

Expanding Availability of Residential Energy Efficiency Loans to Homeowners Throughout New York State

RenewFund Finance

NY Green Bank (“NYGB”) will provide up to \$20.0 million in subordinated capital to RenewFund Finance (“RF Finance”), a wholly-owned subsidiary of Renew Financial,² to support the extension of up to \$100.0 million of unsecured loans to as many as 12,000 homeowners Statewide for residential renewable energy and energy efficiency improvements.

Transaction Description

NYGB has committed \$20.0 million of subordinated capital to RF Finance which, together with a warehouse line of credit provided by Citi, will finance the purchase of New York State (“NYS”) residential energy efficiency loan receivables, as well as a small portion of renewable energy loan receivables (given the size of individual loans available for homeowners only a minimal number are expected to be used towards the financing of renewable energy projects, so this profile will focus on energy efficiency factors and outcomes). Purchased receivables will be pooled with energy efficiency loan receivables originated under related RF Finance programs. The objective is to provide cost-effective funding for residential energy efficiency projects through RF Finance’s national financing platform, referred to as the Warehouse for Energy Efficiency Loans or “WHEEL”, created through a public-private partnership with Citi.

Since mid-2014, several other states have worked with RF Finance to offer low-cost renewable energy and energy efficiency loans to homeowners. NYGB will do the same for the benefit of NYS homeowners with the goal of increasing the scale of deployment in NYS. This program not only will support homeowner efficiency improvements, but also promote residential energy efficiency loan receivables as attractive alternative investments for banks and institutional investors. The success of RF Finance’s program is expected to increase market volume and liquidity for energy efficiency loans, and provide needed performance data (both in connection with installed improvements and underlying loans) and commercial track records. In turn, these developments should drive lower required returns (reflecting better understood and more efficiently priced risks), and reduce homeowners’ financing costs to make energy efficiency improvements.

This Transaction Profile is provided pursuant to the “NY Green Bank – Metrics, Reporting & Evaluation Plan, Version 3.0” (the “**Metrics Plan**”) developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on June 20, 2016.³ The Transaction Profile contains specific information in connection with the RF Finance transaction (which was entered into on September 25, 2015), as required by the Metrics Plan.⁴

¹ Refer to the Summary of Changes document for details of updates, available at www.greenbank.ny.gov/Investments/Transaction-Profiles.

² Formerly named “Renewable Funding”.

³ Case 13-M-0412.

⁴ See Section 4.0, page 8 and Schedule 3.

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loans & Investments	Other - Subordinated Capital	\$20.0 million

Location(s) of Underlying Project(s)

Statewide.⁵ Loans of up to \$20,000 with a duration of up to 10 years will be offered throughout NYS to help finance renewable energy and energy efficiency improvements for up to 12,000 owner-occupied residences. The portfolio of loan receivables is expected to be securitized within approximately 18 months.

Types of Client & Partner Organizations that are Transaction Participants

	Name	Participant Type
Client	RF Finance	Specialty Finance Company
Partners (current)	Citi	Global Corporate & Investment Bank
Partners (future)	To Be Determined	Term Institutional Investor(s)

RF Finance is the master servicer of WHEEL 2.0, as well as the loan originator and manager of the New York State contractor network; and Citi is providing the senior secured warehouse facility.

Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Homeowners	High upfront costs prevent homeowners from investing in residential energy efficiency improvements.	The WHEEL platform – a nationwide program launching in NYS with financing from NYGB – was designed to apply public support for private funding to provide cost-effective consumer loans for residential energy efficiency improvements. WHEEL is able to mitigate unsecured loan risks because of standardized homeowner and contractor underwriting, and by pooling geographically diverse residential energy efficiency loans, resulting in cost-effective loan rates for homeowners.
Capital Market Participants	Investors are not substantially familiar with performance behavior of unsecured consumer loans for residential energy efficiency projects.	While Citi and NYGB are providing interim financing, the final financing for the loans will be raised through a rated asset-backed securitization when sufficient collateral (i.e., pool of residential energy efficiency loans) has been originated and aggregated in the warehouse facility. As investors become more familiar with the performance behavior of this asset class, broader market demand from investors may translate into better rate levels of future residential energy efficiency loans, benefitting homeowners. Continued growth and success of the WHEEL program is expected to broaden the recognition of this emerging asset class of residential energy efficiency in the securitization market.

Technologies Involved

Technology	Measures
Energy Efficiency	Energy Star appliances; qualified indoor and outdoor lighting fixtures and light bulbs; qualified heating, ventilation and air conditioning improvements; certain water conservation measures;

⁵ Defined as projects located in four or more regions of the State.

