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NY Green Bank
Market Transformation Study

Bank of America Merrill Lynch Case Study

March 2019

Albany, New York

Prepared by

DNV·GL

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TABLE OF CONTENTS

1 NY GREEN BANK – AGGREGATION OF ENERGY EFFICIENCY INVESTMENTS IN THE MUNICIPAL, UNIVERSITY, SCHOOL, AND HOSPITAL (MUSH) MARKET

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

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

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

NYGB focuses on opportunities that create attractive precedents, standardized practices, and roadmaps that capital providers can readily replicate and scale. As funders "crowd in" to a particular area within the sustainable infrastructure landscape, NYGB moves on to other areas that have received less investor interest.

① NY Green Bank
A Division of NYSERDA

- Initiated Operations: 2014
- First Financing Transaction: 2015
- Financings through 2018: 44
- Number of Counterparties: 55
- Capital Committed: $637.6 million
- Cost of Projects Financed: $1.51 – $1.75 billion

② Bank of America Merrill Lynch

ENABLING DEEPER ENERGY RETROFITS & EXPANDING OPPORTUNITES FOR SMALL AND MID-SIZED PROJECTS

2016: NYGB purchases interests in leases originated by BofA Merrill used to finance energy efficiency projects for a large nursing facility and a public school district.

Each transaction creates two payment schedules: one short-term that is retained by a private investor; the other much longer and sold to NYGB.

This arrangement enables the lessee to match lease payments to the expected timing of energy cost savings and expand the range of energy efficiency improvements installed.

For the nursing home project, which includes a cogeneration system, NYGB's $12.2 million participation enabled BofA Merrill to extend the lease term to 10 years.

For the school project, NYGB purchased an 18-year, $8.9 million interest. The remaining 10-year payment schedule was purchased by a subsidiary of Signature Bank.

Bank of America Merrill Lynch Case Study. DNV GL developed this case study of NYGB's participation in two financings of energy efficiency projects in institutional and government facilities as one aspect of the first independent assessment of NYGB impacts, conducted as part of customary and ongoing evaluations by NYSERDA with respect to its programs and divisions. The purpose of this and other case studies is to provide a detailed narrative of NYGB's involvement in individual transactions and to identify the impact of those transactions on the State's clean energy sector and participants more broadly, including project developers and the financiers that support their activities.

This case study presents NYGB's activities in a co-financing arrangement with Bank of America Merrill Lynch ("**BofA Merrill**"). Under this arrangement, NYGB purchases an interest in a lease originated by BofA Merrill's leasing unit to finance energy efficiency improvements in government and non-profit facilities.[1] The transaction enables BofA Merrill to extend the term of the lease beyond limits set by its internal policies. The extended repayment period reduces annual lease repayments and aligns the repayment schedule with the anticipated stream of energy savings. The lower annual costs and added flexibility enable the facility owners to undertake deeper and more extensive energy efficiency retrofits than would be possible in the absence of NYGB's participation.

NYGB and BofA Merrill initiated the co-financing arrangement in early 2016 and have closed two transactions using the structure. The first (May 2016) financed $14.0 million in energy efficiency improvements, including the installation of a combined heat and power ("**CHP**") system, for the Hebrew Home at Riverdale ("**HHAR**"). The second (October 2016, including NYGB and a subsidiary of Signature Bank) financed $12.6 million in energy efficiency improvements, including lighting and HVAC system retrofits, for nine schools and one administrative building in the Northport-East Northport Union Free School District.

Representatives of the lessees and BofA Merrill report that NYGB's participation in these transactions had the intended effect of enabling the facilities to complete more comprehensive energy efficiency improvements. The improvements will lead to annual energy savings of $2.7 million for facilities covered by the two transactions and will result in reductions of 2,168 – 2,574 metric tons in annual greenhouse gas emissions.

Market Effects Assessment. NYGB's arrangement and relationship with BofA Merrill is still in place. NYGB assesses new project opportunities on a case-by-case basis.

Municipal leases of the type used in these transactions are among the most common arrangements used to finance energy efficiency improvements in the municipal, university school and hospital ("**MUSH**") markets.[2] DNV GL searched for other examples of the use of co-financing to extend the range of projects that can be financed by municipal leases, but found no examples of similar transactions. As this transaction structure represents a recent financing innovation with a short performance history, DNV GL concludes that it is too early to determine the structure's impact on financing energy efficiency projects in the MUSH market.

