



RESPONSE TO:

New York Energy Highway RFI

SUBMITTED BY:

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EXECUTIVE SUMMARY

Iberdrola Renewables, LLC (“IBR”) is pleased to respond to the New York Energy Highway (“NYEH”) 2012 Request for Information for Renewable Electric Generation (“RFP”). This response contains information and input into the proposal process for the benefit of the NYEH and the New York Power Authority (“NYPA”).

IBR develops, owns and operates renewable energy projects nationwide and is the second largest wind developer in the U.S. with over 5,000 MW of renewable capacity under management. With offices in four major cities in North America, IBR supplies clean, renewable energy to over 50 customers across the United States. IBR is part of Iberdrola Renovables, S.A., the largest renewable developer in the world, operating in 19 countries. With this experience and backing, IBR is able to deliver a highly-viable project that is uniquely tailored to meet the growing renewable needs of New York.

The five wind energy projects described in this proposal represent hundreds of millions of dollars of investments in New York, up to \$500,000/year in local tax benefits and up to \$3.2 million/year in landowner lease payments. The projects will produce over 2 million MWh/year of clean electricity annually resulting in a cleaner supply of energy and a significant reduction in pollutants. As New York seeks to meet its 2015 renewable portfolio standard goals and maximize the potential benefits of wind energy and other renewables beyond 2015 several fundamental policies will need to be undertaken, including investments in local transmission upgrades and north-south bulk transmission lines. In addition, long-term, bundled power purchase agreements with the states investor owned utilities are essential for these wind energy projects to be constructed. These policy recommendations are explained in further detail in our proposal and are essential to completing the wind energy projects described in this RFI.

1. RESPONDENT INFORMATION

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CONTINGENCY STATEMENT

This IBR Response does not constitute a binding offer or a binding agreement, whether by estoppel or otherwise, by either party for the purchase and sale of electric energy, ancillary services, environmental attributes, or any other goods or services. IBR specifically disclaims any intent or implication that by submitting its response to the New York Energy Highway RFI we are making a binding offer or bid. Neither IBR, nor New York Energy Highway will be bound by the terms contained in the New York Energy Highway RFI, or the IBR Response, or in any other document, or to enter into any transaction pursuant to or in connection with the New York Energy Highway RFI or otherwise unless they have negotiated definitive written agreements setting forth all of the detailed terms and conditions of the specific transaction(s) (including without limitation credit terms satisfactory to each party in its sole discretion), all necessary management and/or board approvals have been obtained for such agreements, and the such written agreements have been executed and delivered by the respective parties.

Iberdrola Renewables Background Summary

IBR is the world's largest renewable developer, and is a leader in the renewable industry in the U.S. Within its power business, IBR is focused on the development and marketing of clean fuel sources, including wind, as well as solar, biomass, and natural gas-fired generation. Through direct ownership or power purchase agreements, IBR controls over 5,000 MW of wind generation currently in operation and quickly ramping up its solar project development business. IBR is incorporated in the state of Oregon and its U.S. headquarters are located in Portland, Oregon. We also have regional offices in Chicago and Philadelphia.

Our capabilities include the following:

Development: IBR is the second largest wind developer in the United States, pursuing greenfield projects, repowering projects, and acquisitions. It currently has more than 25,000 MW of both wind and solar projects under active development. In addition, IBR is the third largest holder of BLM rights-of-way and is actively pursuing both public and private lands for construction of photovoltaic and concentrated solar power.

Operations: IBR's expert operations and maintenance group currently operates 24-hours a day to oversee the operations of over 5,000 MW of installed wind power capacity in the US. IBR has developed in-house expertise for the maintenance of our turbine fleet and IBR staff is present at each of our wind facilities, providing balance-of-plant operations and maintenance and sometimes full turbine operations and maintenance as well. Our National Control Center allows IBR to deliver better quality products by providing superior management and delivery through our 24-hour remote operations capabilities. IBR is leveraging its operational expertise in wind to expand into other renewable energy technologies.

Forecasting and Resource Analysis: IBR leads the market in its ability to predict wind generation through sophisticated forecasting techniques. For its projects, IBR created a 24-7 wind forecasting group that provides hourly forecasts for each of the wind projects. The hourly forecasts have shown an increase in accuracy, particularly during key ramp periods. IBR's large meteorology group is also responsible for placing sophisticated wind, solar and other climatological measurement tools on project sites and analyzing data to better predict project generation.

