach currently underserved markets, thus further increasing the penetration of proven clean energy technologies. By focusing on market gaps and following its operating principles, the Green Bank will be able to leverage multiples of private capital investment for each public dollar contributed, thereby substantially increasing the total funding available to the clean energy sector and catalyzing a transition to a large and dependable private sector financing market for New York’s clean energy projects.

The following Sections of this Petition provide further context and research to support this proposal. Section II provides additional background and introduces the independent market research report that NYSERDA commissioned for the Green Bank. Sections III to VI set forth NYSERDA’s views on the overall market opportunity, types of high potential Green Bank products, impacts of NYGB’s operations, and Green Bank governance. Section VII suggests a process for developing Green Bank metrics and evaluation plans. Section VIII describes the sources for which reallocation is requested and how those funds will be used.

II. Background

In response to the Governor’s initiative, NYSERDA retained the international consulting firm Booz & Co. (Booz) to perform a market assessment of existing financing gaps, identify potential Green Bank financial products to address those gaps, analyze the potential impacts of the deployment of Green Bank financing, and make recommendations on the organization of the Green Bank. NYSERDA staff worked closely with Booz to complete the research and analysis, contributing information and expertise with respect to New York State energy policies, programs, and markets.

NYSERDA’s work with Booz identified gaps and barriers in capital markets that the Green Bank can address to improve the penetration of energy efficiency and renewable energy. The work demonstrates that the Green Bank financing model provides key advantages, including improved

leverage and the ability to redeploy capital as the Bank's finance offerings are repaid. The market sizing estimates performed by Booz clearly support the need for and value of the proposed reallocation and repurposing of funds to the Green Bank. However, the Booz work scope did not include a thorough assessment of end user demand for financing in the various market segments. As part of the initial development of the Green Bank, NYSERDA will perform this kind of targeted market research to support the development of NYGB products.

The final report developed by Booz (the "Final Report") is attached as an Appendix to this Petition.¹ The conclusion of the Final Report is: "After conducting market interviews, concept testing workshops, industry research, and financial modeling, Booz has found that the New York Green Bank is a viable endeavor that will, when implemented consistent with the guidance provided herein, add significant value to the State's clean energy portfolio." (Final Report, Slide 2.)

NYSERDA agrees with the conclusions of the Final Report regarding the gaps and barriers in the existing market, the opportunity for the Green Bank and the benefits of deploying Green Bank financing. NYSERDA believes that the Final Report takes an appropriately conservative approach in evaluating the potential benefits of the Green Bank. With respect to the period assumed for the recycling of capital in some of the strategies, such as the warehousing products for residential and commercial / industrial loans, NYSERDA believes that the Green Bank will likely perform better than assumed in the Final Report. Given the potential for better performance for those products, the Green Bank may well have an even more significant impact on the clean energy market than implied by the Final Report.

III. Market Assessment

To assess the market for Green Bank financial products, Booz conducted approximately 90 interviews with industry leaders including financial institutions, renewable providers, energy services companies (ESCOs), end users, utilities and other stakeholders (Final Report, Slide 16). The facilitated discussions were designed to elicit subject matter expert opinions on clean energy finance opportunities, needs, and barriers. Booz also investigated the focus, structure, products and initial results of other clean energy finance organizations, both in the U.S. and abroad. In addition, Booz developed an estimate of the theoretical maximum addressable market size by market segment.

The Booz-led market interviews confirmed the numerous clean energy financing market gaps and inefficiencies that drove the State to mandate NYGB's creation. These market shortcomings represent significant opportunities for the Green Bank. Financing market gaps were confirmed across all segments, especially for smaller projects (less than \$3 million), long tenor loans (greater than 7 years), medium credit quality loans (lower FICO scores² and commercial credit ratings, where a clean energy project may have solid credit characteristics but still fall outside the narrow band of "institutional investment grade" counterparty credits where financial institutions are comfortable operating today), financing for projects eligible for tax credits, and financing for

¹ The research performed by Booz & Co. is referenced throughout this Petition.