[1] In this case, interest in the lease entitles NYGB to a portion of the lease payments made to BofA Merrill's leasing unit, Banc of America Public Capital Corp (BAPCC).

[2] Ranjit Bharvirkar, Charles Goldman, Donald Gilligan, Terry E. Singer, David Birr, Patricia Donahue, and Scott Serota, *Performance Contracting and Energy Efficiency in the State Government Market.* (Berkeley, CA: Lawrence Berkeley National Laboratory, 2008).

2 CASE STUDY: BOFA MERRILL LEASE FINANCING OF ENERGY EFFICIENCY PROJECTS IN THE MUSH MARKET

2.1 Case Study 1: Hebrew Home at Riverdale

Owner/Developer. HHAR was established over 100 years ago and is part of RiverSpring Health, a national company whose mission is to protect the health and welfare of older adults. RiverSpring Health offers a range of care and housing solutions including managed long-term care, assisted living, senior housing, and specialized services such as memory care. It serves over 13,000 residents across the U.S.

Table 1: Case Summary – Hebrew Home at Riverdale

Developer/Owner: Hebrew Home at Riverdale (Riverdale, NY)	**Financial Product:** Asset Loan and Investment
Financial Institution: Bank of America Merrill Lynch and Dormitory Authority of the State of New York	**Product Sub-Type:** Senior Debt **Amount Financed:** $12.2 million
Projects Financed: Installation of combined heat and power (CHP) system **Total Project Costs:** $14.0 million	**NY Green Bank Participation:** NYGB participated in funding a tax-exempt equipment lease. The project is part of a strategy to aggregate similar energy efficiency projects into a portfolio to encourage private sector financing.
Estimated annual energy savings and other benefits: Annual Cost Savings: $1.6 million Annual Electric Savings: 293 – 358 MWh Annual Emissions Reduced: 64.0 – 78.0 Metric Tons	**Market Barriers Addressed:** Mismatch of loan repayment schedule to timing of realized benefits Limited availability of private capital for small to mid-size transactions
Impact of NY Green Bank Participation *"NY Green Bank staff were easy to work with, transparent, fully engaged, creating a win/win situation in a successful public/private partnership. Without the participation of NY Green Bank, this project could not happen."* Luz Liebeskind, HHAR Chief Financial Officer	

Project Description. NYGB, in partnership with BofA Merrill, provided equipment leasing services to HHAR for the purchase and installation of a CHP system to mitigate the effects of

electricity outages and to reduce energy use and costs. The full project scope included the CHP system as well as HVAC and electric system upgrades.

Project Financing. The financial transaction was structured as follows.

- Banc of America Public Capital Corp ("**BAPCC**"), BofA Merrill's leasing unit leased the equipment to the Dormitory Authority of the State of New York ("**DASNY**"), a quasi-public agency with the authority to issue debt with tax-exempt interest. DASNY subleased the equipment through its Tax-Exempt Equipment Leasing Program ("**TELP**") to HHAR, a not-for-profit organization. Under this arrangement, HHAR borrowed at tax-exempt rates and was obligated to make lease payments directly to BAPCC.
- NYGB's participation in the transaction enabled BAPCC to extend the term of the lease beyond the term called for by BAPCC's guidelines.
- BAPCC serves as the administrator of the lease. It managed escrow account disbursements for construction, collects payment from HHAR, and disburses the payments due to NYGB.

The project also received cash incentives from NYSERDA through its Combined Heat and Power Performance Program. The incentives were paid out in installments corresponding to stages of project completion and energy savings verification.

Impact of NYGB Participation. The following section describing the impact of NYGB participation on HHAR's project is based on in-depth interviews with Luz Liebeskind, Chief Financial Officer and Jon Kole, Vice President of RiverSpring Health.

Project Financing Challenges. According to Ms. Liebeskind, HHAR faced two significant challenges surrounding the financing of the CHP project: availability of capital and scale. Like many non-profits, HHAR did not have the capital resources to undertake the CHP project. A decade earlier, HHAR secured a tax-exempt lease through DASNY for non-energy related building improvements and began exploring the option of implementing CHP. In 2010, HHAR reached out to its mortgage holder and one other local bank regarding a tax-exempt lease structured to offset debt obligations with energy savings. Neither bank was willing to invest in the project. Eventually HHAR contacted BofA Merrill, with which it had a longstanding relationship. BofA Merrill agreed to attempt to arrange the financing. However, in order to align debt payments with the energy savings at the required term, BofA Merrill suggested to HHAR to engage NYGB to achieve the desired extended term.

