

SECTION 83D

REQUEST FOR PROPOSAL APPLICATION FORM

APPLICANT INFORMATION



Applicant: Downeast Wind, LLC

Contact: Edward du Moulin

Address: 310 4th St. NE, Suite 200

Charlottesville, VA 22902

Phone: [REDACTED]

Email: [REDACTED]



SECTION 1 OF APPENDIX B TO THE RFP
CERTIFICATION, PROJECT AND PRICING DATA

The Certification, Project and Pricing Data (“CPPD”) document has been provided in Microsoft Excel format as requested in Appendix B.



SECTION 2 OF APPENDIX B TO THE RFP EXECUTIVE SUMMARY OF THE PROPOSAL (INCLUDING THE BASE PROPOSAL AND ANY ALTERNATIVE PROPOSALS)

The bidder is required to provide an executive summary of the project proposal that includes a complete description of the proposed generation and/or transmission bid, the proposed contract term and pricing schedule, and other factors the bidder deems to be important.

Introduction

Apex Clean Energy Holdings, LLC ("Apex" or "Apex Clean Energy"), is pleased to provide Fitchburg Gas & Electric Light Company d/b/a Unitil ("Unitil"), Massachusetts Electric Company and Nantucket Electric Company d/b/a National Grid ("National Grid"), NSTAR Electric Company and Western Massachusetts Electric Company d/b/a Eversource ("Eversource"), collectively, "Distribution Companies," in coordination with the Commonwealth of Massachusetts ("Commonwealth") and the Massachusetts Department of Energy Resources ("DOER"), with the enclosed proposal for wind energy and/or RECs from Downeast Wind, LLC ("Downeast" or the "Project").

Notwithstanding the foregoing or anything to the contrary in the RFP or accompanying attachment, including without limitation all statements in Appendix D, any transaction contemplated by this proposal remains subject to the terms of a definitive, duly authorized, and fully executed agreement between bidder and its counterparty in their sole discretion.

Proposed Pricing

Apex proposes the following pricing structures and bid prices:

Capacity Offered	Product	Contract Length	Escalation	Busbar (POI) Settlement
■	■	■	■	■
	■	■	■	■

Please see Part IV of the accompanying Certification, Project and Pricing Data (CPPD) form for complete pricing details and bid structure.

Project Highlights

Downeast is a ■ MW advanced-stage development wind project located in the Town of Columbia and the Unorganized Territory of T-18, Washington County, Maine. The Project has an expected COD of ■. The Project is located within the Independent System Operator of New England ("ISO-NE") footprint and will interconnect into the grid pursuant to a signed large generator interconnection agreement ("LGIA") with ISO-NE and Emera Maine.



Project Capacity	[REDACTED] MW
Location	Washington County, Maine (ISO-NE)
Estimated COD	[REDACTED]
Wind Resource (NCF)	[REDACTED]
Technology	[REDACTED]
Estimated Annual Production	[REDACTED]
Interconnection	Downeast will interconnect into the grid pursuant to a signed large generator interconnection agreement (“LGIA”) with ISO-NE and Emera Maine (LGIA-ISONE/EMERA-16-01). [REDACTED].
Site Control	The Project encompasses approximately [REDACTED] acres of land under long-term lease agreements [REDACTED]. The Project site is located on Northern New England [REDACTED], provides significant benefits to agricultural landowners, and has strong local community support.

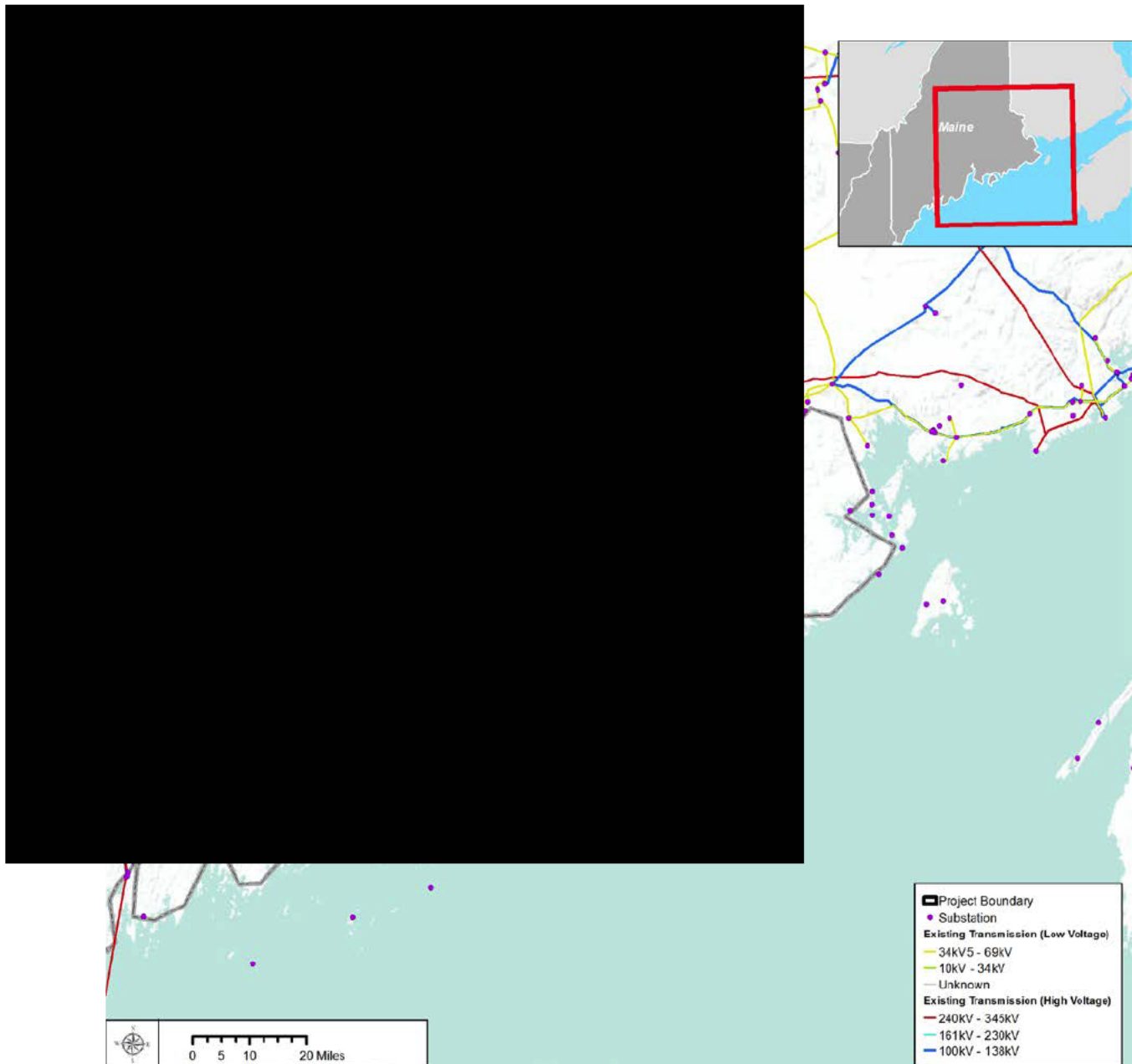
The Project is highly advanced and can provide a low cost of clean energy, with a LGIA in place, strong community support, full site control, and progress toward receiving a full project permit. [REDACTED] the Project has commissioned a third-party analysis to show deliverability in the real-time energy market across the load zone and to meet the deliverability objectives.

Thank you for the opportunity to deliver cost-competitive Clean Energy Generation and/or RECs.

M. Gordon



Project Location – General Overview



SECTION 3 OF APPENDIX B TO THE RFP OPERATIONAL PARAMETERS

- 3.1 *Maintenance Outage Requirements – Specify partial and complete planned outage requirements in weeks or days for all generation facilities and transmission facilities. Also, list the number of months required for the cycle to repeat (e.g., list time interval of minor and major overhauls, and the duration of overhauls).*

The facility's turbines will require maintenance at an average interval of twice annually with the exception of the first year, during which some components will require additional maintenance. Total scheduled service time for each turbine will be limited to approximately [REDACTED].

Operations will schedule major maintenance on a [REDACTED] frequency, requiring the site to stay offline for [REDACTED].

Corrective O&M will be conducted as needed and as quickly as possible with on-site personnel and equipment, and regional resources will be utilized as necessary. All turbine vendors under evaluation will be responsible for service and repair under warranty contracts for a minimum of ten years. During this period the turbine vendor will maintain on-site staff for on-call, emergency, and scheduled work. These personnel will work under the supervision of and in addition to the Project's asset management and operations staff.

All turbine vendors under consideration have a strong presence and operations capability in the region and will be capable of augmenting on-site staff with technicians from nearby projects or regional service centers. Operating procedures will be established to ensure all scheduled maintenance will be performed during periods of low demand or at times that coincide with other scheduled outages or low- to no-wind periods. A summary of industry standard service intervals is presented in the table below.