² FICO refers to the Fair Isaac Corporation, the creators of the credit scoring system most lenders use to assess an applicant's credit risk.

viable technologies yet to achieve scale (Final Report, Slide 19). Opportunities also exist for the Green Bank to facilitate the availability of financing to projects that depend upon long-term financing, such as offshore utility-scale wind projects and other larger scale clean energy projects that traditionally operate through long-term power-purchase agreements.

Booz confirmed that key barriers in the financing of energy efficiency and renewable energy projects include undeveloped secondary markets; lack of familiarity, understanding or confidence in energy performance and payment data; a fragmented vendor landscape; and existing balance sheet debt burden. Booz's market research also documented reasons for insufficient market demand for clean energy resulting from a variety of factors including: competition for capital between clean energy and core-mission investments, insufficient understanding of value proposition for many end-use customers, and split incentives between commercial real estate and multi-family landlords and tenants (Final Report, Slide 18).

Many market participants identified opportunities for the Green Bank to work with the private markets to facilitate the flow of capital through risk mitigation strategies and aggregation. Capital costs rise in relation to the perceived risk; feedback from market participants suggests that banks include a risk premium in many clean energy transactions because of misperceptions as to the level of risk. In these cases, the Green Bank can facilitate private sector participation by providing some form of credit enhancement (e.g., loan loss reserves, guarantees or subordinated debt investments) for the underlying transactions. For instance, when considering a loan for a residential photovoltaic (PV) system, traditional financing entities typically compare monthly income with monthly debt payments and other expenditures. Financiers include the new monthly loan payment as debt, but do not typically reduce the expected monthly expenditures by the amount of savings that will result from avoided utility energy purchases. In this situation, credit enhancement from the Green Bank could induce private lenders to revise their underwriting process to include the expected energy savings, thereby qualifying a significantly larger pool of potential borrowers for solar PV financing.

In addition, the need for standardization and improved data were recurring themes. Transaction costs are high for many clean energy project types, particularly for those that have yet to achieve scale compared to larger and more commonly deployed renewable projects (utility scale on-shore wind, for example). The market feedback indicates that there are opportunities for the Green Bank to reduce transaction costs by standardizing documents and procedures, and to reduce capital costs by gathering and making data available on project performance, return on investment and payment performance (Final Report, Slide 21). Standardizing contracts and procedures will also play an important role in developing capital markets (e.g., bond markets) for clean energy assets. The lack of robust bond or secondary investor markets further constrains clean energy capital and drives up financing costs.

Taken together, the market barriers and gaps limit financing choices available to customers, which is particularly challenging for the clean energy sector. Given that energy is an operating expense, it is a heavy burden for some customers to increase capital expenditures or take on more debt to finance clean energy solutions. For those customers, financing products that offer energy-as-a-service would better meet their needs. The residential solar lease is a structure that effectively provides this type of solution. Unfortunately, the solar lease is the exception rather

than the rule. If a customer wants a solar hot water system or a ground source heat pump, more likely than not the customer would need take on a home equity loan or pay cash. The Green Bank intends to work with financing parties to offer leasing or energy-as-a-service financing products. Other illustrative market-based strategies to address the barriers and gaps uncovered in the market assessment are discussed further in Section IV.

In addition to market interviews, the Booz team investigated the mission, organization, funding, track record, best practices and challenges of several clean energy finance banks around the world: New York City Energy Efficiency Corporation (NYCEEC – NY), Clean Energy Finance and Investment Authority (CEFIA – CT), Keystone Home Energy Loan Program and Warehouse for Energy Efficiency Loans (HELP/WHEEL – PA), Green Energy Market Securitization (GEMS – HI), Kreditanstalt für Wiederaufbau (KfW, Germany), and the Green Investment Bank (Great Britain). The various clean energy banks are capitalized at between \$45 million (NYCEEC) and \$98 billion (KfW) and have wide ranging scopes (Final Report, Slides 11 and 12). Most of the U.S. clean energy finance banks have a limited track record due to their short operating histories. Nevertheless, the Booz team was able to identify best operating practices that will be important for the Green Bank to consider as it transitions from capitalization to operation. Best practices include: establish strong partnerships, maintain flexibility, strive to achieve scale attractive to private sector partners, and launch initial products as soon as possible to maintain momentum (Final Report, Slide 12).