Counterparty assessment of NYGB's impact on project feasibility. Both Ms. Liebeskind and Mr. Kole noted that NYGB's ability to structure financing terms with a tenor sufficient to align debt coverage with the timing of energy savings was the critical factor in executing the transaction. Ms. Liebeskind stated that:

> *"NY Green Bank extended the term, offered a very good interest rate, and made it possible for us to offset our debt service requirements with utility savings. We doubt any other lender would have matched that."*

"NY Green Bank staff were easy to work with, transparent, fully engaged, creating a win/win situation in a successful public/private partnership. Without the participation of NY Green Bank, this project could not happen."

The CHP project established HHAR as the first and only nursing home in New York City with an independent power source. HHAR has received many inquiries from long-term care facilities in the region interested in installing CHP systems, particularly in the wake of Superstorm Sandy. Looking forward, RiverSpring expects to develop 13 acres adjacent to HHAR and plans to install CHP in the new facility. When asked if HHAR or its parent company RiverSpring would work with NYGB in the future, Ms. Liebeskind responded:

"We would look forward to another partnership with both Bank of America and NY Green Bank again."

2.2 Case Study 2: Northport-East Northport Union Free School District

Table 2: Case Summary – Northport-East Northport Union Free School District

Developer/Owner: Northport-East Northport Union Free School District (Suffolk County, NY)	**Financial Product:** Asset Loan and Investment
Financial Institution: Signature Public Funding Corporation - co-investor Bank of America Merrill Lynch – facilitator	**Product Sub-Type:** Term Loan **Amount Financed:** $8.9 million
Projects Financed: Install energy improvements in nine schools and one administrative building. Improvements include: lighting retrofits, building shell improvements, energy management systems, water conservation units and ventilation system refurbishments. **Total Project Costs:** $13.0 million	**NY Green Bank Participation:** NYGB participated in funding a tax-exempt equipment lease. The project is part of a strategy to aggregate similar energy efficiency projects into a portfolio to encourage private sector financing.
Estimated Annual Energy Savings and Other Benefits: Annual Cost Savings: $1.1 million Annual Electric Savings: 2,030 – 2,480 MWh Annual Fuel Savings: 18,900– 23,000 MMBtu Lifetime Emissions Reduced: 2,070 – 2,530 Metric Tons	**Market Barriers Addressed:** Loan repayment schedule Limited availability of private capital for small to mid-size transactions

Owner/Developer. The Northport-East Northport Union Free School District ("**Northport**") is located in northern Suffolk County on Long Island. The school district has 10 buildings: seven elementary schools, one middle school, one high school and one administration building. Student enrolment was 5,473 for the 2018-2019 school year.

Project Description. This project financed $12.6 million in energy efficient equipment installed as part of an energy performance contract with Johnson Controls International plc ("**JCI**"). JCI installed the equipment and oversaw its operation. It guaranteed specific energy savings, receipt of utility incentives, and the value of total project economic benefits including energy and maintenance cost savings.

Project Financing. The Northport transaction was structured similarly to the HHAR transaction, with several key differences:

- BAPCC sold its entire interest in the lease to two organizations: NYGB and Signature Public Financing Corporation ("**SPFC**"), a subsidiary of Signature Bank. SPFC purchased a 10-year $4.2 million interest, and NYGB purchased an eighteen-year $8.9 million interest.
- Northport obtained cash incentives from utility-sponsored energy efficiency programs, as opposed to NYSERDA programs.

Impact of NYGB Participation. Northport's energy audit identified that the efficiency measures with the greatest savings potential – ventilation system modifications, energy management systems, and envelope improvements – also had the longest payback periods, with several approaching 20 years. While other measures, including lighting and water conservation retrofits had much shorter paybacks, the "blended" package of measures required an 18-year loan to meet Northport's and New York State's statutory requirement that annual utility savings match or exceed debt service obligations.

With NYGB's participation, the lease term was extended to 18 years (from the maximum 10 years offered by BAPCC on this transaction), enabling Northport to secure a larger loan and more favorable financing terms that met its investment requirements. Northport created a positive cash flow savings stream for the extended project period using savings from lighting retrofits and water conservation measures to subsidize capital costs for measures with greater savings but longer paybacks.