

## Expanding Residential Solar Opportunities for New York Homeowners

### Level Solar

*\$25.0 million credit facility provided by NY Green Bank (“NYGB”) will allow Level Solar, a New York-based solar provider that designs and installs systems at no cost to the customer, to materially grow its customer base. By providing renewable power to homeowners through long-term power purchase agreements, Level Solar is expected to reach sufficient scale to attract financing entirely through private markets.*

### Transaction Description

Level Solar designs and installs solar arrays on residential homes, and currently serves over 700 customers in Suffolk and Nassau Counties on Long Island. Each installation immediately reduces both carbon emissions and electricity cost for residential customers. Level Solar exemplifies the many emerging, successful renewable energy project developers in the State which, despite seasoned senior management teams and early marketplace success, experience challenges in securing adequate financing to support demand for their clean energy products and/or services. NYGB’s \$25.0 million financial warehouse facility<sup>2</sup> – which could ultimately be upsized to \$50.0 million – provides revolving credit to Level Solar to fund residential solar installations, enabling it to reach thousands of new customers. This transaction type is replicable for other participants in the solar market in New York State (“NYS”) – specifically smaller developers with early marketplace success but limited scale to date – providing precedent for further expanding residential renewable energy in the State.

Future refinancing(s) may occur via securitization – the sale of a pool of loans to third party investors – providing additional avenues to develop and expand this emerging asset class. To date, the market for residential solar securitizations has been limited with only a small number occurring globally since the end of 2013. NYGB’s \$25.0 million warehouse facility will be used by Level Solar to finance installation and development costs as it expands its current operations to achieve the scale needed for the business to be financed in commercial markets.

NYGB is participating in the Level Solar transaction with a division of U.S. Bank, which is investing approximately \$20.0 million in tax equity. While U.S. Bank is active in solar financings, this transaction establishes a fund dedicated primarily to NYS.

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.<sup>3</sup> The Transaction Profile contains specific information in connection with the Level Solar transaction (which was entered into on September 30, 2015), as required by the Metrics Plan.<sup>4</sup>

<sup>1</sup> Refer to the Summary of Changes document for details of updates, available at [www.greenbank.ny.gov/Investments/Transaction-Profiles](http://www.greenbank.ny.gov/Investments/Transaction-Profiles).

<sup>2</sup> A warehouse 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 with respect to which there may be greater interest and long-term investment alternatives in the commercial markets than might otherwise be available to finance each individual project. During the period (which could be a number of years) over which a particular portfolio of projects is being built or aggregated, the underlying facility is considered to be a “warehouse” in the figurative sense that it is the “place” where each developed and developing project is “held” as the larger portfolio of projects is built during the facility term.

<sup>3</sup> Case 13-M-0412.

<sup>4</sup> See Section 4.0, page 8 and Schedule 3.

## Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Warehousing/Aggregation	Revolving Credit	\$25.0 million

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

New York. Level Solar's operations are based primarily on Long Island and NYGB's \$25.0 million warehouse facility is expected to be largely focused in that region. Level Solar's ongoing growth and expansion, including to other regions in NYS, will be enhanced by this transaction.

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

	Name	Participant Type
<b>Client</b>	Level Solar	Energy Project Developer
<b>Partners (current)</b>	U.S. Bank	Commercial Bank
<b>Partners (future)</b>	To Be Identified	Institutional Investor(s)

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Homeowners	Limited ability to contract for the supply of solar energy directly to homes without significant up front cost.	This transaction will produce material benefits for eligible homeowners seeking to utilize solar power, as homeowners will have greater ability to contract for solar, while simultaneously realizing immediate reductions on their energy bill.
Capital Market Participants	Difficulty securing adequate financing (e.g., amount, tenor, terms) for certain solar developers with limited track record.	NYGB's participation in this transaction facilitates the growth of a NYS-based developer and demonstrates this type of business as being more readily financeable by private sector capital providers going forward. In addition, a broader and deeper market benefits all developers as the asset class achieves greater scale.
	Limited private capital interest to date in supporting smaller or less well-known developers active in New York's solar market, primarily restricted by lack of scale.	Where there is more limited historical system and end-user/loan performance data, track records for financings of this nature are less, in turn limiting private capital appetite for this type of exposure. For smaller developers and early entrants to an emerging market, lack of scale translates directly into higher costs for project procurement, permitting, and fees. NYGB's participation in this transaction is expected to help demonstrate that competitive risk-return profiles can be achieved through the provision of capital to qualified smaller solar developers, both within the State and generally.

## Technologies Involved

Technology	Measures
Renewable Energy	Solar photovoltaic ("PV") systems

## Metrics and 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>5</sup> In addition, the Metrics Plan requires that the following energy and environmental measures, applicable to this transaction, be reported on<sup>6</sup>:

- 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 expansion of Level Solar in New York at full deployment, facilitated by NYGB’s financial participation in this transaction, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Clean, renewable energy generated (MWh)	528,000	1,280,000	21,100	51,400
Clean energy generation installed capacity (MW) <sup>7</sup>	20	40	Not Applicable	
GHG emission reductions (metrics tons) <sup>8</sup>	278,000	676,000	11,100	27,000

### 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>9</sup> 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, but are not limited to:

- Number and size (generation capacity and dollar value) of projects completed through the Level Solar financing;
- Expansion of geographic coverage of Level Solar operations; and
- Performance of installed systems and loans.

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 and project performance data by financing entities, as produced by this project;
- Decreased project cost for Level Solar and other developers (procurement, permitting, fees), due to increased experience and scale;

<sup>5</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>6</sup> See Metrics Plan, Section 2.0, pages 2 – 6.

<sup>7</sup> Installed clean energy generation capacity at full deployment of funds is the same for annualized and lifetime duration.

<sup>8</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.

<sup>9</sup> See Metrics Plan, Section 3.3 at page 7.

- Demonstration of competitive risk-return profiles for solar investment;
- Replication of Level Solar finance model by other solar developers (especially those with previously limited scope); and
- Future refinancing via securitization or sale of Level Solar loans to third-party investors.

### **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 solar financing, 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 Project evolves.

**Impact evaluation** will use actual system performance data to understand energy and environmental outcomes; selected on-site verification of measures installed; and/or electronic monitoring of clean energy generation. Impact evaluation is expected to include periodic review and analysis of actual PV system electricity production data collected by Level Solar. In instances where actual performance varies from expected performance, site visits could be conducted to identify causes and corrective actions. Impact evaluation will help provide verification of performance, in turn aiding the clean energy finance community in understanding risk in this technology area.

As with all NYGB investments, Level Solar 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 any projects that receive support from multiple sources in order to maximize the efficiency of data collection and avoid participant survey fatigue.