

Expanding the New York State Residential Solar Market

Vivint Solar, Inc.

NY Green Bank (“**NYGB**”) has entered into three transactions to accelerate the deployment of up to 64.0 megawatts (“**MW**”) of solar power at homes across New York State (“**NYS**”) by Vivint Solar, Inc. (“**Vivint Solar**”). Vivint Solar is a national solar provider that markets and develops residential solar energy systems. These three transactions complement each other – one provides financing to fund the purchase of materials and installation of solar projects, and the other two provide post-construction financing. The first post-construction financing was arranged by Investec Bank PLC (“**Investec**”), an international specialty bank and asset manager; the second financing was arranged by Bank of America Merrill Lynch (“**BAML**”), an investment bank; and the third financing was jointly arranged by five separate investment banks.

Transaction Descriptions

Vivint Solar Construction Loan Facility

On June 29, 2018, NYGB committed \$19.0 million to participate in Vivint Solar’s \$150.0 million corporate revolving credit facility (the “**Construction Loan Facility**” or “**CLF**”) alongside seven other lenders. The CLF will be used by Vivint Solar to fund customer acquisition and construction of systems. Once installed, these systems will be refinanced through other debt facilities (described below) and tax equity commitments arranged by Vivint Solar. NYGB’s participation in the CLF broadens the availability of construction financing for residential distributed energy projects across NYS.

Vivint Solar Aggregation Facility

On March 31, 2017, NYGB closed a \$20.0 million commitment to participate in a \$375.0 million senior secured revolving back leverage aggregation facility (the “**Aggregation Facility**”) for Vivint Solar. The transaction was arranged by BAML and provides Vivint Solar with financing to expand its business in NYS and elsewhere. Through increased scale, this aggregation transaction is expected to draw new investors and financial institutions into the marketplace, decreasing the cost of capital for solar developers and installers, and, as a result, lowering the cost of solar power equipment sold or leased to homeowners.

Vivint Solar Term Loan Facility

On August 4, 2016, NYGB closed a \$37.5 million commitment to participate in a \$300.0 million senior secured term loan (the “**Term Loan Facility**”) arranged by Investec. The proceeds from the Term Loan provide refinancing for Vivint Solar projects. The transaction is expected to accelerate the deployment of over 5,000 solar projects at homes across NYS.

Overall Context

Vivint Solar sought NYGB’s participation in the CLF, Aggregation Facility, and Term Loan Facility in order to further develop its project pipeline and finance operating assets in its national portfolio. With both construction and longer-term financing in place, Vivint Solar is positioned to meet the demand from homeowners and expand its ability to finance the installation of solar projects throughout NYS.

These complementary transactions will result in the aggregation of bundled pools of residential solar systems that will ultimately be refinanced through one or more longer-term take-out financings. One type of take-out financing is a securitization, or the sale of underlying cash flows resulting from residential leases or power purchase

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

agreements (“PPAs”) to third party investors. Solar developers can raise large amounts of capital through a securitization, allowing for further development of the emerging residential solar asset class. On June 11, 2018, Vivint Solar completed its first securitization, raising \$466.0 million through the sale of the cash flows of a portfolio of residential solar systems. The greater size of this securitization (when compared to the size of Vivint Solar’s debt facilities) will likely augment investor interest in solar assets, resulting in more attractive debt pricing. This, in turn, could benefit New Yorkers by allowing Vivint Solar to provide customers lower priced contracts to purchase power.

This Transaction Profile is provided pursuant to the updated “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 CLF (entered into on June 29, 2018), the Aggregation Facility (entered into on March 31, 2017), and the Term Loan Facility (entered into on August 4, 2016) as required by the Metrics Plan.³

Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation	Senior Secured Term Loan	\$37.5 million
Warehousing/Aggregation	Senior Secured Aggregation Facility	\$20.0 million
Asset Loan & Investment	Construction Financing Revolver	\$19.0 million

Location(s) of Underlying Project(s)

Statewide.⁴ Vivint Solar’s solar power generation systems will be offered to homeowners through PPA structures in regions across NYS.