NYSERDA believes that the Green Bank will have a steeper trajectory than CEFIA or NYCEEC for several reasons. First, we will be able to take advantage of our solid working relationships with CEFIA, NYCEEC, WHEEL and other clean energy finance entities to learn from the lessons of those organizations. Second, we believe the Green Bank's strategy of focusing on market gaps and working on a wholesale basis in partnership with private sector intermediaries who are already making progress is conducive to scale. But perhaps the most important reason is size — offering small scale credit enhancements (of a few million dollars) is generally not enough to compel a financial institution to focus its resources on a new opportunity. But with an eventual capitalization of \$1 billion, the Green Bank will be able to work on a scale that can attract the immediate attention of commercial banks and other financial institutions.

The Booz team also developed a directional estimate of the theoretical maximum total potential for major clean energy investments³ in New York State over the next 10 years. The total addressable potential for clean energy is estimated at approximately \$85 billion, with 65% of the addressable market in energy efficiency and the remainder in clean energy generation (Final Report, Slide 15). The estimate does not attempt to identify a technical potential or market-achievable potential for energy efficiency or renewable energy, but rather seeks to identify a theoretical maximum market potential in order to provide context for the current Green Bank capitalization plan.⁴

³ Potential for utility scale generation, fuel cells, charging stations, solar hot water systems, off-shore wind and other emerging clean energy technologies is excluded from the Booz market sizing exercise.

⁴ The directional market potential developed by Booz was an attempt to quantify the upper bound of investment potential and generally assumes that all potential investments are made.

The results of the Booz-led market research confirm that there are clear and addressable opportunities to facilitate the availability of private clean energy financing. Booz has developed a directional estimate of the potential addressable investment of \$85 billion over the next ten years. Due to initial private sector leverage, and the recycling of the Green Bank's capital, the Booz report projects that an initial \$1 billion NYGB capitalization will lead to as much as \$8 billion of additional private sector investment in clean energy projects over the next ten years (Final Report, Slide 7), which would represent approximately 10% of the \$85 billion potential addressable market. However, as outlined in Section II, we believe that the Booz report likely understates the potential Green Bank leverage and return figures, given the conservative assumptions used to model a hypothetical initial Green Bank portfolio. Furthermore, the eventual transition to a sustainable private sector clean energy financing market will allow the market to scale further toward the maximum addressable potential over the years to come.

As noted above, Booz identified and characterized other clean energy finance banks in operation in the U.S. and abroad. Both the funding levels of other clean energy finance banks and the maximum addressable clean energy investment support a minimum \$1 billion Green Bank capitalization in New York, starting with the \$165 Million requested in this Petition.

IV. Green Bank Solutions

The Green Bank will address the financing gaps and barriers identified in Booz's market assessment primarily through four categories of capital solutions: credit enhancements; warehousing; structured products; and direct lending or investing (Final Report, Slides 20-21).

The Booz report identified several specific potential product offerings within these categories of solutions (Final Report, Slides 20-21). However, it is critical that the Green Bank maintain flexibility in structuring its initial suite of products and adapting to evolving market conditions and demands, resulting in a portfolio of specific product offerings that will be able to change over time. The Bank will pursue a portfolio approach to investment, expecting to support some innovation while also aiming for more immediate impact by supporting mature clean energy technologies. While the bank will primarily support the technology deployment—not development—business, the Green Bank's purview should be broad enough to include the enabling technologies and system-based solutions that will be integral to the transition to a competitive, customer-centric energy services market, e.g., optimizing software, storage (large and small), and grid based solutions that can be deployed, like voltage control devices. The Bank's reach should also include geographic and demographic diversity to support projects benefitting all New Yorkers.