Trading: IBR has established robust systems, including its 24-hour real-time and day-ahead desks, to manage renewable energy into short-term markets.

Origination: IBR consistently tailors energy supply contracts to best suit customer's needs, and as a result, a majority of IBR's controlled wind is sold under long-term contracts. IBR regularly carries out power supply transactions with over 50 companies nationwide, including public utility districts, investor owned utilities, electric cooperatives, and federal power marketing administrations.

Diverse Asset Base: The map below represent IBR's combined wind assets, biomass, gas-fired power plants and natural gas storage facilities. The geographical diversity of the project fleet allows IBR to optimize "lessons learned" across to the country and maximize each project's generation capabilities.

North American Assets



2. PROJECT DESCRIPTIONS

ROARING BROOK WIND PROJECT

The Roaring Brook wind project is a highly viable 78 MW project located in Lewis County, New York. Utilizing top tier wind turbines, Roaring Brook is expected to produce over 200,000 MWh of renewable energy and associated renewable energy credits (RECs) each year. The Project is fully permitted, has 100% land control and could achieve commercial operations within one year of signing a power purchase agreement. Please see the table below for additional information related to the project. Roaring Brook is located 60 miles North of Utica, NY in the Town of Martinsburg, Lewis County. The Project will be installed primarily on land that was previously forested along the Tug Hill plateau with an elevation of approximately 1900 ft ASL. The Project is located on 44 parcels of leased private land totaling approximately 5,280 acres. The Project will involve the upgrade of 10 miles of existing unpaved forest roads, plus portions of two limited maintenance seasonal public roads (French and Flat Rock Roads), construction of 5 miles of new gravel access roads, installation of approximately 13 miles of buried electrical collection lines, one permanent, free-standing 100-meter tall meteorological tower, and a 4,000 square foot operation and maintenance building.

In order to deliver power to the New York State power grid, the Project will construct a 34.5 kV electrical interconnection line and substation/point of interconnection facility located adjacent to the National Grid Taylor-Boonville 115 kilovolt (kV) transmission line near Lee Road, Town of Martinsburg. The interconnection route will be comprised of approximately 5.5 miles of buried electrical line, 3 miles of overhead line on 61 wooden pole structures. The Project has an Interconnection Agreement with the NYISO and has been placed into suspension. The Project has received its Local, State and Federal permits. The Project successfully completed the New York State Environmental Quality Review Act (SEQRA) approval process in October 2009. As part of SEQRA, we have completed two (2) years of avian and bat studies, sound study, cultural resource assessment, geotechnical evaluation, wetland delineations, viewshed analysis, water quality assessment and preparation of a storm water pollution prevention plan. The Town of Martinsburg maintains a zoning ordinance and the Project is located within the Town's Wind Overlay District. The Project obtained a Special Use Permit from the Town in November 2010.

| Project Details: Roaring Brook Wind Project | |
|--|-------------------------------|
| Status: | Late Stages of Development |
| Project Location: | Lewis County, New York |
| Type of Project: | Wind Generator |
| Capacity (MW): | 78 MW |
| Projected In-Service Date | 12 months after signing a PPA |
| Permitting Status: | In progress |
| Interconnection Status: | In Progress |
| Site Control: | Complete |
| Financing: | Complete |

HORSE CREEK WIND PROJECT

The Horse Creek Wind project is a 126 MW - 376 MW project located in Jefferson County, New York. Utilizing top tier wind turbines, Horse Creek is expected to produce as much as 1,000,000 MWh of renewable energy and associated renewable energy credits (RECs) each year. The Project is in the permitting process, has 70% land control and could achieve commercial operations within one year of signing a power purchase agreement. Please see the table below for additional information related to the project. The Project is located 35 miles North of Watertown, NY in the Towns of Clayton, Brownville, Orleans and Lyme on land that is being used or was previous used for agriculture. The Project has completed a significant amount of environmental studies and is about half way through the development process with changes to local zoning requirements requiring design changes which are currently underway.