Types of Organizations that are Transaction Participants

	Name	Participant Type
Clients	Goldman Sachs	Global Corporate & Investment Bank
	Investec	Global Corporate & Investment Bank
	BAML	Global Corporate & Investment Bank
Key Counterparties	Vivint Solar	Solar Energy Project Developer
Financiers (current)	Various tax equity providers and commercial banks	Global Corporate & Investment Banks, Commercial/Regional Banks
Financiers (future)	To be identified	Institutional Investors(s)

² Case 13-M-0412 and 14-M-0094.

³ See Section 4.0, page 8 and Schedule 3.

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

Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Capital Market Participants	In clean energy markets, there is a small (but growing) number of lenders actively financing residential solar projects.	NYGB’s participation in all three transactions facilitates the ability to achieve substantial transaction scale. This will enable increased tax equity investment and larger post-aggregation term financings - which may include securitizations - resulting in broader market penetration and enhanced liquidity, which are both key NYGB goals.
Solar Project Developers	Many solar developers face the challenge of securing sufficient financing to meet customer demand – hampering their ability to grow and achieve economies of scale.	NYGB’s participation in the Construction Loan Facility, Term Loan Facility, and Aggregation Facility will enable Vivint Solar to better meet residential demand in NYS. This type of financing can also be replicated with other developers seeking to secure similar capital access.
Homeowners	“Going solar” is not perceived by some homeowners as being practical or affordable, and some questions regarding benefits remain.	NYGB’s participation in all three transactions will produce benefits for eligible homeowners seeking to utilize solar power. Homeowners will have greater ability to contract for solar, while simultaneously realizing immediate reductions on their energy bill. Greater scale, and deeper, broader financing markets will lead to even more compelling offers available to homeowners and more information available on benefits.

Technologies Involved

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

Metrics & Evaluation Plan

Planned Energy & Environmental Metrics

NYGB’s minimum investment criteria specifically requires 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”.⁵ In addition, the Metrics Plan requires that the following energy and environmental measures applicable to this transaction, be reported on:

- 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).⁶

⁵ Case 13-M-041, “Order Establishing New York Green Bank and Providing Initial Capitalization” issued and effective December 18, 2013 of the Commission, Ordering Clause 6 at pages 24 - 25.

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

The estimated gross lifetime and first-year energy and environmental impacts of the financed PV systems 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)	1,698,000	1,896,000	67,920	75,800
Estimated clean energy generation installed capacity (MW) ⁷	58.0	64.0	Not Applicable	
Estimated GHG emission reductions (metric tons)	893,300	998,000	35,700	39,900

Planned Market Characterization Baseline & Market Transformation Potential

The Metrics Plan requires that market evaluation occurs when a critical mass of NYGB financing and investment arrangements are put in place. This market evaluation will be conducted on sectors in which NYGB has participated and will occur approximately three to five years following initial NYGB capital deployments. Baseline data will be collected in 2018 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.⁸

Output 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 and type of projects in development and completed;
- Average and aggregate dollar value of projects;
- Number and location of projects (by zip code);
- Size (generation capacity and dollar value) of projects; and
- Principal balance of each investment.

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

- Favorable financial performance data;
- Favorable technology performance data;
- Increased awareness in renewable energy/energy efficiency (“RE/EE”) benefits amongst financing entities as a result of favorable technology performance data;
- Investment risk/default rates become increasingly attractive to investors, as a result of positive financial performance data;
- Increasingly positive view of banks and institutional investors on investment value of RE/EE investment receivables;
- Scale of RE/EE investment increases, due to increased end-use market demand;
- Replication of finance model by other developers;
- Decreased project technology costs;
- Decreased financing costs;
- Increased number of RE/EE financings;
- Increased number of financial participants providing similar capital structures;
- Increased financial market volume for RE/EE projects;
- Reduced time to execute RE/EE financings;
- Emergence of secondary markets for RE/EE asset classes; and
- Positive multi-year track record for projects.

The above listed indicators will remain in development until market characterization and baseline activity commences.

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

⁸ See Metrics Plan, Section 3.3 at page 7.

Additional aspects may be tracked to further support baseline and market measurements.

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

Market evaluation will address the near-, 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 2018 and later follow-up studies will assess progress against baseline level. The specific timing of these efforts may be revised based on experience or other factors as the investment evolves.

Impact evaluation will be based on the size of the systems installed and the projected clean energy generation.

As with all NYGB investments, Vivint Solar projects that receipt of 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.