The four Green Bank investment categories are explained below:

1. Credit Enhancements – Credit enhancement techniques include loan loss reserves or guarantees provided to private sector lenders, and similar strategies funded by a capital reserve dedicated to absorb a discrete portion of losses incurred in connection with project specific loans or leases. These products assist private sector lenders by taking on a portion of the default risk associated with clean energy loans or leases in return for a risk-appropriate fee. Credit enhancements have been successfully deployed by entities

like NYCEEC and CEFIA to expand the market where there is demand for financing but the supply is lacking due to market inefficiencies such as a lack of or unfamiliarity with reliable performance data from the specific EE/RE asset class, or insufficient experience with project and loan performance. One potential credit enhancement deployment solution identified by Booz would accelerate expansion of the residential market for clean energy by providing credit enhancement across a pool of clean energy loans or leases, enabling the pool to include high quality but underserved credit customers whose FICO scores are just below those currently served in the market. A similar credit enhancement strategy could work in the commercial sector, expanding market access for economic clean energy projects for the next-most creditworthy tier of commercial end users. Other forms of credit enhancements include subordinated debt investments and loan loss insurance products. The Green Bank will adapt its offerings to observed market demand with strategic partners.

2. Warehousing – Warehousing is a direct provision of lending with the intention of aggregating loans for placement/sale in the secondary markets (e.g., securitization). Under a warehousing strategy, NYGB would work through private sector origination partners to provide funds to borrowers for clean energy projects and replenish those funds by accessing the capital markets through a bundled, portfolio offering once enough financings are issued to attract secondary market interest. NYGB (potentially in partnership with one or more private financial institutions) could purchase small commercial and industrial energy efficiency loans from intermediaries, for example, and warehouse those loans until the pool attained a volume that is of interest to the secondary capital markets. The replenished funds would then be available for the Green Bank to redeploy into a new pool of clean energy projects.

To address the long loan tenors, the Bank could execute a debt securitization, through which investors interested in holding long term debt, such as pension funds, could invest in longer term securities, while those banks preferring shorter loan terms would be able to exit their investments earlier. NYGB would then use the securitization proceeds to invest in more projects. NYSERDA's recent bond issuance of \$24.3 million to refinance residential energy efficiency loans issued through the Green Jobs-Green New York program provides evidence of the potential to finance and refinance energy efficiency loans and financing arrangements through secondary markets.

3. Direct Lending/Investing – Direct lending or investing refers to lending to consumers or businesses, direct investments into projects through debt and/or equity, and similar arrangements. Direct lending to consumers or businesses would typically be undertaken through private sector origination partners. An example of a direct lending strategy would be providing subordinated debt for a solar loan fund. In this product offering, the Green Bank would provide a subordinated debt tranche into a solar fund, alongside senior debt holders, and assume the position of first loss (or second loss, after any required sponsor equity) in the event of a default from a financing in the fund. This offering would attract senior debt investors into new markets, which lack the long-term payment performance record that such investors typically look for. A similar direct lending strategy would involve Green Bank loans to fund Combined Heat and Power (CHP) projects, fuel cells, biomass, anaerobic digesters, or similar project types that have

difficulty attracting financing due to competition with mainstream clean energy projects such as large scale onshore wind.

4. Structured Products - More complex structured investments may have the NYGB serve multiple functions in a single, tailored financial arrangement. For example, a Green Bank investment combining a subordinated debt component, an equity investment and a loan loss reserve component may be combined to create a tax equity fund to attract senior debt and tax equity investments by one or more private sector entities. In the case of small wind projects, the Green Bank could provide equity as well as subordinated debt into a fund to attract additional and necessary funding from tax equity and debt providers.

In its composition of a high impact portfolio, the Green Bank will largely focus on scalable mature technologies such as energy efficiency and renewable energy projects, but may also offer direct financing or facilitate access to financing, using the product offerings above, for deployable, commercially accepted technologies that have yet to achieve broad acceptance in the finance markets. Examples include but are not limited to: electric vehicle infrastructure (including charging stations), biomass, anaerobic digester gas systems (farm and non-farm), offshore wind, and fuel cells.

Beyond specific product offerings, the Green Bank will build core competencies around informational solutions and will seek to leverage successful momentum in the market by building strategic partnerships. Informational solutions include tracking and analyzing not only energy project performance data, but also financing/loan payment and performance data for all projects supported by Green Bank financial products. The Green Bank will aid in the establishment of loan conformity standards and work with NYSERDA to evolve its system for the evaluation and certification of contractors and lenders.