The Project is located on leased private land totaling approximately 10,000 acres with additional land to be leased. At a minimum, the Project will involve the construction of 35 miles of new gravel access roads, installation of approximately 30 miles of buried electrical collection lines, two permanent, free-standing 100-meter tall meteorological tower, and a 4,000 square foot operation and maintenance building. In order to deliver power to the New York State power grid, the Project will construct a 34.5 kV electrical interconnection line and substation/point of interconnection to the Coffeen Street-Thousand Islands 115kV line. The Project has entered the NYISO 2012 Class Year Study Process and will continue to advance the development of the overall project with a goal of 2014 construction ready. The project currently has an active SEQRA application; however, that was placed on hold because of ongoing changes with the local zoning ordinance. We are currently evaluating the permitting options for the project since the introduction of Article X.

| Project Details: Horse Creek Wind Project | |
|--|---|
| Status: | Middle Stages of Development |
| Project Location: | Jefferson County, New York |
| Type of Project: | Wind Generator |
| Capacity (MW): | 126 MW - 376 MW |
| Projected In-Service Date | December 2014 |
| Permitting Status: | In progress |
| Interconnection Status: | In Progress, SIS Complete, FS In Progress |
| Site Control: | 70% Complete |
| Financing: | Complete |

STONE CHURCH WIND PROJECT

The Stone Church wind project is a 150 MW project located in St. Lawrence County, New York. Utilizing top tier wind turbines, Stone Church is expected to produce over 400,000 MWh of renewable energy and associated renewable energy credits (RECs) each year. The Project is in the permitting process, has 50% land control and could achieve commercial operations within one year of signing a power purchase agreement. Please see the table below for additional information related to the project. Stone Church is located 40 miles north east of Watertown, NY in the Towns of Hammond and Morristown, St. Lawrence County. The Project will be installed primarily on land that is being used or was previous used for agriculture. The Project is located on leased private land totaling approximately 10,000 acres.

The Project will involve the construction of 35 miles of new gravel access roads, installation of approximately 30 miles of buried electrical collection lines, two permanent, free-standing 100-meter tall meteorological tower, and a 4,000 square foot operation and maintenance building. In order to deliver power to the New York State power grid, the Project will construct a 115 kV electrical interconnection line and substation/point of interconnection facility located near the McIntyre 115 kilovolt (kV) substation, Town of Oswegatchie. The Project does not currently have an active NYISO queue position or an active permit application with Federal, State or Local Agencies. The project has completed one year of avian and bat studies in accordance with the DEC work plan for the project along with preliminary sound studies.

| Project Details: Stone Church Wind Project | |
|---|-------------------------------|
| Status: | Early Stages of Development |
| Project Location: | St. Lawrence County, New York |
| Type of Project: | Wind Generator |
| Capacity (MW): | 150 MW |
| Projected In-Service Date | December 2016 |
| Permitting Status: | In progress |
| Interconnection Status: | In Progress |
| Site Control: | 50% Complete |
| Financing: | Complete |

NORTH RIDGE WIND PROJECT

The North Ridge wind project is a 100 MW project located in St. Lawrence County, New York. Utilizing top tier wind turbines, North Ridge is expected to produce over 250,000 MWh of renewable energy and associated renewable energy credits (RECs) each year. The Project is in the permitting process, has 70% land control and could achieve commercial operations within one year of signing a power purchase agreement. Please see the table below for additional information related to the project. North Ridge is located on The Project is located 10 miles east of Potsdam, NY in the Towns of Hopkinton and Parishville, St. Lawrence County. The Project will be installed primarily on land that is used for agriculture and is located on leased private land totaling approximately 8,000 acres.

The Project will involve the construction of 30 miles of new gravel access roads, installation of approximately 25 miles of buried electrical collection lines, two permanent, free-standing 100-meter tall meteorological towers, and a 4,000 square foot operation and maintenance building. In order to deliver power to the New York State power grid, the Project will construct a 34.5 kV electrical interconnection line and substation/point of interconnection facility located adjacent to the Nicholville-Parishville 115 kilovolt (kV) transmission line, Town of Hopkinton. The Project is currently in the SRIS phase of the NYISO study process. The Project does not have any current Federal, State, or Local Permit applications filed.