Technology	Measures
	qualified windows, skylights and doors; certain air sealing and insulation measures; energy monitoring and metering systems
Renewable Energy	Solar photovoltaic systems, solar thermal systems and solar water heaters

Metrics & Evaluation Plan

Planned Energy & Environmental Metrics

NYGB’s minimum investment criteria specifically require that “transactions will have the potential for energy savings and/or clean energy generation that will contribute to greenhouse gas [(“GHG”)] reductions in support of New York’s energy policies”.⁶ In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on⁷:

- Lifetime energy saved by fuel type from efficiency projects (MWh/MMBtu) and/or lifetime clean energy generated (MWh);
- Clean energy generation installed capacity (MW); and
- Lifetime GHG emission reductions (metric tons).

The estimated lifetime and annualized energy and environmental impacts of the WHEEL program financing in New York at full deployment, facilitated by NYGB’s participation in this transaction, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Energy savings from efficiency measures (electric) (MWh)	396,000	421,000	39,600	42,100
Energy savings from efficiency measures (fuel) (MMBtu)	5,540,000	6,020,000	554,000	602,000
Clean, renewable energy generated (MWh)	21,400	32,200	2,140	3,220
Clean energy generation installed capacity (MW) ⁸	2.27		Not Applicable	
GHG emission reductions (metric tons) ⁹	570,000	605,000	57,000	60,500

Planned Market Characterization Baseline & Market Transformation Potential

The Metrics Plan requires that market evaluation will occur when a critical mass of NYGB financing and investment arrangements are put in place. This market evaluation will be conducted on sectors that NYGB has supported and will occur approximately three to five years following initial NYGB capital deployments.¹⁰ Baseline data will be collected in 2017 for most indicators as a comparison point against which to assess market progress in the later studies. Progress indicators are defined below for the short, mid and long terms.

⁶ Case 13-M-0412, “Order Establishing New York Green Bank and Providing Initial Capitalization” issued and effective December 19, 2013 of the Commission, Ordering Clause 6 at pages 24 – 25.

⁷ See Metrics Plan, Section 2.0, pages 2 – 6.

⁸ Installed clean energy generation capacity at full deployment of funds is the same for annualized and lifetime duration.

⁹ As of January 1, 2016, the New York State Energy Research and Development Authority (“NYSERDA”) utilizes a 1,160 lbs/MWh conversion factor to estimate GHG emissions reductions for electric generation and energy efficiency savings across all components of the Clean Energy Fund. NYSERDA previously utilized a 625 lbs/MWh conversion factor.

¹⁰ See Metrics Plan, Section 3.3 at page 7.

Short term progress indicators will identify early activity levels and will be regularly tracked for the duration of the transaction. These include, but are not limited to:

- Number of projects in development and completed;
- Average and aggregate dollar value of projects in development and completed;
- Number and type of measures installed; and
- Number of contractors participating in program.

Mid and long term indicators will be expected to show progress through program tracking or market evaluation over time. These include, but are not limited to:

- General understanding of renewable energy and energy efficiency loan performance by the financial community;
- View of banks and institutional investors as to the investment value of residential energy efficiency and renewable energy loan receivables;
- Increased awareness and use of residential loan and project performance data produced by this project by financing entities;
- Market volume of residential energy efficiency and renewable energy loans;
- Scale of energy efficiency and renewable energy investments by homeowners in NYS;
- Homeowner financing costs for energy efficiency and renewable improvements;
- Number of securitizations for residential energy efficiency and renewable energy loan pools in place; and
- Number of commercial banks offering similar warehouse lines of credit.

Proposed Method of Outcome/Impact Evaluation (by NYSERDA) & Timeframe

Market evaluation will address the short, mid and long term indicators identified above. Methods will include analysis of program data along with interviews and surveys of market participants to track information including but not limited to: participation rates, project scale information, interest in renewable energy and energy efficiency, and influence of NYGB's participation on financial markets and homeowners. As noted, baseline data will be collected on most key indicators in 201 and later follow up studies will assess progress against baseline levels. The specific timing of these efforts may be revised based on experience or other factors as the Project evolves.

Impact evaluation is expected to include retail electric and gas utility billing analysis to verify initial consumption estimates and assess impacts related to installation of energy-efficient measures. Releases for billing data will be requested of all loan recipients at closing allowing NYSERDA and third party evaluators access to utility data prior to and following measure installation. Billing analysis will be conducted beginning in 2018 and be updated annually to align initial estimates of energy savings with actual savings. On-site verification of measure installations and performance may be conducted as resources allow. This is expected to occur on a less frequent basis to support ongoing billing analyses over time, as greater experience is gained. Billing analysis is a generally accepted and cost-effective method to validate energy savings on projects involving several measures and aggregate savings levels of approximately 8% or more of total consumption. Should the project makeup indicate that billing analysis is not a viable method for certain segments of the participants, other methods will be considered. For renewable energy projects, meter reads of energy generation will be taken with on-site verification conducted as needed. Importantly, all customer data will be anonymized and/or aggregated prior to being reported or published.

As with all NYGB investments, RF Finance projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, ideally be tracked in order to minimize any double-counting activity on a consolidated basis. As set out in the Metrics Plan, evaluation sampling approaches will also be used as a mechanism to estimate overlap and minimize double counting. Attempts will also be made to coordinate market and impact evaluation activities for these Projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.