In concert with these informational solutions, strategic partnerships with similar organizations and entities will play a critical role in how the Green Bank goes to market. By engaging with entities that have established relationships with capital providers, energy service companies, and end use customers, the Green Bank can achieve efficiencies when entering the market and take advantage of latent demand.

V. Benefits of the Green Bank

The primary benefits that the Green Bank offers are the ability to recycle funds and earnings, to leverage additional private capital, tap into underserved markets, and reduce or adjust market imperfections in the cost of capital for clean energy projects. Taken together, these benefits offer attractive and unique policy outcomes to the State and ultimately result in an expansion of the total funding available for clean energy.

Unlike incentive payments, when ratepayer funds are used for the financing products proposed for the Green Bank, those funds are not permanently expended. As illustrated on slide 6 of the Booz report, Green Bank capital deployment solutions operate in a manner to preserve, recycle, and eventually grow the Green Bank's capital base. For instance, the initial funds and accrued earnings from a loan loss reserve will be redeployed once the loan loss reserve commitment expires, thus attracting multiples of private capital while at the same time preserving the bank's

initial capital investment. By carefully considering various project and counterparty risks and pricing its financing products accordingly, the Green Bank will be in a position to execute its mission while preserving and growing its ratepayer-funded capital base.⁵ The funds invested by the Green Bank will be returned to the Green Bank and will be available to deploy again to achieve additional energy and environmental benefits. This recycling effect permits New York to maintain a minimum level of financial commitment to the clean energy economy (i.e., the Green Bank's \$1 billion capitalization), without having to go back to the ratepayers repeatedly for one-time expendable grant or incentive funding. As such, the Green Bank is expected to achieve increased leverage in comparison to incentive-based programs simply as a result of the recycling and preservation of capital.

Slide 7 of the Final Report shows the beneficial effects of increased leverage when benchmarked to current grant and incentive offerings.⁶ The increased leverage is a result of the features of the financial products offered by the Green Bank. Using Booz's assumptions, over a 5-year period, the Green Bank has the potential to increase leverage by more than 37% as compared to the current incentive programs, and over a 20 year period the Green Bank has the potential to leverage more than 3.5 times the total investment of the current incentive programs. However, the Green Bank leverage calculations in these analyses do not account for the final return of capital in the final round of capital recycling. Green Bank products, coupled with carefully considered and phased reductions in, or even possible elimination of, incentives in certain sectors, will increase leverage ratios of ratepayer funds significantly across the board. However, increased leverage in itself ignores the fact that, as explained above, the Green Bank strategies will be deployed in a manner that allows for the preservation and growth of its capital. This means that the funds under consideration in this petition will remain under the purview of the State indefinitely.

As indicated on Slide 8 of the Final Report, by increasing overall market activity, targeting market inefficiencies, and creating greater transparency around risk and comfort among private investors, the Green Bank can reduce the overall cost of capital. The effect of the Green Bank on reducing the cost of capital can also enable the potential reduction or even the possible elimination of incentives in some sectors over time (Slides 64 and 65 of the Final Report demonstrate the positive leverage effects of reduced incentives).

The Green Bank will also enable financing for underserved customer segments, thus expanding the market for clean energy and achieving greater market penetration levels. The Booz market research revealed that finance entities are currently highly selective in their energy related activities and only deploy capital for the highest credit quality customers. Green Bank credit enhancement products will encourage the extension of financing to the next level of credit quality in the market and open up these underserved customer segments. In the area of residential solar for example, the Final Report concludes that a credit enhancement can effectively introduce solar to more than 880,000 households in New York (those with FICO scores between 625 and 675). In the case of commercial end use efficiency customers, the Final

⁵ The actual expenses of the Green Bank will result from administrative and operating costs, together with any losses on loans or credit enhancements made by or through the Green Bank. These expenses will be taken into account as the Green Bank develops and prices its products.

⁶ Leverage is the total project investment divided by the amount of ratepayer funding included in that investment.