Summary of General Maintenance Requirements and Intervals for Turbines

Item and Interval	120 Days*	6 Months	Annually
Cleaning and General Inspection	[REDACTED]	[REDACTED]	[REDACTED]
Check Oil Levels, Yaw, Gearbox, Pitch Drives			
Check Yaw Puck Depth			
Check Anemometer and Wind Vane			
Check Hub Pitch Battery Voltage			
Perform Visual Blade Inspection			

Gearbox Oil Filter and Sample
Pitch Control Slip Ring Inspect and Clean
Rotor Brake Inspect and Adjust
Hydraulic Brake Power unit Filter and Bleed
Inspect or adjust Generator Coupler and Alignment
Inspect, Clean, or Replace Generator Slip Ring, Brushes
Inspect Controllers, Cabinets, Converters, Connections
Inspect Blade Bearings
Inspect and Service Pitch Components

**some items may apply to first year only*

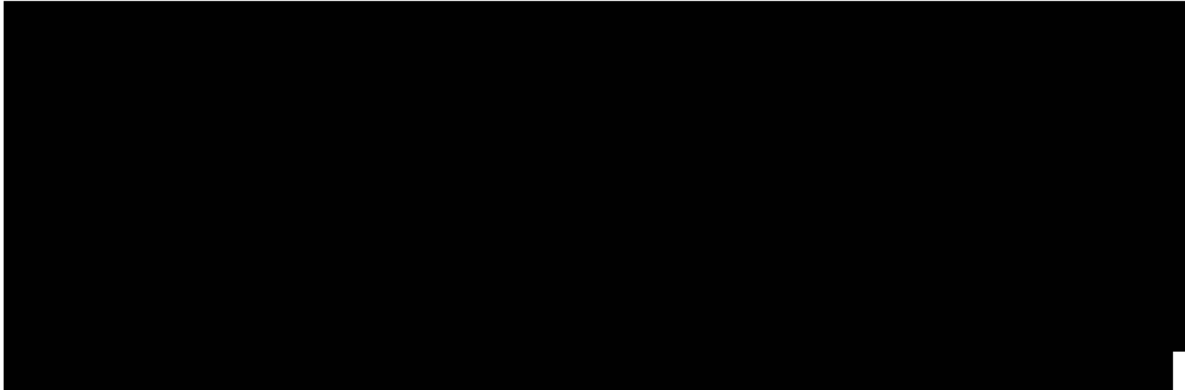
Facility outages may also occur due to scheduled or unscheduled maintenance of the Project collection system, the Project substation, or on the short transmission line from the Project substation to the Project's point of interconnection. Scheduled maintenance for this infrastructure is planned to cause outages scheduled during the least critical or valuable periods. Total scheduled outage time for this infrastructure is expected to accumulate to less than [REDACTED] of time leading to a scheduled auxiliary equipment availability [REDACTED]

The Project will plan to enter into on-call agreements or retain appropriately trained on-site personnel and equipment in order to ensure that preventive and corrective maintenance to auxiliary equipment does not accumulate on an annual basis to more than [REDACTED] of time. This should result in an availability of [REDACTED] due to non-turbine infrastructure. Auxiliary equipment maintenance will partially overlap periods of turbine downtime, resulting in actual availability in excess of estimates.

- 3.2 *Operating Constraints – Specify all the expected operating constraints and operational restrictions for the project (i.e., limits on the number of hours a unit may be operated per year or unit of time). If the bid includes firm deliveries, list the anticipated situations and frequency of interruptions of transmission sources which would affect power deliveries.*

Operations will not apply any operating restrictions to equipment unless instructed to do so by the Market Participant or Transmission Owner.





3.3 *Reliability – Describe how the proposal would provide enhanced electricity reliability to Massachusetts, including its impact on transmission constraints.*

Increasing the amount of long-term energy in the Soliciting Parties Portfolios through a contract with the Downeast [REDACTED] creates cost certainty for a longer term than what conventional fuel-based generation may offer. Downeast will make commercially reasonable efforts to participate in market wide capacity events and qualify for the Forward Capacity Markets.

3.4 *Moderation of System Peak Load – Describe how the proposal would contribute to moderating system peak load requirements and provide the following information:*

- i) *Estimated average output for each summer period (June- September) from 1:00 – 6:00 pm*
- ii) *Estimated average output for each winter period (October-May) from 5:00 – 7:00 pm*

[REDACTED] A table of estimated average outputs for the Project during the identified periods is included below:

	Output Period	Estimated Average Hourly Generation (MWh/h)
Summer Peak	June 1–6 PM	
	July 1–6 PM	
	August 1–6 PM	
	September 1–6 PM	
Winter Peak	October 5–7 PM	
	November 5–7 PM	
	December 5–7 PM	
	January 5–7 PM	
	February 5–7 PM	
	March 5–7 PM	
	April 5–7 PM	
	May 5–7 PM	

3.5 *Development Stage of all physical aspects of the bid – Describe whether the project is in operation, in construction or in the development phase.*

- (a) *If in operation, when did the project achieve commercial operation*
- (b) *If in construction, when did construction commence and what are the projected dates for initial testing and commercial operation.*
- (c) *If the project is partly in one development stage and partly in another, please explain in detail the status of the project.*

Downeast is a [REDACTED] project with [REDACTED] wind turbines. [REDACTED]

[REDACTED] The Project is currently in an advanced development stage. [REDACTED]

The Project completed the ISO New England System Impact Study (**Attachment XVI – 6.7. System Impact Study**) [REDACTED]. The LGIA No. LGIA-ISONE/EMERA-16-01 was executed with ISO-NE and Emera Maine on September 2, 2016. [REDACTED]

[REDACTED]

The Project has performed analysis on the following [REDACTED]:

- Federally licensed (FCC) and fixed radio frequency (RF) facilities. Please refer to **Attachment I – 3.5. Evans Engineering Study**;
- Obstacle identification and clearance surfaces in accordance with FAA orders, handbooks and advisory circulars. Please refer to **Attachment II – 3.5. CAG Study**;
- Review with Department of Defense siting clearing house, Eastern Air Defense Sector/DOS, and HQ NORAD J3. Please refer to the emails in **Attachment III – 3.5. Eastern Air Defense and Attachment IV – 3.5. NORAD**.

[REDACTED]

Critical Milestone Schedule:

Task Name	
> Land/site control	[REDACTED]
> Meteorology/Resource Assessment	
> Interconnection	
> Project layout	
> Environmental	
> Permitting	
Engineering	
> Commercial/Financial	
> Procurement	
> Construction	
Commercial Operations Date	

Please see **Attachment XIX – 10.1. Detailed Project Schedule** for more detailed information.

If the proposed project is an expansion, repowering, environmental investment or other modification of an existing Facility, please describe the project in detail, the total cost and cost on a \$/kW basis specifying the existing project and the proposed expansion, repowering or other modification. Indicate any incremental or decremental capacity.

Not applicable as Downeast is a development project.

SECTION 4 OF APPENDIX B TO THE RFP ENERGY RESOURCE AND DELIVERY PLAN

- 4.1 *For Eligible Facilities, the bidder is required to provide an energy resource or fuel supply plan for its proposed project, including supporting documentation. The fuel supply/energy resource profile information should be consistent with the type of technology/resource option proposed and the term proposed. The information requested is organized according to the type of project or energy resource. Bidders should respond to all information requests which are relevant to the bid in a timely manner.*

Wind Energy Projects

Provide a summary of all collected wind data for the proposed site. Identify when the data was collected and by whom.

Indicate where the data was collected and its proximity to the proposed site. Include an identification of the location and height for the anemometers that were used to arrive at an assessment of the site generation capability.

Apex has been collecting data at the Downeast site [REDACTED]. Currently, [REDACTED] towers are collecting wind speed, wind direction, temperature and pressure data within the project boundary. [REDACTED] A summary of the measurement assets is provided in the table below:

Asset Name	Lat	Long	Type	Anemometer Measurement Heights (m)	Date of Operation
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[REDACTED]					
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Provide (a) at least one year of hourly wind resource data, and (b) a wind resource assessment report from a qualified unaffiliated third-party wind resource assessment firm. Include an analysis of the available wind data which addresses the relationship between wind conditions and electrical output. Provide a projection of net annual energy production, including projections of average net hourly energy production,

based on the wind resource data (a 12 x 24 energy projection) at both P50 and P90 levels.

a) One year of raw wind resource data (2015-2016) is provided from [REDACTED] in **Attachment V – 5.1. Hourly Wind Data 2015-2016.**

b) A third-party wind resource study was recently performed by Vaisala – see **Attachment VI – 5.1. Third-Party Wind Assessment.**

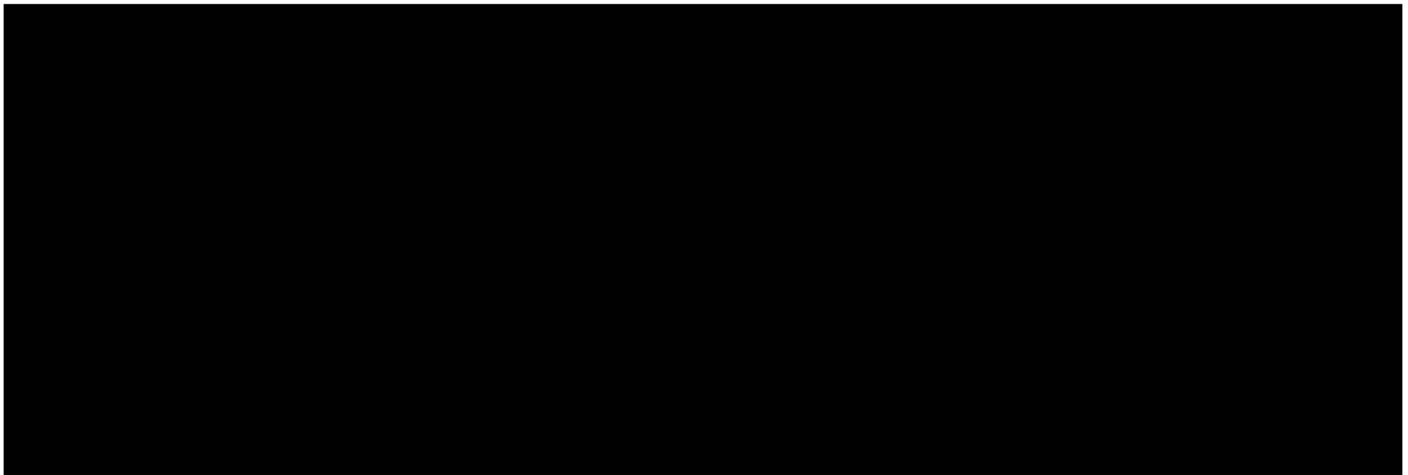
The Project's P50 Net Capacity Factor ("NCF") is [REDACTED] An internal P50 and P90 12x24 is included in **Attachment VII. – 5.1 P50 and P90 12x24s**

The table below summarizes the Project's specifications and energy production:

Project	Downeast Wind		
Turbine			
Machine Size			MW
# of Turbines			Units
Total Project Capacity			MW
On-Site Electrical Loss			%
Net Capacity Factor			%
Time Zone			
Annual Production			MWh

Provide a site-adjusted power curve. Each curve should list the elevation, temperature and air density used.

