

Providing New Yorkers with Greater Access to Residential Solar Opportunities

Vivint Solar Inc.

In March 2017, NY Green Bank (“NYGB”) committed \$20.0 million to participate in a \$375.0 million revolving back leverage aggregation facility (“Aggregation Facility”) for Vivint Solar Inc. (“Vivint Solar”), a national residential solar installer. This represents an expansion of NYGB’s support for Vivint Solar’s development efforts in New York State (“NYS”) after NYGB provided \$37.5 million in a term loan (“Term Loan”) to Vivint Solar in August 2016. As a participant with other banks in the Aggregation Facility, NYGB’s capital will help to provide incremental liquidity for Vivint Solar to develop additional projects in NYS. Up to 25.0 megawatts (“MW”) of new projects are expected to be financed as a result of the Aggregation Facility and represent approximately 2,100 residential solar systems in the State. When added to the systems supported by the Term Loan, the total impact to NYS is expected to be at least 52.0 MW and 6,700 systems.

Transaction Description

Vivint Solar is a national residential solar provider that installs solar systems at no upfront cost to customers, and generates revenue through 20-year power purchase agreements (“PPAs”) and lease agreements. Over 11% of Vivint Solar’s current portfolio is located in NYS and Vivint Solar has placed an emphasis on growing its business in the State. Vivint Solar engaged Bank of America Merrill Lynch (“BAML”) to structure, arrange, and syndicate a \$375.0 million Aggregation Facility, to which NYGB has committed \$20.0 million, in addition to its participation in the Term Loan arranged by Investec.

NYGB’s participation in this transaction provides liquidity to support Vivint Solar’s ability to provide additional solar deployment capital in NYS. The additional liquidity helps the market to continue to grow, lower the cost of capital, and encourage further development of renewable energy and private sector participation.

With NYGB’s \$20.0 million participation in the Aggregation Facility and \$37.5 million participation in the Term Loan, NYGB’s total commitment will help Vivint Solar finance at least 52.0 MW or 6,700 residential solar systems in NYS. This is anticipated to result in the reduction of 32,000 metric tons of greenhouse gas (“GHG”) emissions annually or 800,000 metric tons of GHG emissions over a 25-year project life.

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, 2016.² This Transaction Profile contains specific information in connection with the Vivint Solar transactions entered into on August 4, 2016 and March 31, 2017, as required by the Metrics Plan.³

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

² Case 13-M-0412.

³ See Section 4.0, page 8 and Schedule 3.

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loan & Investment	Medium Term Loan	\$37.5 million
	Aggregation Facility	\$20.0 million

Location(s) of Underlying Project(s)

Statewide.⁴ Vivint Solar customers are homeowners with leases or PPA structures in regions across NYS.

Types of Client & Counterparty Organizations that are Transaction Participants

	Name	Participant Type
Client	Bank of America Merrill Lynch (Aggregation Facility)	Global Corporate & Investment Bank
	Investec (Term Loan)	Global Corporate & Investment Bank
Counterparties (current)	Vivint Solar	Energy Project Developer
	Various tax equity providers and commercial banks	Global Corporate & Investment Banks, Commercial/Regional Banks

Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Capital Market Participants	There is a limited (but growing) number of lenders actively financing residential solar projects.	NYGB's role as a specialty clean energy lender in both transactions provides other financing parties with greater confidence, making it both a key component to drawing in other private sector financiers and critical in supporting syndication efforts.
	Today's markets are neither liquid nor large enough for broadly syndicated term securitizations. Therefore, additional sources of liquidity are needed.	NYGB participation in the term loan helps to establish a medium term lending market as an alternative to refinancing through the securitization market. NYGB participation in the Aggregation Facility provides incremental liquidity to a developer active in NYS to increase transaction size. Both transactions are expected to draw new investors and financial institutions into the marketplace, resulting in enhanced liquidity.
	It is difficult for private sector capital providers to accurately assess performance due to lack of precedents in residential solar financing.	NYGB's participation in the transactions is expected to help demonstrate that competitive risk-return profiles can be achieved for solar investments.
Solar Project Developers	Many solar developers face challenges securing sufficient financing to meet customer demand – hampering their ability to grow and achieve economies of scale.	NYGB's participation in the Term Loan and Aggregation Facility provides additional needed liquidity to support Vivint Solar's growing demand from homeowners. Both transactions enable Vivint Solar to use its capital to process project backlog.
Homeowners	Homeowners are skeptical about savings from “going solar.”	Enhanced liquidity will result in lower capital costs for developers, reducing the lease or PPA costs to NYS homeowners beyond those currently offered.

⁴ Defined as projects located in four or more regions of the State.

Technologies Involved

Technology	Measures
Renewable Energy	Solar photovoltaic (“PV”) systems

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 [GHG] reductions in support of New York’s energy policies”.⁵ In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on⁶:

- Estimated gross lifetime and first-year clean energy generated (MWh);
- Estimated gross clean energy generation installed capacity (MW); and
- Estimated gross lifetime and first-year GHG emission reductions (metric tons).

Existing projects financed by the Term Loan are not included in the energy and environmental metrics for this transaction, as they are already installed and contributing to GHG emission reductions in NYS. The estimated gross lifetime and first-year energy and environmental impacts of Vivint Solar’s new development in NYS, facilitated by the increased liquidity due to NYGB’s participation in the Term Loan, and the participation in the Aggregation Facility, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated clean energy generated (MWh)	1,520,000	1,860,000	60,800	74,300
Estimated clean energy generation installed capacity (MW) ⁷	52.0	63.0	Not Applicable	
Estimated GHG emission reductions (metrics tons) ⁸	800,000	978,000	32,000	39,100

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 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.⁹ 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.

Short-term progress indicators will identify early activity levels and will be regularly tracked for the duration of the transaction. These include:

- Size (i.e., generation capacity and dollar value) and location of existing projects financed by the term loan;
- Performance of the underlying customer agreements for existing projects financed by the term loan;

⁵ 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.

⁶ See Metrics Plan, Section 2.0, pages 2 - 6.

⁷ Installed clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.

⁸ 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.

⁹ See Metrics Plan, Section 3.3 at page 7.

- Size (i.e., generation capacity and dollar value) and location of new projects deployed as a result of additional liquidity provided by this transaction; and
- Aggregate energy generation for new projects deployed as a result of additional liquidity provided by this transaction.

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:

- Market volume of Vivint Solar projects increases;
- General understanding of renewable energy benefits by financial community increases;
- Increased awareness and use of PPA performance data by financing entities;
- Increased awareness and use of project/technology performance data by financing entities;
- Demonstration of competitive risk-return profiles for solar investment;
- Decreased project costs;
- Replication of the medium-term loan financing structure;
- Volume of secondary market financing of residential solar assets; and
- Number of new lending participants.

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

NYSERDA will evaluate the impact this transaction has had on the clean energy finance markets and the energy/environmental benefits which it delivers.

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 (homeowners, financial community) to track information including but not limited to: participation rates, project scale information, interest in solar financing (generally and with regard to residential specifically), and influence of NYGB's participation on financial markets. As noted, baseline data will be collected on most key indicators in 2017 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 investment evolves.

Impact evaluation will use actual system performance data to understand energy and environmental outcomes. Impact evaluation is expected to include quarterly review and analysis of actual PV portfolio production data collected by Vivint Solar. Actual PV portfolio performance will be monitored and documented against expected performance. Impact evaluation will help provide verification of performance, in turn aiding the clean energy finance community in better understanding risk in this technology area.

As with all NYGB investments, Vivint Solar projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, be tracked in order to minimize any double-counting of activity or benefits on a consolidated basis. Pursuant to 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.