| Project Details: North Ridge Wind Project | |
|--|-------------------------------|
| Status: | Early Stages of Development |
| Project Location: | St. Lawrence County, New York |
| Type of Project: | Wind Generator |
| Capacity (MW): | 100 MW |
| Projected In-Service Date | December 2016 |
| Permitting Status: | In progress |
| Interconnection Status: | In Progress |
| Site Control: | 70% Complete |
| Financing: | Complete |

BONE RUN WIND PROJECT

The Bone Run wind project is a 68 MW – 130 MW project located in Cattaraugus County, New York. Utilizing top tier wind turbines, Bone Run is expected to produce at a minimum over 170,000 MWh of renewable energy and associated renewable energy credits (RECs) each year. The Project is in the permitting process, has 10% land control and could achieve commercial operations within one year of signing a power purchase agreement. Please see the table below for additional information related to the project. Bone Run is located on in the Towns of Randolph and South Valley with the majority of the land actively being logged by the private landowners. The project is in the early stages of land acquisition, meteorological evaluation and determining the necessary environmental studies to be completed and the proposed project schedule. The Project does not currently have a queue position with the NYISO and does not have any active Federal, State, or Local permit applications filed.

| Project Details: Bone Run Wind Project | |
|---|------------------------------|
| Status: | Early Stages of Development |
| Project Location: | Cattaraugus County, New York |
| Type of Project: | Wind Generator |
| Capacity (MW): | 68 MW - 130 MW |
| Projected In-Service Date | December 2016 |
| Permitting Status: | In progress |
| Interconnection Status: | In Progress |
| Site Control: | 10% Complete |
| Financing: | Complete |

3. ADDITIONAL INFORMATION

PERMIT/APPROVAL PROCESS

Federal, State and local permits needed to develop and operate the project

With regard to federal permits required, they are dependent on each specific sites habitat and environmental conditions. The required permit is typically a wetlands permit; however, in the case of Horse Creek we may be required to obtain an incidental take permit for the Indiana Bat. All project development going forward (with the exception of Roaring Brook which is fully permitted) will fall under the new Article X State Siting Guidelines. It is critical that the Article X process allows for consistency and timeliness in order for wind projects to meet the commercial operation dates mentioned above.

Key uncertainties in federal, State and local project permitting, and suggestions for how such uncertainties can be addressed

Our biggest concern with the Article X process is related to the current local laws that municipalities have in place. Many of the laws are unreasonable and burdensome and do not allow for wind development. It is critical that we know early on in the process what, if any sections of each zoning law would be considered requirements for siting the project. Once this determination is made, we need consistency in the requirements along with the time associated with completing said requirements.

PROJECTED IN-SERVICE DATE AND PROJECT SCHEDULE

Once a project is fully permitted, commercial operations can typically be reached within 12 months from the start of construction.

CONSTRUCTION

IBR has relationships with industry-leading turbine suppliers to meet the needs of each project. IBR has a history of working successfully with local landowners and community groups to ensure the benefits of a major renewable energy project have a positive impact on local communities including employment, education and environment.

OPERATIONAL

Wind projects have minimal down time and, when necessary, scheduled maintenance is done in non-operational hours to prevent any loss of generation. IBR utilizes its national control center to operate and monitor each turbine 24 hours per day to maximize safety and efficiency in operations.

SOCIO-ECONOMIC

Each wind project requires up to 6 full time employees and up to 130 temporary construction jobs. Each job created will add value to the local area during and after construction. In addition, tax benefits to local areas where wind projects are located create opportunities for counties to improve their services and financial position for the benefit of those living in each county. Wind projects are typically located in rural areas far from developed land and have little impacts on real estate values.

ENVIRONMENTAL

Adding additional IBR renewable generation to the NY generation resource mix will reduce emissions from electricity generation and alleviate pollution currently being contributed by non-renewable technologies. Each of the projects listed above would be constructed with the high standards IBR constructs each renewable project. IBR performs mitigation as necessary to minimize impacts on local wildlife habitat. Environmental surveys, studies and reports are completed prior to construction to minimize impacts, if any, on surrounding habitat and sensitive environmental areas and species.

PROJECT CONTRACT/REQUEST FOR PROPOSAL (RFP) STATUS

Roaring Brook was submitted into the NYSERDA November 2011 RFP.

4. PROJECT JUSTIFICATION

IBR is happy to provide the overview of projects currently in development described above. Each of the projects provided would contribute to multiple New York Energy highway Objectives and create a better, more efficient energy future for the region. Please see the objectives listed below with an overview of the benefits of addition Iberdrola wind generation to the New York Energy Highway.