The power curve used in the site analysis was from [REDACTED] machine. A site air density of [REDACTED] and temperature of [REDACTED] was utilized in the analysis.



Identify the assumptions for losses in the calculation of projected annual energy production, including each element in the calculation of losses.

Total losses of [REDACTED] are calculated for Downeast, and the losses are broken out in the table below:

Production Losses	Loss Percentage
[REDACTED]	

4.2 Clean Energy Generation Delivery Plan

Please provide documentation that any clean energy plan delivery plan that includes hydroelectric generation meets the definition of "Incremental Hydroelectric Generation" as defined in the body of the RFP.

Not applicable for Downeast bid, as bidding only as a Class I RPS resource.

Please provide an energy delivery plan and profile for the proposed project, including supporting documentation. The energy delivery profile must provide the expected Clean Energy Generation to be Delivered into the ISO-NE market settlement system and permit the Evaluation Team to determine the reasonableness of the projections for purposes of Sections 2.2.1.3 Eligible Bid Categories and 2.2.1.7 Minimum Contract Size of the RFP. Such information should be consistent with the energy resource plan provided above and also considering any and all constraints to physical delivery into ISO-NE.

The energy profile, as illustrated in the 12x24 (**Attachment VII – 5.1. P50 and P90 12x24s**), shows strong energy deliver through a majority of the year, in particular during winter peaking months. The project is able to demonstrate that this Clean Energy Generation can be delivered to market through detailed wind resource and transmission/congestion analysis. The deliver plan will provide the generation as noted, with limited to no curtailment due to congestion. [REDACTED]

Apex contracted ABB to perform a congestion and curtailment study for Downeast for the year 2020, [REDACTED], and interconnecting to the [REDACTED] the Emera Maine transmission network in the ISO-NE administered system.

The study was performed with the GridView Production Cost Simulation Program, using ABB's Simulation Ready Production Cost Database. The Database was updated from the 2017 Database published in November 2016, with a 2020 CEI power flow case. This report details all input assumptions and simulation results, including a description of congested transmission facilities impacted by the addition of the proposed Project, curtailment on the Project, and LMP price at the Point of Interconnection.

Existing and prior-queued generation plants in the electrical vicinity of Downeast were also considered in the analysis. There is a total of [REDACTED] of generation in the local area on the [REDACTED] including the proposed Project.

[REDACTED]

The full ABB report can be found in **Attachment XIV – 6.6. Third-Party Congestion and Deliverability Study**.

[REDACTED]

[REDACTED] Apex is committed to performing the full upgrade and any related issues to insure deliverability with no congestion curtailment.

Downeast P50 12x24:

[REDACTED]

Please see **Attachment VII – 5.1. P50 and P90 12x24s** for an Excel version of the above 12x24(s).

Clean Energy Generation for projects containing new Class I eligible resources only must comply with Section 2.2.2.7 of the RFP. They must submit a delivery profile guaranteeing 70% of the energy in their delivery profile for the Winter Peak Period over the course of every Winter Peak Period on the CPPD form in their bidder response package.

Clean Energy Generation for projects containing firm service hydroelectric generation, and Clean Energy from new Class I RPS eligible resources paired with firm service hydroelectric generation must comply with section 2.2.2.7 of the RFP. They will be required to submit a delivery profile with no Winter Peak Period hour less than 60% of their highest annual single hourly delivery claimed in their annual delivery profile as submitted as a part of their CPPD form in their bidder response package. Bidders will be required to guarantee the submitted delivery profile in all hours during the Winter Peak Period. Bidders should supply any studies performed to support this profile. Bidders should respond to all information requests which are relevant to the bid in a timely manner.

The energy profile, as illustrated in the above 12x24, shows strong energy deliver through a majority of the year, in particular during winter peaking months. We have confidence in both our internal and external resource assessment analysis, and the risk of falling below the 70% guarantee is negligible and manageable. Furthermore, we have worked with a major insurance provider experienced in renewable energy generation, and have received quotes for insuring any shortfall in generation.

4.3 REC/Environmental Attribute Delivery Plan

Please provide documentation demonstrating that the project will Deliver GIS Certificates representing those RECs or Environmental Attributes. For projects located outside of the ISO-NE control area, describe how the Delivered energy and associated RECs or Environmental Attributes will satisfy NEPOOL-GIS rules for the Delivery of GIS Certificates.

Downeast will utilize an appropriate tracking system to ensure a unit specific accounting of the delivery of Clean Energy Generation. The Seller will transfer the RPS Class I Renewable Energy Certificates from its own NEPOOL GIS account to the Buyer's account, following all required NEPOOL procedures for doing so, including registering, reporting and managing the RECs. Appropriate documentation can be provided at the time of registering, importing, or transferring the RECs and environmental attributes. Downeast is located within the ISO-NE control area and will be delivering to an ISO-NE PTF node.

SECTION 5 OF APPENDIX B OF THE RFP FINANCIAL/LEGAL

Bidders are required to demonstrate the financial viability of their proposed project. Bidders should provide the following information:

- 5.1 *Each bidder is required to submit information and documentation that demonstrates that a long term contract resulting from this RFP Process would either permit the bidder to finance its proposal that would otherwise not be financeable, or assist the bidder in obtaining financing of its proposal.*

A long-term contract resulting from this RFP process would help to de-risk the Project's revenue stream and open up the door to a range of potential equity investors. In the past, Apex has completed deals with companies [REDACTED] many of which have been repeat investors. Please see question 5.3 for our track record in financing the Project.

Apex has successfully met or arranged all economic performance and credit requirements required to bring the 2,200 MW of projects financed in the past few years to commercial operation. This includes cash security, letters of credit, and third-party corporate guarantees in connection with economic performance obligations required in PPAs and turbine supply, turbine O&M, and interconnection agreements.

Apex and its affiliates have extensive experience in raising late-stage development, construction, and permanent financing for energy projects. The Apex team has a track record of financing more than \$25 billion for wind and other renewable and conventional power generation technologies and has successfully developed more than \$13 billion in operating wind facilities exceeding 12,000 MW of operating capacity.

- 5.2 *Please provide a description of the business entity structure of the bidder's organization from a financial and legal perspective, including all general and limited partners, officers, directors, managers, members and shareholders, involvement of any subsidiaries supporting the project, and the providers of equity and debt during project development. Provide an organization chart showing the relationship between the equity and debt participants and an explanation of the relationships. For jointly owned facilities, identify all owners and their respective interests, and document the Bidder's right to submit a binding proposal.*

Downeast Wind, LLC is a limited liability company organized under the laws of the state of [REDACTED]

The project development efforts for the Project are currently being self-financed by the Bidders' equity.

During the construction and operational period, the proposed capital structure for Project would likely include the following:

Construction Period: During the construction period, Apex assumes that [REDACTED]

Operational Period: Upon or shortly after COD, Apex anticipates the Project's capital structure to be as follows: [REDACTED]

Additional details regarding the financial capabilities of Apex are available on request. Please contact Chief Financial Officer Jim Trousdale with questions either by phone at [REDACTED]

5.2 *For projects that include new facilities or capital investment, provide a description of the financing plan for the project, including construction and term financing. The financing plan should address the following:*

- i. *Who will finance the project and the related financing mechanism or mechanisms that will be used (i.e. convertible debenture, equity or other) including repayment schedules and conversion features*

Apex meets its contractual economic performance requirements, including security that may be required under a PPA/REC purchase, with its direct equity capital and/or with sponsor support. Apex has successfully met or arranged all economic performance and credit requirements required to bring the 2,200 MW of projects financed in the past few years to commercial operation. This includes cash security, letters of credit, and third-party corporate guarantees in connection with economic performance obligations required in PPAs and turbine supply, turbine O&M, and interconnection agreements.

[REDACTED]

Tax equity will be funded by major Tier I banks. Past tax equity partners have included [REDACTED]

[REDACTED] and others.

Please refer to question 5.3 for our track record in financing the Project.

The project's existing initial financial structure and projected financial structure

Please refer to 5.2.

- ii. *Expected sources of debt and equity financing*

Please refer to 5.2i.

- iii. *Estimated construction costs*

[REDACTED]

- iv. *The projected capital structure*

Please refer to 5.2.

- v. *Describe any agreements, both pre and post commercial operation date, entered into with respect to equity ownership in the proposed project and any other financing arrangement.*

[REDACTED]

In addition, the financing plan should address the status of the above activities as well as the financing of development and permitting costs. All bidders are required to provide this information.

