

## Scaling Residential Solar & a New Asset Class to Advance New York's Clean Energy Goals

### Solar Mosaic, Inc.<sup>1</sup>

*In April, 2016, NY Green Bank (“NYGB”) participated as part of a lending group in a \$200.0 million credit facility for Solar Mosaic, Inc. (“Mosaic”), a national financial technology company that provides loans to homeowners to finance the installation of solar systems on their homes. Due to greater than expected demand, that credit facility was increased by \$130.0 million in August, 2016, including the provision of a further \$40.0 million by NYGB, bringing NYGB’s total commitment to the facility to \$50.0 million. As a participant in the lending group, NYGB’s capital is expected to facilitate Mosaic’s financing of up to 9,000 residential solar systems in New York State (“NYS”). The effect of the two related financing transactions is to provide a credit facility of greater size for Mosaic commensurate with the demand for its products, facilitating expansion of Mosaic’s statewide footprint and contributing up to 60 megawatts (“MW”) of clean, local power in NYS.*

### Transaction Description

Mosaic is a financial technology company which, utilizing a third party contractor network, provides homeowners with loans to finance the installation of solar systems on their homes. At the request of Guggenheim Partners, a global investment and advisory financial services firm, and in partnership with Germany’s DZ BANK, NYGB participated in a \$110.0 million senior secured credit facility in April, 2016. Since the close of the original credit facility, Mosaic’s loan originations are occurring at a faster pace nationally than previously anticipated and, simultaneously, Mosaic and its network of developers are increasingly focused on NYS. Following the success of Mosaic’s loan product and the strong performance of the loans within the credit facility, Mosaic sought increased credit availability to satisfy demand for their loan product. Mosaic requested NYGB and private capital providers to participate in a \$130.0 million increase of the original facility, bringing the total size to \$240.0 million (the “**Credit Facility**”), with an additional \$40.0 million from NYGB and \$90.0 million from BNP Paribas, a global bank and financial services company.

NYGB’s entire \$50.0 million contribution to the Credit Facility is intended to drive deployment of projects in NYS. Additionally, NYGB’s participation: (i) will provide increased financing scale and diversity that will result in larger term securitizations that should assist creating greater market liquidity and drive down financing costs; (ii) increase deployment by Mosaic in NYS benefiting homeowners and the contractors serving them; and (iii) motivate new participants in the market given NYGB’s financial expertise in clean energy financings.

With the capital provided by the larger Credit Facility, Mosaic will provide homeowners with loans that will result in over 40,000 residential solar installations nationwide, building up an extensive portfolio of projects and resulting in considerable emissions reductions. NYGB participation in the Credit Facility will fund the financing of up to 9,000 new residential solar systems in NYS, contributing up to an additional 60 MW of clean, local power in New York.

This Transaction Profile is provided pursuant to the updated “NY Green Bank – Metrics, Reporting & Evaluation Plan” (the “**Metrics Plan**”) developed in collaboration with the NYS Department of Public Service and filed with the NYS Public Service Commission (the “**Commission**”) on February 22, 2016.<sup>2</sup> This Transaction Profile contains specific information in connection with the Mosaic transaction (which was entered into on April 15, 2016 and increased on August 22, 2016), as required by the Metrics Plan.<sup>3</sup>

<sup>1</sup> This Transaction Profile has been revised to reflect the increase of the Mosaic Credit Facility that occurred in August 2016. The previous version of this profile (originally posted on NYGB’s website in April, 2016) can be obtained upon request to NYGB.

<sup>2</sup> Case 13-M-0412.

<sup>3</sup> See Section 4.0, pages 8 and Schedule 3.

## Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation <sup>4</sup>	Senior Debt	\$50.0 million

## Location(s) of Underlying Project(s)

Statewide.<sup>5</sup> Mosaic will market its loan products throughout New York.

## Types of Client & Counterparty Organizations that are Transaction Participants

	Name	Participant Type
<b>Client</b>	Mosaic	Financial Technology Company
<b>Counterparties (current)</b>	Approved Installers and Equipment Suppliers DZ Bank BNP Paribas Guggenheim Partners	Industry Vendors Lender & Administrative Agent Lender Arranger of the Credit Facility
<b>Partners (future)</b>	To Be Determined	Credit Facility Lenders Term Institutional Investor(s)

