

## Expanding New York’s Distributed Wind Energy Resources

### United Wind

*United Wind will install over 160 distributed wind energy systems for residential, agricultural and commercial customers throughout Central and Western New York State (“NYS”), facilitated by a \$4.0 million revolving construction loan from NY Green Bank (“NYGB”). United Wind’s systems will foster greater access to renewable energy, while NYGB’s participation will help develop a strong track record for distributed renewable energy construction financings in the State.*

### Transaction Description

United Wind is a New York-based distributed wind system lease provider that will partner with NYGB to install over 160 wind energy systems throughout Central and Western NYS over the next two years. Each installation will utilize a single 10 kW wind turbine generator, expected to generate in aggregate between 64,300 and 78,100 MWh of clean energy over the 30-year useful life of the total project portfolio. NYGB is partnering with both United Wind (the project developer) and U.S. Bank (the tax equity investor) to advance this first-of-its-kind distributed energy generation construction loan product. With NYGB’s participation in this transaction, United Wind will be able to offer its signature product: “WindLease”, a turnkey solution that allows residential, agricultural and commercial customer lessees to install distributed wind systems, resulting in the generation of clean energy and immediate reductions in electric bills, with no upfront cost to the end-user. The WindLease program is projected to help over 160 new customers install wind energy systems, greatly broadening the distributed energy types and financing options available to interested consumers, while also expanding asset classes for private capital investment.

This Transaction Profile is provided pursuant to the “New York 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>2</sup> The Transaction Profile contains specific information in connection with the United Wind transaction (which was entered into on October 7, 2015), as required by the Metrics Plan.<sup>3</sup>

### Form of NYGB Investment

NYGB Product	Product Sub-Type	Committed Capital
Asset Loans & Investments	Revolver	\$4.0 million

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

Multiple Regions.<sup>4</sup> Qualifying end-users throughout Central and Western New York will have the opportunity to benefit from United Wind’s WindLease product, including residential, agricultural and small commercial customers.

<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> Case 13-M-0412.

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

<sup>4</sup> Defined as projects located in two or three regions of the State.

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

	Name	Participant Type
<b>Client</b>	United Wind	Energy Project Developer
<b>Partners</b>	U.S. Bank	Commercial Bank
	Approved Installers and Equipment Suppliers	Industry Vendors

## Summary of Financing Market Objectives & Barriers Addressed

Beneficiary	Market Barrier	Financing Solution
Residential, Agricultural and Commercial Customers	Limited access to distributed energy solutions and high energy bills.	This transaction aims to provide NYS residential, agricultural and commercial customers with greater access to distributed energy solutions and, ultimately, to more affordable energy, as United Wind's lease product is estimated to save customers up to 30% - 50% on their energy bills over 30 years.
Capital Market Participants	Limited private capital interest to date in supporting the construction of distributed energy projects in New York's clean energy marketplace.	There is currently insufficient scale in this sector, representing a material barrier to private capital interest in providing construction finance for distributed clean energy projects. NYGB's key objective in this transaction is to establish a precedent for a construction loan for distributed generation and to address limited interest to date in supporting the construction of distributed energy projects. NYGB's participation as construction lender in this transaction establishes a market precedent for construction financing of a portfolio of distributed energy generation projects. NYGB transactions are designed to be easily replicated and the structure of this construction loan will not only be applicable to wind, but replicable for other clean energy technologies. The financing of multiple distributed wind projects will also help establish a performance track record and provide investors with critical data and greater confidence in investments of this type.

## Technologies Involved

Technology	Measures
Renewable Energy	Onshore wind 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>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 projects by United Wind in New York at full deployment, facilitated by NYGB’s financial participation, are as follows:

Energy/Environmental Impact	Lifetime Low Estimate	Lifetime High Estimate	Annualized Low Estimate	Annualized High Estimate
Clean, renewable energy generated (MWh)	64,300	78,100	2,140	2,600
Clean energy generation installed capacity (MW) <sup>7</sup>	1.66		Not Applicable	
GHG emission reductions (metric tons) <sup>8</sup>	33,900	41,100	1,130	1,370

### 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 of distributed wind energy systems in development and completed under the WindLease program;
- Average and aggregate dollar value of distributed wind energy systems (by end-use sector) completed under the WindLease program; and
- Development of data set on technology performance and loan performance for distributed wind energy projects.

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

- Increased deployment of distributed wind energy projects in NYS;
- Increased awareness and use of technology performance and loan performance data by financing

<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.

entities;

- Expansion of private capital interest in construction loan financing for distributed clean energy projects;
- Application of similar construction financing approaches for other distributed wind (or other clean energy) projects; and
- Similar construction financing for distributed clean energy projects offered by other private lenders.

## **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 financing options – specifically WindLease – 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; and/or electronic monitoring of clean energy generation. Impact evaluation is expected to include periodic review and analysis of actual wind electricity production data collected by United Wind. 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 better understanding risk affiliated with this technology type.

As with all NYGB investments, United Wind 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.