[REDACTED]

Apex self funds all development and permitting costs throughout the permit application approval cycle and is capitalized to cover the required spending for the Downeast project.

- 5.3 *Provide documentation illustrating the experience of the project sponsor in securing financing for projects of similar size and technology. For each project previously financed provide the following information:*

- i. *Project name and location*
- ii. *Project type and size*
- iii. *Date of construction and permanent financing*
- iv. *Form of debt and equity financing*
- v. *Current status of Project*

Please see **Attachment VIII – 5.3. Financing Experience** for a complete matrix of projects that Apex Clean Energy has developed and financed.

- 5.4 *For projects that include new facilities or capital investment, provide evidence that the bidder has the financial resources and financial strength to complete and operate the project as planned.*

Apex has successfully met or arranged all economic performance and credit requirements required to bring over 2,200 MW of projects financed in the past few years to commercial operation. This includes cash security, letters of credit, and third-party corporate guarantees in connection with economic performance obligations required in PPAs and turbine supply, turbine O&M, and interconnection agreements.

Apex has the financial strength and experience to perform asset management services as planned. As of Q3 2017, Apex has over 1,750 MW under management. Apex manages its fleet of turbines from its North American Remote Operations Control Center (“ROCC”), located in Charlottesville, Virginia. The ROCC is staffed 24 hours a day, 7 days a week, 365 days a year by a team of highly skilled operators who monitor and control all of their managed geographically dispersed wind and solar assets remotely.

- 5.5 *Provide complete copies of the most recent audited financial statement or annual report for each bidder for each of the past three years; including affiliates of the bidder (if audited statements are not available, reviewed or compiled statements are to be provided). Also, provide the credit ratings from Standard & Poor’s and Moody’s (the senior unsecured long term debt rating or if not available, the corporate rating) of the bidder and any affiliates and partners.*

Please see **Attachment IX – 5.5. Audited Financials** for the most recent three years of financial statements. The Bidder is not publicly traded and therefore does not have a credit rating.

- 5.6 *Please also include a list of the board of directors, officers and trustees for the past three years and any persons who the bidder knows will become officers, board members or trustees.*

[REDACTED]

- 5.7 *The bidder should demonstrate its ability (and/or the ability of its credit support provider) to provide the required security, including its plan for doing so.*

Apex meets its contractual economic performance requirements, including security that may be required under a power purchase agreement, with its direct equity capital and/or with sponsor support. Apex has successfully met or arranged all economic performance and credit requirements

required to bring the 2,200 MW of projects financed in the past few years to commercial operation. This includes cash security, letters of credit, and third-party corporate guarantees in connection with economic performance obligations required in PPAs and turbine supply, turbine O&M, and interconnection agreements.

- 5.8 *Provide a description of any current or recent credit issues/ credit rating downgrade events regarding the bidder or affiliate entities raised by rating agencies, banks, or accounting firms.*

The company is not publicly traded and therefore does not have a credit rating. [REDACTED]

[REDACTED] If required, bank loans, letters of credit, and escrow accounts can be easily accessed including [REDACTED]. Additionally, Apex has established strong banking relationships with [REDACTED].

- 5.9 *Describe the role of the Federal Production Tax Credit or Investment Tax Credit (or other incentives) on the financing of the project.*

[REDACTED]

- 5.10 *Bidders must disclose any pending (currently or in the past three years) litigation or disputes related to projects developed, owned or managed by Bidder or any of its affiliates in the United States, or related to any energy product sale agreement.*

[REDACTED] Due to confidentiality constraints, Bidder is not able to disclose all litigation to which its affiliates may be party.

- 5.11 *What is the expected operating life of the proposed project? What is the depreciation period for all substantial physical aspects of the bid, including generation facilities, transmission lead lines to move power to the grid, transmission proposals, and mandatory and voluntary transmission system upgrades?*

The expected operating life of the proposed project is [REDACTED]. For tax purposes, we assume that [REDACTED]

- 5.12 *For projects that include new facilities or capital investment, has the bidder already obtained financing, or a commitment of financing, for the project? If financing has not been obtained, explain how obtaining a long-term agreement as proposed will help you in obtaining financing for the proposed project, in obtaining more favorable terms for the financing of the proposed project, or in supporting the future capital investment.*

A long-term contract resulting from this RFP process would help to de-risk the Project's revenue stream and open the door to a range of potential equity investors. In the past, Apex has completed deals with companies that include [REDACTED] many of which have been repeat investors. A long-term agreement will also help to obtain more favorable terms tax equity, which will be funded by major Tier I banks. Past tax equity partners have included [REDACTED], and others.

Please see question 5.3 for our track record in financing comparable projects.

- 5.13 *State whether the bidder or its affiliates have executed agreements with respect to energy, RECs and/or capacity for the project (including any agreements that have been terminated) and provide information regarding the associated term and quantities, and whether bidder has been alleged to have defaulted under or breached any such agreement.*

The Bidder has not executed agreements for the energy, RECs and/or capacity from the Project.

- 5.14 *List all of the Bidder's affiliated entities and joint ventures transacting business in the energy sector.*

[REDACTED]

- 5.15 *Has Bidder, or any affiliate of Bidder, in the last five years, (a) consented to the appointment of, or was taken in possession by, a receiver, trustee, custodian or liquidator of a substantial part of its assets, (b) filed a bankruptcy petition in any bankruptcy court proceeding, (c) answered, consented or sought relief under any bankruptcy or similar law or failed to obtain a dismissal of an involuntary petition, (d) admitted in writing of its inability to pay its debts when due, (e) made a general assignment for the benefit of creditors, (f) was the subject of an involuntary proceeding seeking to adjudicate that Party bankrupt or insolvent, (g) sought reorganization, arrangement, adjustment, or composition of it or its debt under any law relating to bankruptcy, insolvency or reorganization or relief of debtors?*

[REDACTED]

- 5.16 *Briefly describe any known conflicts of interest between Bidder or an affiliate of Bidder and any Distribution Company, or any affiliates of the foregoing.*

[REDACTED]

- 5.17 *Describe any litigation, disputes, claims or complaints involving the Bidder or an*

affiliate of Bidder, against any Distribution Company or any affiliate of any Distribution Company.

- 5.18 *Describe any litigation, disputes, claims or complaints, or events of default or other failure to satisfy contract obligations, or failure to deliver products, involving Bidder or an affiliate of Bidder, and relating to the purchase or sale of energy, capacity or renewable energy certificates or products.*

- 5.19 *Confirm that Bidder, and the directors, employees and agents of Bidder and any affiliate of Bidder are not currently under investigation by any governmental agency and have not in the last four years been convicted or found liable for any act prohibited by State or Federal law in any jurisdiction involving conspiracy, collusion or other impropriety with respect to bidding on any contract, or have been the subject of any debarment action (detail any exceptions).*

- 5.20 *Identify all regulatory and other approvals needed by Bidder to execute a binding sale agreement.*

Execution of a binding sale agreement for this opportunity as currently conceived would require

- 5.21 *Describe and document any and all direct and indirect affiliations and affiliate relationships, financial or otherwise in the past three years between the bidder and one or more of the Distribution Companies and their affiliates, including all relationships in which one of the Distribution Companies has a financial or voting interest (direct or indirect) in the bidder or the bidder's proposed project. These relationships include:*
- Corporate or other joint arrangements, joint ventures, joint operations whether control exists or not;*
 - Minority ownership (50% or less investee);*
 - Joint development agreements;*
 - Operating segments that are consolidated as part of the financial reporting process;*
 - Related parties with common ownership;*
 - Credit, debenture, and financing arrangements, whether a convertible equity feature is present or not;*
 - Wholly owned subsidiaries; and*
 - Commercial (including real property) relationships with any Distribution Company*

SECTION 6 OF APPENDIX B TO THE RFP SITING, INTERCONNECTION, AND DELIVERABILITY

This section of the proposal addresses project location, siting, real property rights and interconnection issues. Bidders should ensure that the threshold criteria outlined in Section 2.2 of the RFP for generation, transmission proposals, and system upgrades are verified in their responses.

- 6.1 Provide a site plan including a map of the site that clearly identifies the location of the Eligible Facility site and/or Transmission Project route, the assumed right-of-way width, the total acreage for Eligible Facilities, the anticipated interconnection point (or, if applicable, multiple points for a Transmission Project), and the relationship of the site to other local infrastructure, including transmission facilities, roadways, and water sources. In addition to providing the required map, provide a site layout plan which illustrates the location of all major equipment and facilities on the site.

Yes, a detailed site plan is included in **Attachment X – 6.1. Site Plan.**



i. Does the project have a right to use the Eligible Facility site and/or Transmission Project route for the entire proposed term of the PPA or tariff (e.g., by virtue of ownership or land development rights obtained from the owner)?

The Project has secured [REDACTED]
[REDACTED]. [REDACTED] site control have been secured [REDACTED] – see Attachment XI
– 6.2ij. Land Lease Details. [REDACTED]

The Project has agreement for

A number of the leases that the Project has

included in **Attachment XII - 6.2iv.** **and Attachment XIII - 6.2iv.**

- 6.3 *Provide evidence that the Eligible Facility site and/or Transmission Project route is properly zoned or permitted. If the Eligible Facility site and/or Transmission Project route is not currently zoned or permitted properly, identify present and required zoning and/or land use designations and permits and provide a permitting plan and timeline to secure the necessary approvals.*

Detail the zoning and permitting issues:

Pursuant to the Maine Wind Energy Act, the Town of Columbia and the Unorganized Territory of T-18 are in the Expedited Permitting Area for Wind Energy Development, as updated by the Maine Land Use Planning Commission Chapter 10 on March 19, 2016. The project has been designed per the guidance and requirements from Maine DEP Site Law standards, Land Use Planning Commission Standards, and the Town of Columbia Wind Ordinance.