Report finds that broadening access to financing to high quality, but underserved credit customers, can introduce up to an additional 8% of the businesses in the state to clean energy financing (Final Report, Slide 9.)

A primary benefit of NYGB will be its ability to mobilize both the capital and institutional capabilities of private market players. Working through intermediaries, the Green Bank will be able to build upon existing and extensive private lending platforms. This will help the Green Bank scale up faster than if developing its own origination, disbursement, and servicing infrastructure.

The Green Bank will be designed to earn a sufficient rate of return on its investments such that once its full capitalization has been deployed, it will become self-sustaining. The research performed by Booz shows that after considering product expenses and potential losses on financings, positive annual rates of return on the identified suite of products can be achieved (Final Report, Slide 27). (When benchmarked against the rates of return earned by NYCEEC on its initial suite of products, the projected rates of return set forth in the Booz report for the Green Bank's products may be overly conservative.) Through its increased leverage, market transformation effects and ability to stand as a self-sustaining – and potentially growing – source of capital for clean energy, the Green Bank will, over time, increase the amount of private funding applied to clean energy, while at the same time reducing the need for ratepayer support of clean energy programs. As a result, all of the public benefits of clean energy activities will increase proportionately, including all of the energy, environmental and economic benefits associated with implementation of energy efficiency and renewable energy in New York State.

VI. Governance

Initially, the Green Bank will be formed as a division of NYSERDA. As part of NYSERDA, the Green Bank will be governed by NYSERDA's Board as established in Public Authorities Law, Section 1852, and will be subject to all applicable requirements of the Public Authorities Law, including annual reporting requirements, budget reporting requirements, and independent auditing requirements. To assure control and oversight of finances, the Green Bank will operate within NYSERDA's system of internal controls, including policies and procedures, which will be reviewed and modified if necessary to ensure that the Green Bank's business needs can be met and that it can operate effectively with strategic partners and market participants. The Public Authorities Review Act of 2009 created an independent Authorities Budget Office which was given the power to review the operations, practices and reports of public authorities.

The Green Bank will be led by an Executive Director who will report to NYSERDA's President and CEO. The Bank's location within NYSERDA will create synergy for both organizations. The Green Bank will have access to NYSERDA's technical, financial/accounting, contracting, human resources, communications, marketing, IT and legal staff and any other resources that NYSERDA currently provides to its program areas. These resources will help the Green Bank scale up quickly and efficiently.

In addition, the Green Bank's activities will be coordinated with other NYSERDA programs, to leverage technology and market insights and relationships. NYSERDA believes that

NYSERDA's other programmatic efforts will help identify opportunities and drive demand for Green Bank-supported private sector capital, while the Green Bank's focus on the financing market frontier will help sharpen NYSERDA's effort to achieve market response in its other programs.

As indicated in the Final Report, the Green Bank must be governed by policies that are sufficiently flexible and adaptive to allow the Bank to:

- Balance the diversity of organization objectives
- Act effectively as a participant in the clean energy finance market, and respond to the market as it reacts to the Green Bank's offerings
- Work with and through the private sector and not crowd it out

NYSERDA will establish an Advisory Committee, which will include experts in the field, to review the plans for and operations of the Green Bank and provide advice and counsel on best practices for the activities of the Green Bank. The Advisory Committee may also make recommendations to the NYSERDA Board regarding various Green Bank matters.

NYSERDA will investigate legal and operational issues associated with creating a subsidiary or an affiliated corporation to house the Green Bank. In the event that NYSERDA determines that such a course of action is feasible and should be implemented, NYSERDA will pursue any necessary legislative or administrative action.

VII. Metrics and Evaluation

As the Green Bank is launched and its strategies are implemented, performance metrics monitoring and evaluation will provide critical information to help maximize the effectiveness of the product offerings, document the technical and financial performance of supported projects to help reduce the perceived risk of clean energy financing, and capitalize on the best market opportunities to support the ongoing transition to a more robust and sustainable clean energy financing market.