Encourage Development of Renewable Generation

The Project described above, totaling 772 MWs of renewable generation, are in the development phase and would require a Power Purchase Agreement to enter into construction and ultimately, operations. Each of the projects provided would help meet New York's goal of 30% renewable generation and provide a clean supply of energy and RECs into the market.

Increase Efficiency of Power Generation

Adding wind generation from IBR will provide New York with a clean renewable supply of energy to the New York Energy Highway. IBR monitors and controls each wind turbine across North America from its National Control Center in Portland Oregon, where operators are managing each turbine at over 50 wind projects for the highest efficiency and output possible.

Create Jobs and Local Income

The following are estimates based on IBR's potential project build in the region.

- Long-Term Jobs ranging between 35-45 permanent employees with the ANNUAL salary ranging between \$3m-\$4m
- ANNUAL PILOT payments ranging between \$4.8m-\$7m
- ONE-TIME building permits and town and county fees between \$1.7m-\$3m
- ANNUAL special district taxes ranging between \$150,000-\$500,000
- ANNUAL lease payment ranging between \$2.2m-\$3.2m
- ANNUAL Easement Payments \$500,000-\$1m
- ONE-TIME Easement Payments during construction ranging between \$2.5m-\$3m
- ONE-TIME In-State consumption of goods during construction approx. \$16m (approx. \$3m-\$4m per project)
- ONE-TIME In-State Materials during construction approx. \$33m (approx. \$6m per project)
- Temporary Employees during construction ranging between 650-1000 employees with salaries in excess of \$33m (approx. \$6m per project)

Contribute to Environmental Sustainability in NY

Adding additional IBR renewable generation to the NY generation resource mix will reduce emissions from electricity generation and alleviate pollution currently being contributed by non-renewable technologies. Each of the projects listed above would be constructed with the high standards IBR constructs each renewable project. Environmental surveys, studies and reports are completed prior to construction to minimize impacts, if any, on surrounding habitat and sensitive environmental areas and species.

Apply advanced technologies that benefit system performance and operations

IBR is an industry leader in monitoring and operating projects nationwide. The National Control Center, where all IBR's turbines are controlled and monitored, increases efficiency of operations as well as safety for our on-site workers. IBR implements the best technology available to meet the needs of over 50 customers across the US.

Zero Emissions

Wind facilities do not have emissions and provide clean renewable energy generated from a project in New York State, supporting New York Jobs and providing a more sustainable environmental future and air quality for New York.

Hedge Against Prices

Investing in renewable generation through fixed-price long-term power purchase agreements provides a hedge against long term energy market changes that may increase the costs of energy supplies. Increased regulation in the gas and coal industries could lead to higher energy prices over the next 20 years and taking advantage of competitively priced wind within New York State provides increased long term price certainty.

Adhere to Market Rules

Each proposed project would go through the NYISO interconnections process and comply with any and all applicable laws in the interconnection process.

Financial

IBR is backed by its corporate guarantor, Iberdrola Renewables Holdings, Inc. and typically balance sheet finances each project.

5. POLICY PROPOSAL

In order to realize the wind energy project benefits outlined in this proposal two public policy considerations will be essential: (1) investments in the state's transmission grid to enable delivery of wind resources from up-state zones to down-state zones which make up the majority of the state's electricity demand, and (2) long-term power purchase agreements with reliable counterparties (essentially the state's investor-owned utilities) which will enable the cost-effective financing of wind resources.

Background

New York's Renewable Portfolio Standard ("RPS") requires the state to receive over 10 million megawatt hours ("MWhs") from new renewable resources by 2015 (9,774,464 MWhs shall be met by new main tier resources like Iberdrola Renewables' utility scale wind projects referenced in this proposal). The state was already starting from a strong renewable energy base, when it adopted the RPS in 2004. The combination of existing and new renewable energy projects and the energy efficiency portfolio standards means that thirty percent of the state's electricity supply will come from renewable sources if the RPS goals are met.