The Project TROW will use Town Road Right of Way according to Maine DOT Utility Accommodation Rules. The Project met with the Town of Columbia Selectmen on July 17, 2017, at which time the town confirmed that they agreed with the Maine DOT rules, that this was an acceptable use, and reviewed necessary permit requirements and agreements.

Permitting plan and timeline:

Activity	Start Date	End Date
Environmental, socio-cultural, and economic surveys per Maine DEP guidelines		
Maine DEP Site Law Permit		
Land Use Planning Commission Certification		
Maine DOT Road Crossing permit for overhead lines		
Maine Forest Service Forest Operations Notification		
Town of Columbia Intent to Build Notification		
Town of Columbia utility location road use and open road permit (transmission and collection)		
U.S. Army Corps Section 404 permit		

- 6.4 *Provide a description of the area surrounding the Eligible Facility site and/or Transmission Project route, including a description of the local zoning, flood plain information, existing land use and setting (woodlands, grasslands, agriculture, other).*

The Project is primarily located on, and surrounded by [REDACTED]. The site is [REDACTED]. The soil type is [REDACTED]. The Project leases will provide diverse income [REDACTED] and thus will help sustain current practices.

The Project layout has been conceived for lowest impact to the current land uses, and lowest environmental impact. [REDACTED]

[REDACTED] The Project is designed to avoid impacts to wetlands and vernal pools. The Project's transmission line corridor is specifically being designed to avoid wetlands near the POI. [REDACTED]

- 6.5 *For Eligible Facilities, describe and provide a map of the proposed interconnection that includes the path from the generation site to the ISO New England Inc. ("ISO-NE") Pool Transmission Facilities ("PTF"). Describe how the bidder plans to gain interconnection path site control.*

Interconnection map included?

Yes, a map with the interconnection path and PTF can be found in **Attachment X – 6.1. Site Plan.**

Interconnection site control plan:

[REDACTED] from the Project's collector substation to the point of interconnect [REDACTED]. The generation lead will travel overhead for [REDACTED], and will then be installed underground utilizing [REDACTED] to complete the path to the point of interconnect. [REDACTED] have agreed to lease properties to the Project. The Town's selectmen have agreed that use of this ROW for underground transmission is an acceptable use.

- 6.6 *Please describe the status of any planned interconnection to the grid. Has the bidder made a valid interconnection request to ISO-NE, the applicable New England Transmission Owner, or any neighboring control areas, to interconnect at the Capacity Capability Interconnection Standard? Have any studies been completed by ISO-NE or the applicable Transmission or Distribution Owner? If multiple interconnection requests have been made, please specify all such active requests which have not been superseded by subsequent requests and information regarding the status of each.. Provide copies of any requests made and studies completed. Describe how such studies and information support the costs assumed in preparing your bid and the associated timeline proposed.*

The Project has executed an LGIA to interconnect [REDACTED] as an energy resource. The Project is preparing [REDACTED]

[REDACTED] ABB was commissioned to provide separate study to confirm deliverability – see **Attachment XIX – 6.6. Third-Party Congestion and Deliverability Study**. The report indicated [REDACTED]

- 6.7 *Describe the Project’s electrical system performance and its impact to the reliability of the New England Transmission system. For Transmission Projects provide a description of how the project would satisfy ISO NE’s I.3.9 requirements. Provide the status of any interconnection studies already underway with ISO-NE and/or the transmission owner. Provide a copy of any studies completed to date. Provide a copy of an interconnection agreement, if any, executed by the bidder with respect to the proposed project. If an interconnection agreement has not been executed, please provide the steps that need to be completed before an interconnection agreement can be executed and the associated timeline.*

Performance and its impact:

An Energy Resource Interconnection Agreement has been executed with ISO-NE for the Project.

Both a confidential and redacted copy of the Interconnection Agreement has been attached—see **Attachment XV – 6.7. LGIA_Fully Executed**.

A redacted copy of the System Impact Study has also been attached – see **Attachment XVI – 6.7. System Impact Study**.

- 6.8 *Projects that do not have I.3.9 approval from ISO-NE must include technical reports or system impact studies that approximate the ISO-NE interconnection process, including but not limited to clear documentation of study technical and cost assumptions, reasoning, and justification of such assumptions. All studies must assume the project will interconnect using the Capacity Capability Interconnection Standard, must use the current ISO-NE interconnection process (including network impact scenarios from multiple projects interconnecting), and must also detail any assumptions with respect to projects ahead of the proposed project in the ISO-NE interconnection queue and any assumptions as to changes to the transmission system that differ from the current ISO-NE Regional System Plan. Please include a scenario analysis that shows how changes in the project interconnection queue could impact interconnection costs.*

The Project has I.3.9 approval and upgrades identified in the System Impact Study.

[REDACTED] The Project has commissioned a third-party analysis from ABB (see full report in **Attachment XIV – 6.6. Third-Party Congestion and Deliverability Study**) to show deliverability in the real-time energy market across the load zone. This Study show [REDACTED]

The Study has identified [REDACTED]

[REDACTED]

Downeast (90 MW) is connected to the Emera Maine Company system. The Point of Interconnection is [REDACTED]

Existing and prior-queued generation plants in the electrical vicinity of Downeast were also considered in the analysis. There is a total of [REDACTED] of generation in the local area on the [REDACTED], including the proposed Project. See Figure 1-1 and Table 2-2 in the ABB report (**Attachment XIV – 6.6. Third-Party Congestion and Deliverability Study**).

The ABB study includes scenario analysis of the current generation, and project interconnection queue. [REDACTED]

- 6.9 *To the extent that you provide an alternative interconnection scenario based on ISO-proposed interconnection process changes, you must also include studies using the proposed ISO-NE-proposed process. Any such studies must be accompanied with clear documentation of study technical and cost assumptions, reasoning, and justification of such assumptions.*

- 6.10 *Provide the electrical models of all energy resources supporting the proposed project in accordance with the filing requirements of the ISO-NE Tariff Schedule 22 and 23.*

- 6.11 *Provide a copy of an electrical one-line diagram showing the interconnection facilities and the relevant facilities of the transmission and/or distribution provider.*

An electrical one-line diagram showing the interconnection facilities and relevant transmission facilities are included in the project map (**Attachment X – 6.1. Site Plan**).

- 6.12 *Specify and describe the current or new interconnection facilities (lines, transformers, switching equipment, system control protection, etc.) that bidder owns or is intending to construct or have constructed in order to deliver the proposed energy.*

Please refer to Sections 6.6–6.8 and 6.14

- 6.13 *Incremental data requirements for Projects that include Transmission facilities*

Not applicable. Downeast is only bidding a Class I Renewable project.

- 6.14 *Please detail with supporting information and studies (as available) that the energy contemplated in your proposal is able to be delivered to the Distribution Companies without material constraint or curtailment.*

The third-party congestion study completed by ABB (**Attachment XIV – 6.6. Third-Party Congestion and Deliverability Study**) documents that Downeast project plan, [REDACTED]

The hourly wind production curve provided by Apex yields [REDACTED]. The ABB study concludes that [REDACTED]. The Study also demonstrates that [REDACTED]

Page 38 in the QP 400 System Impact Study (**Attachment XVI – 6.7. System Impact Study**) showed [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

6.15 *Please provide sufficient information and documentation to demonstrate that the proposed point of delivery into ISO-NE, along with their proposed interconnection and transmission upgrades including any transmission upgrades beyond the point of interconnection, is sufficient to ensure full dispatch of the proposal's Clean Energy Generation profile.*

Downeast is connected to the Emera Maine Company system. The Point of Interconnection is the

[REDACTED]

The hourly wind production curve was provided by Apex with

[REDACTED]

Existing and prior-queued generation plants in the electrical vicinity of Downeast were considered in an analysis performed by ABB. There is a total of [REDACTED] of generation in the local area on the [REDACTED], including the proposed Project.

The study result show

[REDACTED]

[REDACTED]

[REDACTED]

For more information, please refer to Sections 6.6–6.8 and 6.14.

SECTION 7 OF APPENDIX B TO THE RFP ENVIRONMENTAL ASSESSMENT, PERMIT ACQUISITION PLAN AND NEW CLASS I RPS CERTIFICATION

This section addresses environmental and other regulatory issues associated with project siting, development and operations for both generation and transmission projects, as applicable.

7.1 Provide a list of all the permits, licenses, and environmental assessments and/or environmental impact statements required. If a bidder has secured any permit or has applied for a permit, please identify in the response.

i. Provide a list of all Federal, state and local permits, licenses, and environmental assessments and/or environmental impact statements required to construct and operate the project.

Agency	Notification/Certification/ Permit	Intended Submission Date	Review Timeframe	Notes
Federal				
U.S. Fish and Wildlife Service	Endangered Species Act ("ESA") listed species			
U.S. Army Corps of Engineers	Section 404 Individual Permit			
Federal Aviation Administration	Notice of Proposed Construction or Alteration—Off Airport: Determination of No Hazard for Turbine Lighting Plan			
Department of Commerce	National Telecommunications Information Administration— courtesy filing			
State of Maine				
MDEP	Maine Site Law Permit			
	Natural Resources Protection Act Permit			
	Water Quality Certification			

Agency	Notification/Certification/ Permit	Intended Submission Date	Review Timeframe	Notes
Maine Forest Service	Forest Operation Notification			
Maine Department of Transportation	Road Crossing Permit for overhead lines			
	Traffic Movement Permit			
Maine Land Use Planning Commission	Certification of Land Use Standards			
Local				
Town of Columbia	Notice of Intent to Build			

7.2 *Provide the anticipated timeline for seeking and receiving the required permits, licenses, and environmental assessments and/or environmental impact statements. Include a project approval assessment which describes, in narrative form, each segment of the process, the required permit or approval, the status of the request or application and the basis for projection of success by the milestone date. All requirements should be included on the project schedule in Section 10.*

A detailed Project Schedule, including the schedule for completing environmental and socio-cultural studies, is included in **Attachment XIX – 10.1. Detailed Project Schedule.**

Downeast will comply with all state and federal permit requirements.