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
<b>Private Market Participants</b>	The number of bank lenders participating in credit facilities that fund loans to homeowners for residential solar projects is growing, however there remains limited private capital availability resulting in smaller credit facilities than certain developers are able to utilize in meeting the demand for their products.	<p>NYGB's participation increases the credit facility size to a level that permits greater Mosaic deployment. In addition, NYGB's participation as a specialty clean energy investor encourages new potential bank lender entrants.</p> <p>As the market becomes larger and portfolios of residential solar loans have greater performance history, additional bank lenders are expected to enter the market.</p> <p>Further, as the track record of bank lenders being refinanced by institutional securitization lenders upon aggregation of sizable portfolios grows, additional banks will gain greater confidence in being refinanced as is intended.</p>
	Institutional term securitizations residential solar cash flows (PPAs, leases, loans) have grown substantially over the past few years, however the size of market and size of individual transactions is nowhere near the scale of other securitized asset classes. Attracting the broadest set of large investors, which will ultimately improve liquidity and drive down pricing, requires more	Larger term securitizations <sup>6</sup> require larger credit facilities such as this transaction, where DZ, BNP Paribas and NYGB fund the aggregation of solar loans on a short term basis to be subsequently securitized at scale. NYGB's participation enables the "warehouse" credit facility to be larger than it otherwise would be, which will result in larger term securitizations than might otherwise have been possible. Further, NYGB's participation is expected to assist in motivating additional future bank lenders to participate in the Credit Facility,

<sup>4</sup> A warehouse credit facility is a type of financing product where funds are advanced to a borrower to facilitate the completion over time of a series of qualifying projects that together aggregate into a sizable portfolio. Larger portfolios of projects tend to attract greater interest and long term investment alternatives in the commercial markets than might otherwise be available to finance each individual project.

<sup>5</sup> Defined as projects located in four or more regions of the State.

<sup>6</sup> Securitization is the process of pooling contractual debt – such as credit card debt, auto loans, residential mortgages, etc. – and selling the related cash flows (payments that will be made on the debt) to third party investors as securities. The process creates liquidity in the marketplace by enabling smaller investors to purchase shares in a larger asset pool.

Beneficiary	Market Barrier	Financing Solution
	securitizations and larger securitizations.	producing larger securitizations, in turn resulting in a broader set of active investors.
<b>NYS Residential Solar Installers</b>	Access to financing solutions enables residential solar installers to better serve customers that seek to own solar but are more compelled to purchase if financing is provided. Well-packaged financing solutions are not readily available to many contractors.	Products such as Mosaic’s loan offering give Mosaic’s third party contractor network a packaged financing solution, allowing those contractors to install more solar and grow their businesses.
<b>NYS Homeowners</b>	Greater customer choice in acquiring and financing solar will result in more homeowners doing so.	With a Mosaic loan, a NYS resident will benefit from an additional financing option that allows for ownership of the system on their roof, directly enjoying remote net metering, federal tax benefits, and NYS incentives.

## Technologies Involved

Technology	Measures
<b>Renewable Energy</b>	Solar photovoltaic (“ <b>PV</b> ”) 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 greenhouse gas [(‘**GHG**’)] reductions in support of New York’s energy policies”.<sup>7</sup> In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on<sup>8</sup>:

- 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).

The estimated gross lifetime and first-year energy and environmental impacts of Mosaic’s development in NYS are as follows:<sup>9</sup>

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	First-Year Low Estimate	First-Year High Estimate
Estimated clean energy generated	500,000 MWh	1,800,000 MWh	20,000 MWh	70,000 MWh
Estimated clean energy generation installed capacity <sup>10</sup>	17 MW	60 MW	Not Applicable	
Estimated GHG emission reductions <sup>11</sup>	260,000 metric tons	920,000 metric tons	11,000 metric tons	37,000 metric tons

<sup>7</sup> 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.

<sup>8</sup> See Metrics Plan, Section 2.0, page 2 – 6.

<sup>9</sup> Note these figures have been modified to reflect the increased Credit Facility.

<sup>10</sup> Built clean energy generation capacity at full deployment of funds is the same for first-year and lifetime duration.

<sup>11</sup> 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.

## 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.<sup>12</sup> Baseline data will be collected in 2016 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, but are not limited to:

- Number and size (generation capacity and dollar value) of projects completed; and
- Loan performance.

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:

- Awareness and use of solar loan performance data produced by this project by potential financing entities;
- View of market actors (e.g., insurance institutions) as to investment value of renewable energy loans; and
- Securitizations of residential solar projects.

The above indicators will remain in development until market characterization and baseline activity commences. 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 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: project scale information, interest in solar financing, and influence of the intervention on financial markets. As noted, baseline data will be collected on most key indicators in 2016 and later follow up studies will assess progress against baseline levels in 2017 - 2018. The specific timing of these efforts may be revised based on experience or other factors as the project evolves.

**Impact evaluation** will use estimated system performance data to understand energy and environmental outcomes.

As with all NYGB investments, Mosaic projects that receive an incentive or funding from other entities (e.g., utility, other NYSERDA program) will, in accordance with the Metrics Plan, be specifically tracked in order to avoid any double-counting activity on a consolidated basis. Per the Metrics Plan, evaluation sampling approaches will also be used as a mechanism to estimate overlap and avoid 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.

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<sup>12</sup> See Metrics Plan, Section 3.3 at page 7.