The New York Renewable Portfolio Standard Market Conditions Assessment Final Report identified significant benefits from the RPS, including reductions of wholesale electricity prices far in excess of the retail price impacts of NYSEDA's renewable energy certificate ("REC") purchases. For example, "Summit Blue's analysis estimates that the reduction in wholesale electricity prices in the year 2010 are likely to be approximately \$2/MWh. Each MWh of renewable energy added has the effect of lowering electricity costs by approximately \$100/MWh, significantly more than the \$15 or more paid per MWh for the REC."¹

NYISO's "Growing Wind: Final Report of the NYISO 2010 Wind Generation Study" reinforced the wholesale price reduction benefits of wind in its examination of various wind penetration scenarios. "As the amount of wind generation increases, the overall system production costs decrease. For the 2013 study year, the production costs drop from the base case total of almost \$6 billion to a level of approximately \$5.3 billion for the 6,000 MW wind scenario. This represents a drop of 11.1% in production costs. For the 2018 study year, the production costs drop from the base case total of almost \$7.8 billion to a level of approximately \$6.5 billion for the 8,000 MW wind scenario. This represents a 16.6% drop in production costs."²

As of the latest NYSEDA report, the state has only achieved 47% of its 2015 RPS goal (48% of the main tier goal).³ This means in order to reach the RPS goal and to maximize the benefits of renewable energy investments not just for the 2015 goal, but beyond, including the significant investments identified in the NYISO's "Growing Wind" study, additional policy measures should be taken as outlined here. Transmission investments and power purchase agreements will be essential new policies to maximize New York's renewable energy potential.

¹ New York Renewable Portfolio Standard Market Conditions Assessment Final Report. Prepared for The New York State Energy Research and Development Authority. Prepared by Summit Blue Consulting, LLC and Nexus Market Research. p. 4-155

² Growing Wind: Final Report of the NYISO 2010 Wind Generation Study. September 2010. P. vii.

³ The New York State Renewable Portfolio Standard Performance Report. New York State Energy Research Development Authority. 2011 Report. p. 9

Transmission Investments

There has been significant analysis of the state's transmission needs, most recently the New York State Transmission Assessment and Reliability Study ("STARS"), Phase II Study Report. This study reported the following relevant conclusions as it relates to transmission and upstate wind resources:

- (1) **"New transmission will unbundle wind resources:** The NYISO has identified as part of their 2010 Wind Generation Study that as part of the integration of 6,000 MW wind resources nearly 9% of the wind energy production in three upstate areas would be "bottled" or be undeliverable to the transmission system. The study identifies and models the impacts of the underlying local transmission system upgrades that will allow for the nearly full unbottling of these resources. The upgrades allow for the full utilization of these resources which have been constructed under the State's Renewables Portfolio Standard. The STARS study assumed that these upgrades were in place. The approximate cost of these upgrades range from \$75 to \$325 million."⁴

This finding is supported by the following recommendation from the STARS report:

"To meet state policy objectives of increased renewable resources, the underlying local upgrades identified in the NYISO 2010 Wind Generation Study should be constructed based on a review of the status of the development of the wind projects in the three upstate areas identified in that study. This would lead to greatly improved deliverability of wind resources and reduced emissions."⁵

"The NYISO Wind Study, which was completed in September 2010 analyzed the impact of the integration of varying amounts of wind resources ranging from a total of 3,500 MW to 8,000 MW. The primary finding of the report was that wind energy can supply reliable clean energy at a very low production cost to the New York power grid. It should be noted that in many cases the transmission facilities that were analyzed for upgrade have also been identified as potentially requiring replacement based on condition assessment."⁶

A list of these upgrades can be found in "Growing Wind: Final Report of the NYISO 2010 Wind Generation Study" beginning on page 76.

- (2) **Cost effective incremental transmission upgrades:** "Based on the overlay of the condition assessment work and the STARS trials there are upgrade projects that provide increased transmission capability at a relatively modest cost. Projects such as the upgrade from 230 kV to 345 kV of the Moses to Marcy lines, Marcy to Rotterdam section of the Marcy to New Scotland line and the Oakdale to Fraser line are good examples. Again, these lines would be located within or along existing transmission corridors."⁷

Iberdrola Renewables strongly recommends proceeding expeditiously to make these upgrades and notes that the STARS reports indicates dual benefits to many of these upgrades resulting from the requirement to replace these facilities based on their condition. In other words, many of these facilities, according to the STARS report, are at the end of their useful life.