NYSERDA will work with the Department of Public Service ("DPS") to develop an evaluation plan that supports the transparency and accountability of the Green Bank, while also ensuring that the data collection and evaluation efforts do not impede achievement of Green Bank objectives. The metrics and overall evaluation approach will provide useful and meaningful information for a dynamic market-based program without overburdening Green Bank implementation or creating barriers to participation.

In developing the metrics and evaluation plan, NYSERDA will leverage existing evaluation efforts where Green Bank financings involve projects participating in incentive programs, and NYSERDA will continue to reference best practices employed by other publicly funded Green Banks. NYSERDA will develop an approach consistent with the Governor's "NYPerforms" initiative, which establishes a performance measurement system for all State Agencies and Public Authorities.

NYSERDA will prepare an Annual Green Bank Report that presents results on key performance indicators. Three categories of metrics/key performance indicators reflect Green Bank activities and objectives: (1) energy, environmental and economic; (2) financial; and (3) market transformation. These potential metrics and evaluation approaches are discussed below.

Energy, Environmental and Economic Impact Metrics

Selected core metrics in this area may include: energy efficiency savings, primary energy savings from CHP systems, and clean energy generation and capacity. Other metrics that could potentially be estimated or analyzed based on the core metrics include emission reductions and jobs created/retained. To collect necessary energy information, NYSERDA anticipates working with participating financial institutions, strategic partners and service providers. Existing metrics data collection efforts will be leveraged to minimize overlapping data requirements.

Financial Performance Metrics

Financial performance metrics will be reported for the Green Bank as an organization and will also be gathered and analyzed for each financial institution, strategic partner, and Green Bank financial product offered; data may be published on a portfolio basis rather than by individual institution. Specific metrics may include: capital committed and invested, return on investment, leverage ratio and capital redeployment cycle time. Participating financial institutions and other strategic partners could be required to self report any necessary financial performance metrics and related information to the Green Bank. Information provided by financial institutions and strategic partners may be subject to audit.

Market Transformation Metrics

Market transformation metrics can help measure the effectiveness of strategies to foster market interest in utilizing financing products across the spectrum of supported technologies, as well as increase confidence among the financial community to expand product offerings for financing clean energy. Potential Green Bank market transformation metrics include: number and type of financial institutions and strategic partners engaged; number and type of Green Bank-financed projects; Green Bank dollars and total dollars committed and invested; level of awareness, knowledge and confidence of financial institutions in clean energy investments; and energy service provider level of awareness and promotion of Green Bank financing offerings and strategic partnerships. These metrics can either be tracked by NYSERDA in conjunction with the participating financial institutions and strategic partners or assessed through market evaluation.

Evaluation

The overarching goals of the Green Bank evaluation will be to:

- Assess the overall effectiveness of the Green Bank at meeting its near and long term goals, including increasing investor confidence and achieving market transformation in the clean energy finance industry;

- Examine the relative contribution and effectiveness of the different investment strategies employed toward meeting the Green Bank goals;
- Provide information and recommendations to help enhance organizational, program and product efficiency and effectiveness; and
- Assess and verify the energy, environmental and economic impacts.

The large majority of evaluation activities will be conducted by expert, third party contractors to lend independence and reduce the burden on Green Bank implementation. Potential evaluation areas are described below:

- Process evaluation can help with early development of the Green Bank and can lead to improvements that reduce barriers and increase program uptake and effectiveness as offerings evolve.
- Market evaluation can help develop better understanding of current and emerging markets, including establishing baseline levels for certain key indicators, tracking changes in markets over time, and informing decisions about product offerings.
- Impact evaluation can help validate the overall Green Bank energy, environmental and economic impacts and will utilize the already established, robust impact evaluation of NYSERDA programs where possible. This impact evaluation would be used to refine future Green Bank offerings.

As is noted above, NYSERDA will further develop the Green Bank evaluation plans in conjunction with DPS. The approach and funding level ultimately developed at this early stage may need to be revisited as more experience is gained in implementing the Green Bank. In refining and implementing the metrics and evaluation plans, NYSERDA will balance the need for appropriate oversight of public funds with the need to remain flexible and avoid overburdening or impeding Green Bank operations and participation.