Federal Permitting Requirements

An FAA Determination of No Hazard

Preliminary airspace analysis suggests

Please refer to Section 3.5 for more information and Attachments regarding FAA and DOD studies.



State Permitting

State permitting is regulated by the Maine department of Environmental Protection (“MDEP”) permit application. The application includes standards that cover Site Location, NRPA, Water Quality Certification, and the Construction General Permit. The Department should issue a decision 185 days from the date of acceptance. The State required Land Use Planning Commission (LUPC) Certification required for the Project is incorporated into the MDEP’s Site Law permitting decision and is not a separate approval.

Local Permitting

The Town of Columbia has adopted a wind ordinance with specific local setbacks and sound limits. The Town requires the submission of an intent to build form. All permitting issues are referred to the MDEP process, including standards for measures.

[REDACTED] A Certificate for eligible use is required from the Maine LUPC. The LUPC has requested that this request be filed jointly when filing the Maine DEP Site Law Permit Application.

All field wildlife surveys [REDACTED]

Downeast is [REDACTED] Studies are consistent with the USFWS 2012 Land-based Wind Energy Guidelines, the 2013 Eagle Conservation Plan Guidance, and the MDIFW 2015 Curtailment Policy and Wind Power Preconstruction Study Recommendations and agency input. Bat studies [REDACTED], and avian studies [REDACTED]. Based on findings to date [REDACTED]

- 7.3 *Provide a preliminary environmental assessment of the site and project, including both construction and operation, as applicable. In addition, the bidder should identify environmental impacts associated with the proposed project, any potential*

impediments to development, and its plan to mitigate such impacts or impediments. The analysis should address each of the major environmental areas presented below, as applicable to the proposed project:

i. *Impacts during site development*

[REDACTED]

The construction activities will need to be coordinated to avoid conflicts [REDACTED]. Similarly, use of roads for collection and transmission will need to be carefully planned to allow continued flow of traffic for current uses.

[REDACTED] Project design is carefully avoiding impacts to wetlands, streams and vernal pools. [REDACTED].

Wildlife issue have been carefully reviewed [REDACTED]

ii. *Transportation infrastructure*

Leading to the project area, a planned transportation route for oversized loads will be identified. Traffic Movement Permits with Maine DOT will be coordinated by the contracted transportation company and turbine equipment provider. [REDACTED]

iii. *Air quality impacts*

Not applicable. No expected impacts.

iv. *Access to water resources/water quality impacts*

Full water quality monitoring will be completed. Pre-construction water quality monitoring [REDACTED]

Per the Maine DEP Permit requirements, a full storm water engineering and management plan [REDACTED] and construction will follow protocols as approved by MDEP.

The Operations Building will require modest water resources. [REDACTED]

The Project is being designed to reduce impacts to wetlands, streams and vernal pools. [REDACTED]

v. *Ecological and natural resources impacts*

The Project has completed botanical surveys, wildlife surveys and wetland delineations per the MDEP standards. [REDACTED]. The Project has been designed to avoid impacts to ecological and natural resources as much as possible. Potential conflicts with species of concern are being managed through operation protocols noted above.

vi. *Land use impacts*

The land is currently being used [REDACTED]

[REDACTED] Construction activities will be coordinated to reduce conflicts [REDACTED]. The Project will be providing a significant benefit to the current users, because the project will be providing diverse income for landowners [REDACTED]

vii. *Cultural Resources*

Cultural resources have been mapped in the areas surrounding the project area per the MDEP requirements. [REDACTED]

viii. *Previous site use (e.g., greenfield, brownfield, industrial, etc.)*

Current uses included [REDACTED]

ix. *Noise level impacts*

The project has been laid out and designed using the day and night noise level standards established by the MDEP and Town of Columbia Wind Ordinance. [REDACTED]

[REDACTED] Careful layout and engineering and post project monitoring will insure that the project is operated within legal limits at the project boundary and nearby residences.

x. *Aesthetic/visual impacts*

[REDACTED]

xi. *Transmission infrastructure impacts*

The Project is being laid out and designed to eliminate the need for transmission line crossing. The LGIA includes details for the interconnect [REDACTED]

[REDACTED] The ISO-NE System
Impact Study (Attachment XVI – 6.7. System Impact Study)

xii. *Fuel supply access, where applicable*

Not Applicable for wind technology.

- 7.4 *Provide documentation identifying the level of public support for the project including letters from public officials, newspaper articles, etc. Include information on specific localized support and/or opposition to the project of which the bidder is aware. Provide copies of any agreements with communities and other constituencies impacted by the project, and a plan for community outreach activities, and discuss the status of that plan.*

Apex Clean Energy is focused on innovating in the field of community outreach to support the successful completion and public acceptance of its renewable energy projects. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Downeast developers are in constant dialogue with local landowners and stakeholders and are regular participants in community meetings,

information sessions, and other events. The Downeast project area stands to see increased economic activity and benefits from the project, and these benefits have been shared with the community and with local leaders.

[REDACTED]

Additionally, one of the most significant permitting issues for Maine wind projects is [REDACTED]

[REDACTED] his issue has been discussed in positive context with the Maine Department of Environmental Protection.

See Attachment XVII – 7.4. Newspaper Article & Media Advisory

- 7.5 *For bids that include New Class I Renewable Portfolio Standard Eligible Resources, provide documentation demonstrating that the project was or will be qualified as such. If the facility is already in operation, please indicate when the facility received such qualification.*

Downeast is a planned (new-build) wind turbine generation project and would qualify as a (iii) new Class I RPS eligible resource. Wind energy is an RPS Class I eligible technology according to the RPS Program Summaries¹ website.

"According to the Official Website of the Executive Office of Energy and Environmental Affairs², "RPS Class I RPS Class I Qualified Generation Units were built on or after January 1, 1998 and have met the requirements of the RPS Class I regulations. These Units can be located anywhere in the ISO New England control area, as well as in the adjacent control areas (northern Maine, New York, Quebec, or the Canadian Maritime Provinces), provided that they transmit their power into New England and meet other import criteria. Their NEPOOL GIS Certificates are known as RPS Class I Renewable Energy Certificates or Mass. Class I RECs."

Downeast is located in the ISO New England control area, within the state of Maine. The Project will reach commercialization [REDACTED] well after the required build date of "on or after January 1, 1998," making it an RPS Class I eligible technology. The Project is eligible for NEPOOL GIS Certificates.

- 7.6 *All bidders must include sufficient information and documentation that demonstrates that the bidder will utilize an appropriate tracking system to ensure a unit-specific*

¹ <http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/rps-aps/rps-and-aps-program-summaries.html>

² <http://www.mass.gov/eea/energy-utilities-clean-tech/renewable-energy/rps-aps/qualified-generation-units.html>

accounting of the delivery of Clean Energy Generation, to enable the Department of Environmental Protection, in consultation with DOER, to accurately measure progress in achieving the commonwealth's goals under chapter 298 of the acts of 2008 or Chapter 21N of the General Laws. The RECs and environmental attributes associated with Clean Energy Generation must be delivered into the Distribution Companies' NEPOOL GIS accounts.

Downeast will utilize an appropriate tracking system to ensure a unit specific accounting of the delivery of Clean Energy Generation. The Seller will transfer the RPS Class I Renewable Energy Certificates from its own NEPOOL GIS account to the Buyer's account, following all required NEPOOL procedures for doing so, including registering, reporting and managing the RECs. Appropriate documentation can be provided at the time of registering, importing, or transferring the RECs and environmental attributes.

- 7.7 *Identify any existing, preliminary or pending claims or litigation, or matters before any federal agency or any state legislature or regulatory agency that might affect the feasibility of the project or the ability to obtain or retain the required permits for the project.*

[REDACTED]

SECTION 8 OF APPENDIX B TO THE RFP ENGINEERING AND TECHNOLOGY; COMMERCIAL ACCESS TO EQUIPMENT

This section includes questions pertinent to the engineering design and project technology. This section must be completed for a project that includes new facilities or capital investments for both generation and transmission components if applicable. Bidders should provide information about the specific technology or equipment including the track record of the technology and equipment and other information as necessary to demonstrate that the technology is viable.

8.1 *Provide a reasonable but preliminary engineering plan which includes the following information:*

The facility will be designed in accordance with internal design guidelines, wind farm prudent practices and all local, state and federal standards and codes. [REDACTED]

[REDACTED] site layout and design will include the design for the wind turbine generators, access roads, collection system and project substation.

Apex has analyzed the land and wind resources within the Project area, and will design the site to meet all appropriate specifications. Apex is an experienced developer with a strong construction/engineering department.

Apex has a breadth of experience designing wind farms and will have the civil structural design basis, electrical design, and mechanical design completed prior to Notice to Proceed for the project. The Project will incorporate best industry practices in the design of the facility. The Project will have the necessary/applicable auxiliary equipment design basis completed prior to Notice to Proceed for the project.