⁴ New York State Transmission Assessment and Reliability Study, Phase II Study Report. April 20, 2012. P. 6.

⁵ Ibid. P. 7.

⁶ Ibid. P. 42.

⁷ New York State Transmission Assessment and Reliability Study, Phase II Study Report. April 20, 2012. P. 6.

Note that while these upgrades are essential to maximize future wind energy investments, accessible bulk north-south transmission lines will maximize wind energy economic benefits by enabling upstate projects to provide energy to downstate zones with greater demand. This point is reinforced in the findings of the NYISO Wind Generation Study referenced above. “Although the addition of wind to the resource mix resulted in significant reduction in production costs, the reduction would have been even greater if transmission constraints between upstate and downstate were eliminated. These transmission constraints prevent lower cost generation in upstate New York from displacing higher costs generation in southeast New York.”⁸ Thus, investments in north-south bulk transmission are essential to maximize the economic benefits of wind generation for all rate-payers.

North to South Bulk Transmission Investments

In addition to the local upgrades noted above new, bulk transmission from north to south will be essential to maximize investments in and benefits of upstate wind energy resources. Iberdrola Renewables stresses that these investments must have two fundamental characteristics to maximize New Yorker’s benefits and ultimately to be financed and built:

- (1) North to south bulk transmission investments must allow for upstate resources, including commercial scale wind energy, to access them. Transmission investments which do not do this, which, for example, are DC ties which bypass upstate resources, will not maximize jobs and investment in the state and could subject the state to reliance on imports.
- (2) Bulk transmission lines cannot be solely funded by generators. Numerous ISO’s have examined transmission financing scenarios in which the beneficiaries of transmission investments pay. These include the Competitive Renewable Energy Zones in Texas, the Southwest Power Pool’s Highway-Byway approach in which beneficiaries pay for transmission investments 345 kV and greater, and the Midwest Independent System Operator’s Multi-Value Projects in which beneficiaries pay for transmission upgrades based on the value of the benefits they receive.

We strongly encourage investments in essential north-south bulk transmission to include these key components: (1) access for upstate wind projects; (2) payment by project beneficiaries.

Long-Term Power Purchase Agreements

The most effective incentive to encourage significant new construction of commercial scale wind farms are long-term power purchase agreements with creditworthy counterparties, such as the state’s investor owned utilities. Iberdrola Renewables strongly encourages the state to undertake a program modeled on Massachusetts’s highly successful Green Communities Act which requires the state’s utilities to contribute to meeting some percentage of the state’s renewable energy goals through long-term, bundled (energy and RECs) power purchase agreements.

The Green Communities Act required the state’s investor owned utilities to purchase three percent of their expected load from eligible renewable resources. The most successful procurement, conducted by NSTAR Electric Utility (“NSTAR”) required the competitive sourcing of winning offers. Iberdrola Renewable strongly recommends that procurements be competitive in nature. The Green Communities Act defined a long-term contract as a contract with a term of 10 to 15 years. Similar to NYSERDA’s current process the competitive

⁸ Growing Wind: Final Report of the NYISO 2010 Wind Generation Study. September 2010. P. x.

solicitation was weighted 80 percent for price and 20 percent for non-price factors. Evaluation of the proposals was conducted in concert with the state's Department of Energy Resources.

The procurement performed by NSTAR was highly competitive, receiving proposals from 74 eligible projects totaling 2,513 MW and representing 7.5 million MWh.⁹ The high level of competition led to very cost effective offers. "The costs for Energy and RECs under the contract are lower than the forecasted market price for Energy and RECs during all years of the contract. Overall, the cost of Energy and RECs under the contract are lower than forecasted market prices by \$15 million, nominal over the life of the contract."¹⁰

While New York's current method for promoting main tier renewable resources, including commercial scale wind farms, 10-year fixed prices REC contracts executed by NYSERDA, is far preferable to the exceedingly short-term and spot market REC purchases in most other restructured markets it is not as effective for either developers or rate-payers as the long-term, bundled contracts executed by NSTAR as a result of Green Communities Act's requirements.