VIII. Funding

This Petition seeks an Order of the Commission reallocating and repurposing \$165.6 million in uncommitted NYSERDA EEPS I⁷ and SBC III⁸ funds; uncommitted utility EEPS I funds; and NYSERDA RPS funds to the NYS Green Bank. The funding reallocation/repurposing is summarized in the following table.

⁷ These NYSERDA uncommitted EEPS I funds and the uncommitted utility EEPS I funds were collected prior to January 1, 2012, but not expended prior to that date. In the Commission's Order Authorizing Efficiency Programs, Revising Incentive Mechanism, and Establishing a Surcharge Schedule (Cases 07-M-0548 and 07-G-0141), issued and effective October 25, 2011, at page 24, the Commission indicated that it was not, at that time, authorizing the expenditure of such funds, but that a program administrator could file a petition for authorization for a particular program. This is such a petition.

⁸ Similarly, in the Commission's Order Continuing the System Benefits Charge (Case 10-M-0457), issued and effective October 24, 2011, at page 19-20, the Commission indicated that the disposition of uncommitted SBC III funds would be determined by the Commission.

Source of Funds	Amount Requested for Reallocation / Repurposing (Million)
Uncommitted NYSERDA EEPS I funds	\$3.5
Uncommitted NYSERDA SBC III funds	\$22.1
Uncommitted utility EEPS I funds	\$90.0
NYSERDA RPS funds	\$50.0
Total	\$165.6

NYSERDA proposes to use the \$165.6 million to fund the initial operations of the Green Bank. These funds will be combined with \$44.7 million in funds obtained through the sale of carbon dioxide allowances under the Regional Greenhouse Gas Initiative (RGGI) from the March, June, and September 2013 auctions, and may also include allocations from future RGGI auctions. NYSERDA will combine these sources to provide initial Green Bank capitalization in the amount of at least \$210.3 million for the rollout of a series of initial financing products.⁹ NYSERDA requests that the Green Bank be permitted to utilize its entire capitalization to develop and deploy finance offerings that serve the entire state in a fuel-neutral manner.

In the context of the Commission's evaluation of the progress of the EEPS and RPS programs, as a part of the 2013 reviews, and the broader assessment of New York's future clean energy programs, NYSERDA will request additional funds for the Green Bank through a subsequent PSC petition, likely to be combined with additional RGGI funds, to meet the Governor's \$1 billion capitalization goal for the Green Bank.

For this startup phase, NYSERDA is requesting authorization to use up to \$13.248 million (8% of the \$165.6 million in funding requested) for internal and contracted administrative costs, and to pay any cost recovery fee under section 2975 of the Public Authorities Law that is allocable to the actual expenditure of any portion of the \$165.6 million. This funding will cover administrative expenses during the startup phase of the Green Bank and its initial costs of operation. Ultimately, the Green Bank will collect fees and investment earnings that are expected to be sufficient to cover its ongoing operational costs.

NYSERDA also requests authority to use up to \$4 million for conducting program evaluation activities, as described in Section VII.

The remaining \$148.352 million will be used for the programmatic functions of the Green Bank, including, but not limited to, development and funding of financial products, consultant support, and Green Bank outreach and marketing.

⁹ Depending on results of future auctions, NYSERDA will likely add more RGGI auction proceeds.

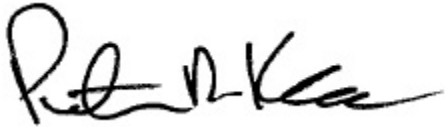
NYSERDA anticipates that the Green Bank will begin offering its initial suite of financial products in the first quarter of 2014.

IX. Conclusion

For the reasons set forth above, NYSERDA respectfully requests that the Commission issue an Order reallocating and repurposing \$165.6 million in uncommitted NYSERDA EEPS I and SBC III funds, uncommitted utility EEPS I funds, and NYSERDA RPS funds to provide initial capitalization for the New York Green Bank, as indicated in section VIII of this Petition.

September 9, 2013

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Peter Keane". The signature is fluid and cursive, with the first name "Peter" and last name "Keane" clearly distinguishable.

Peter Keane
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