The design basis for controls and instrumentation will be completed prior to energization of the facility based on the final turbine type.

i. *Type of generation and transmission technology, if applicable*

The Project will utilize [REDACTED]
[REDACTED] The Project will be required to maintain minimum and maximum voltages that are in compliant with ISO-NE protocols.

ii. *Major equipment to be used*

The Project will utilize [REDACTED]
[REDACTED]

The project will install [REDACTED], a large main power transformer and associated substation and collector equipment throughout the project.

iii. Manufacturer of the equipment

Turbine manufacturer: [REDACTED]

Main power transformer: [REDACTED]

[REDACTED]

Reactive equipment: [REDACTED]

iv. Status of acquisition of the equipment

[REDACTED] the
Project will procure all necessary equipment later in the project schedule.

v. Whether the bidder has a contract for the equipment. If not, describe the bidder's plan for securing equipment and the status of any pertinent commercial arrangements

Apex plans [REDACTED]
[REDACTED] It is anticipated that all
scheduled and unscheduled maintenance and repairs for the wind turbines will be provided by
[REDACTED] which will also include availability and
power curve warranties. After the warranty period, turbine maintenance could be managed by Apex
Asset Management.

[REDACTED]

[REDACTED]

vi. Equipment vendors selected/considered

The selected vendor and model for the Project is [REDACTED]
[REDACTED] Final turbine rating is subject to change.

[REDACTED]

vii. History of equipment operations

According to [REDACTED]
[REDACTED]

[REDACTED]

- viii. *If the equipment manufacturer has not yet been selected, identify in the equipment procurement strategy the factors under consideration for selecting the preferred equipment*

[REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

- [REDACTED]
- 8.2 *If the bidder has not yet selected the major equipment for a project, please provide a list of the key equipment suppliers under consideration.*
- [REDACTED]

- 8.3 *Please identify the same or similar equipment by the same manufacturer that are presently in commercial operation including the number installed, installed capacity and estimated generation for the past three years.*

Please refer to 8.1.vii.

- 8.4 *For less mature technologies, provide evidence (including identifying specific applications) that the technology to be employed for energy production is ready for transfer to the design and construction phases. Also, address how the status of the technology is being considered in the financial plan for the project.*

Not applicable. Wind energy is a mature technology and has proven to be financeable, as well as reliably and efficiently operated.

- 8.5 *Please indicate if the bidder has a full and complete list of equipment needed for all physical aspects of the bid, including generation facilities, transmission lead lines, transmission proposals, and mandatory and voluntary transmission system upgrades. If not, identify the areas of uncertainty and when the full and complete list of equipment will be identified.*
- [REDACTED]

- 8.6 *Please indicate if the bidder has secured its equipment for all physical aspects of the bid, including generation facilities, transmission lead lines, transmission proposals, and mandatory and voluntary transmission system upgrades. If not, identify the long-lead equipment and describe the timing for securing this equipment.*

Please refer to questions 8.1–8.5 for more information on our procurement plan and process.

SECTION 9 OF APPENDIX B TO THE RFP OPERATION AND MAINTENANCE

Projects that can demonstrate that the operation and maintenance (“O&M”) plan, level of funding, and mechanism for funding will ensure reliable operations during the term of the contract or the tariff are preferred.

- 9.1 *Provide an O&M plan for the project that demonstrates the long term operational viability of the proposed project. The plan should include a discussion of the staffing levels proposed for the project, the expected role of the project sponsor or outside contractor, scheduling of major maintenance activity, and the plan for testing equipment.*

OPERATION AND MAINTENANCE PLAN

For balance of plant operations and maintenance (“O&M”), [REDACTED]

[REDACTED] As a company with experience bringing utility scale wind generation to market, Apex is comfortable with the regulatory hurdles necessary to commission and operate a wind power facility.

The facility’s turbines will require maintenance at an average interval of [REDACTED] total scheduled service time for each turbine will be limited to approximately [REDACTED]

Operations will schedule major maintenance on a [REDACTED], requiring the site to stay offline for [REDACTED].

Corrective O&M will be conducted as needed and as quickly as possible with on-site personnel and equipment, and regional resources will be utilized as necessary. All turbine vendors under evaluation will be responsible for service and repair under warranty contracts for a minimum of ten years. During this period the turbine vendor will maintain on-site staff for on-call, emergency, and scheduled work. These personnel will work under the supervision of and in addition to the Project’s asset management and operations staff.

[REDACTED] Operating procedures will be established to ensure all scheduled maintenance will be performed during periods of low demand or at times that coincide with other scheduled outages or low- to no-wind periods. A summary of industry standard service intervals is presented in the table below.



Summary of General Maintenance Requirements and Intervals for Turbines

Item and Interval	120 Days*	6 Months	Annually

Facility outages may also occur due to scheduled or unscheduled maintenance of the Project collection system, the Project substation, or on the short transmission line from the Project substation to the Project’s point of interconnection. Scheduled maintenance for this infrastructure is planned to cause outages scheduled during the least critical or valuable periods. Total scheduled outage time for this infrastructure is expected to accumulate to less than [REDACTED] of time leading to a scheduled auxiliary equipment availability of [REDACTED].

The Project will plan to enter into on-call agreements or retain appropriately trained on-site personnel and equipment in order to ensure that preventive and corrective maintenance to auxiliary equipment does not accumulate on an annual basis to more than [REDACTED] of time. This should result in an availability of [REDACTED] due to non-turbine infrastructure. Auxiliary equipment maintenance will partially overlap periods of turbine downtime, resulting in actual availability in excess of estimates.

[REDACTED]

The Project will use industry standard Supervisory Control and Data Acquisition System (“SCADA”), measurement, and communications equipment to make information available in real time and enable coordination 24/7 between stakeholders regarding outage scheduling and status through systems integration. This coordination may generally include information as required by pertinent regulatory bodies and customers such as:

- Supplying low side generator net-MW and MVAR output and other telemetry data
- Supplying meteorological data (wind speed and direction, temperature, pressure, humidity)
- Scheduling the operation and outages of facilities including providing advanced notification
- Coordinating the synchronization and disconnection of the Project with SPP, the transmission owner, and others in the power market
- Providing data required to operate the system and to conduct system studies
- Providing documented start-up and shutdown procedures, including ramp-up and ramp-down times

Properly scheduled outages for plant maintenance and repairs are essential to overall efficiency and functionality. The Project will enforce standard operating procedures as part of a cross- functional program for outage planning that will coordinate necessary outages across procurement, asset management, operations and customers. Our goal is to maximize plant availability through efficient coordination of both preventive and corrective maintenance.

STAFFING LEVELS

Apex will have [REDACTED] on site, as well as [REDACTED] OEM technicians [REDACTED] (or approximately [REDACTED]).

NERC COMPLIANCE PLAN: DOWNEAST

A North American Reliability Corporation (“NERC”) compliance program is a critical part of the construction, ownership, and operation of a wind farm connected to the bulk electric system. A wind power generating facility that is registered as a generator owner (“GO”) and a generator operator (“GOP”) is subject to dozens of NERC reliability requirements, with any compliance or documentation failures potentially resulting in monetary penalties against the facility.

As a company with experience bringing utility scale wind generation to market, Apex is comfortable with the regulatory hurdles necessary to commission and operate a wind power facility.

Apex will select a company such as Burns & McDonnell to develop NERC procedures for Downeast. After procedures are drafted for the facility, Apex will select an experienced provider of third-party O&M services for the Project. Apex considers it a priority that the O&M service provider ultimately selected for the Project have a strong track record of experience within ISO-NE.

Downeast: Potentially Applicable NERC Standards

Downeast: Potentially Applicable NERC Standards					
Standard	GOP	GO	Standard	GOP	GO
BAL-005			MOD-010		
CIP-001			MOD-012		
CIP-002			MOD-024		
CIP-003			MOD-025		
COM-002			PRC-001		
EOP-004			PRC-004		
EOP-005-2			PRC-005		
EOP-009			PRC-018		
FAC-002			PRC-023		
FAC-008			TOP-001		
IRO-001-1.1			TOP-002		
IRO-001-2			TOP-003		
IRO-005-3.1a			TOP-006		
IRO-010			VAR-002		

Periodically, NERC modifies existing standards and develops new ones. As part of Apex's regulatory compliance program, Apex will monitor the approval and implementation of new reliability standards and develop compliance procedures to maintain NERC compliance.

As part of Apex management services, Apex can manage the NERC filing process and make necessary filings on behalf of Downeast. Prior to making any such filing, compliance with each applicable standard will be verified by a subject matter expert (e.g., an electrical engineer or system operator) and internal counsel.

The most critical aspect of the O&M of an Apex wind energy facility is our focus on developing a culture of compliance. Our team emphasizes a foundation of safety through compliance and documentation. We look forward to the opportunity to demonstrate our in-house expertise.

9.2 Describe in detail the proposed O&M funding mechanism and funding levels to support planned and unplanned O&M requirements.

Apex has successfully met or arranged all economic performance and credit requirements required to bring over 2,200 MW of projects financed in the past few years to commercial operation. This includes cash security, letters of credit, and third-party corporate guarantees in connection with economic performance obligations required in PPAs and turbine supply, turbine O&M, and interconnection agreements.

Apex has the financial strength and experience to perform asset management services as planned. As of Q3 2017, Apex has over 1,750 MW under management. Apex manages its fleet of turbines from its North American Remote Operations Control Center ("ROCC"), located in Charlottesville, Virginia. The ROCC is staffed 24 hours a day, 7 days a week, 365 days a year by a team of highly skilled operators who monitor and control all of their managed geographically dispersed wind and solar assets remotely.