Long-term, bundled contracts benefit developers by making it easier, and more affordable to finance their projects. This benefits rate-payers by lowering the final cost renewable energy projects must achieve to be financed (an example will be provided below) and provides a much better hedge for rate-payers from rising power prices than the current REC only deals. For example, should energy prices rise above project developers estimates for their NYSDERA offers, rate-payers would end up paying more for RECs than they otherwise would had projects bid a bundled energy and REC price.

NYSERDA provides a fixed 10-year REC contract which is beneficial; however, developers must still either rely on spot market prices for wholesale energy or contract with third-parties, such as banks, for the energy portion of a wind farm's output. Particularly in the current depressed energy price environment third-party hedges are either difficult to obtain or significant value must be provided to the third party. All things being equal the additional risk resulting from these challenges in the energy market means that entities submitting offers to main tier solicitations will need to bid higher than they otherwise would if they could offer a "bundled" price for energy and RECs to a reliable counterparty.

To make investments of the size required to meet New York's RPS and maximize the state's wind energy potential, wind developers will require assurance that they will recover their capital and make an adequate return on their investment. What is considered an adequate return will be determined, in part, by the risk of the revenue stream associated with that investment. For example, projects typically have a different return requirement for 1) fully merchant projects (which in the current market environment a company may not even invest in), 2) partially merchant projects (such as those in New York which can only sell RECs for 10-years), or 3) projects with long-term, bundled power purchase agreements ("PPAs"). The return required for a partially merchant project can be meaningfully higher than that required for a project with a long-term, bundled PPA. The practical implication of a higher return requirement is that, for the same project, expected power and REC prices will need to be significantly higher to trigger an investment.

Ratepayers can benefit from lower prices resulting from reduced renewable energy investment costs. The following is an example to demonstrate this point. (Note that for commercial reasons, the example is not a real project and uses fictional data points, but nonetheless illustrates the point that projects with long-term, bundled PPA's benefit ratepayers).

⁹ NSTAR Electric Company. Direct Testimony of James G. Daly. Exhibit NSTAR-JGC-1. D.P.U. 11-06. P. 13

¹⁰ Ibid. P. 21-22.

Example: Benefits of Long-Term Contracts

Assumptions

1. Difference between a partially merchant project's (REC contract, energy sold on the spot market) Weighted Average Cost of Capital ("WACC") and a project with a long-term, bundled power purchase agreement's WACC: 75-100 basis points
2. 75-100 basis points equals approximately \$7 to \$12 per MWH
3. A 100 MW project at a 33% capacity factor; this project will produce 289,000 MWhs annually. Over a fifteen year period the project will produce 4,335,000 MWhs.

Total rate-payers savings equals: $4,335,000 \times \$7 \text{ to } \$12 = \$30,345,000 \text{ to } \$52,020,000$.

As noted, while the NYSEDA 10-year REC contracts are significantly better than the very short-term procurements found in other restructured markets they are still failing to attract the number of investments necessary to meet the 2015 RPS goal as witnessed by the state only currently meeting 48% of its main-tier goal with approximately two years to go, despite working towards the goal for the last eight years. The NSTAR experience in Massachusetts demonstrates that long-term, bundled contracts with utility counterparties will attract significant competitive offers. Given the significant amount of main-tier renewables still to be acquired to meet the 2015 RPS goals we recommend competitive long-term, bundled solicitations for main-tier renewables with utility counterparties be pursued.

Conclusion

Iberdrola Renewables commercial wind energy project pipeline provides the opportunity for significant rural economic development, renewable energy and its commensurate environmental benefits, and contributions to reduction in wholesale power price reductions. However, in order to maximize the potential not just of Iberdrola Renewables projects, but the state's wind energy potential more generally, it will be essential to adopt this proposal's recommendations on transmission investments and power purchase agreements.

Iberdrola Renewables Recommendations:

- 1. Completion of transmission upgrades identified in NYISO's "Growing Wind" Study.**
- 2. Completion of cost-effective transmission upgrades identified in the STARS report.**
- 3. Plan for and execute implementation of north-south bulk transmission which can serve upstate wind resources. Cost allocation for the transmission project(s) should be on instituted on a beneficiary pays basis.**
- 4. Investor owned utilities, in consultation with NYSEDA and the PSC, should issue request for proposals ("RFPs") for competitive, long-term, bundled contracts with renewable generators. The RFPs would assist NYSEDA in meeting the state's 2015 main-tier RPS goals.**