Operational period funding: Upon or shortly after COD, Apex anticipates the Project's capital structure to be as follows: [REDACTED]

[REDACTED]. The appropriate funding levels required to support both planned and unplanned O&M requirements have been considered in the current model and bid prices.

Tax equity funding will be provided by a major Tier I bank(s). Past tax equity partners have included [REDACTED]

[REDACTED], etc.

Apex has secured sponsor equity investments from companies that include [REDACTED] many of which have been repeat investors.

9.3 Describe the terms (or expected terms) of the warranties and/or guarantees on major equipment that the bidder is utilizing or proposing to utilize.

[REDACTED]

Apex's Asset Management service team will determine, at the end of the turbine/equipment contract(s), the best option for managing and operating the asset.

- 9.4 *Describe the status of the project sponsor in securing any O&M agreements or contracts. Include a discussion of the sponsor's plan for securing a medium-term or long-term O&M contract, including the expected provider of O&M services.*

Apex's North American Remote Operations Control Center ("ROCC"), located in Charlottesville, Virginia, is staffed 24 hours a day, 7 days a week, 365 days a year by a team of highly skilled operators who monitor and control all of their managed geographically dispersed wind and solar assets remotely. The asset management function for Downeast is expected to be overseen by this group. The ROCC is equipped with multiple state-of-the-art large-format displays and multi-monitoring systems, which provide the operators full visibility and detailed access to each wind and solar farm's SCADA system, substation HMI, functional displays, and supplemental supporting applications. As of Q3 2017, Apex has over 1,750 MW under management at the ROCC.

With the ROCC, Apex has developed a best-in-class data management, reporting, and diagnostics system that enables its customers to realize insight into their renewable energy asset that is not typically available

- 9.5 *Provide examples of the bidder's experience with O&M services for other similar projects.*

As of Q3 2017, Apex has over 1,750 MW under management at the ROCC. Asset Management is currently managing projects with turbines including Vestas, Siemens, GE, Nordex and Acciona. See sections 9.1-9.4 for more information on our experience and capabilities with projects of similar type and size.



SECTION 10 OF APPENDIX B TO THE RFP PROJECT SCHEDULE

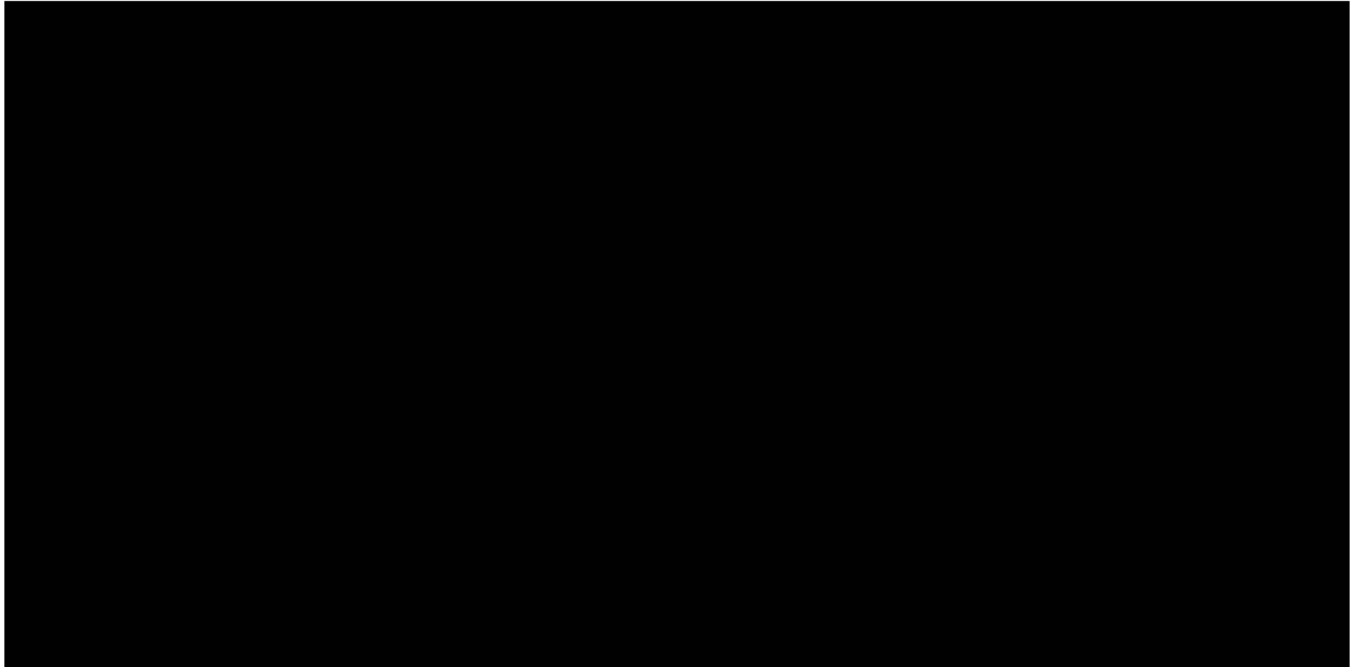
A bidder must demonstrate that its proposal can be developed, financed, and constructed and be technically viable within a commercially reasonable timeframe. The bidder is required to provide sufficient information and documentation that shows that the bidder's resources, process and schedule are adequate for the acquisition of all rights, permits and approvals for the project and for the financing of the project consistent with the proposed project milestone dates.

For Eligible Generation Facilities or Transmission Projects that are not yet in-service, bidders are required to provide a complete critical path schedule for the project from the notice of selection of the project for contract consideration to the start of commercial operations. For each project element, list the start and end date.

- 10.1 *Identify the elements on the critical path. The schedule should include, at a minimum, preliminary engineering, financing, acquisition of real property rights, Federal, state and/or local permits, licenses, environmental assessments and/or environmental impact statements (including anticipated permit submittal and approval dates), completion of interconnection studies and approvals, procurement, facility contracts, start of construction, construction schedule, fuel supply, and any other requirements that could influence the project schedule and the commercial operation date.*

See Attachment XIX – 10.1. Detailed Project Schedule for a detailed project schedule.

- 10.2 *Detail the status of all critical path items, such as receipt of all necessary siting, environmental, and ISO-NE approvals.*



SECTION 11 OF APPENDIX B TO RFP PROJECT MANAGEMENT/EXPERIENCE

Bidders are required to demonstrate project experience and management capability to successfully develop (for a project that includes new facilities or capital investment) and operate the project proposed. The Distribution Companies are particularly interested in project teams that have demonstrated success in projects of similar type, size and technology and, for projects that include new facilities or capital investment, can demonstrate an ability to work together effectively to bring the project to commercial operation in a timely fashion.

- 11.1 Provide an organizational chart for the project that lists the project participants and identifies the corporate structure, including general and limited partners.



- 11.2 *For a project that includes new facilities or capital investment, provide statements that list the specific experience of the bidder and each of the project participants (including, when applicable, the bidder, partners, EPC contractor and proposed contractors), in developing, financing, owning, and operating generating or transmission facilities (as applicable), other projects of similar type, size and technology, and any evidence that the project participants have worked jointly on other projects.*

Please see section 5.3 for a summary of Apex's experience in developing new renewable facilities.

- 11.3 *For a bid that includes existing facilities, provide statements that list the specific experience of the bidder and each of the project participants (including, when applicable, the bidder, partners, EPC contractor and proposed contractors), in owning and operating generating or transmission facilities (as applicable), other projects of similar type, size and technology, and any evidence that the project participants have worked jointly on other projects.*

N/A as not an existing facility.

- 11.4 *Provide a management chart that lists the key personnel dedicated to this project and provide resumes of the key personnel. For Eligible Facilities or Transmission Projects that are not yet in-service, key personnel of the bidder's development team having substantial project management responsibilities must have:*
- i. Successfully developed and/or operated one or more projects of similar size or complexity or requiring similar skill sets; and*
 - ii. For a project that includes new facilities or capital investment, experience in financing power generation projects (or have the financial means to finance the project on the bidder's balance sheet)*

Please see **Attachment XX – 11.4. Management Chart** for a larger version of the following management chart:



Please see **Attachment VIII – 5.3. Financing Experience** for a summary of Apex’s experience in developing and financing new renewable facilities. Our key personnel (including finance, construction and operational teams) have been involved in many of these successfully developed projects.

Bios of key personnel involved in Downeast:

Paul Williamson

Senior Development Manager

Paul is the primary contact for Downeast. Paul joined Apex in 2015 and manages its projects in Maine and other areas of New England. Paul is a native resident of Maine and has worked in the wind industry since 2008. His prior experience includes seeking economic growth areas for companies and employees through the nonprofit “Maine and Ocean Wind Industry Initiative” and working with Maine’s workforce and economic development systems to enhance economic and employment development for boat builders and advanced composites material companies. He also owned and operated a private business in Maine for 10 years. Paul’s passion encompasses the opportunity to enhance job growth and economic opportunities throughout New England.

Steve Vavrik

Chief Commercial Officer

Steve is responsible for power marketing, origination, general business development, and acquisitions management for all Apex projects. Steve brings 20 years of power development experience to Apex, having worked at GE Capital, Enron, Dynegy, First Wind, and SunPower. Steve earned a JD from Yale Law School, an MPA from Princeton University, and MS and BS degrees in mechanical engineering from the University of Illinois.

Edward du Moulin

Business Development Associate

Ed has nearly ten years of experience in renewables, power marketing, and energy consulting. He is responsible for expanding and developing Apex’s power marketing and opportunities pipeline, and for managing multiple key account and broker relationships. He also takes a lead role in responding to solicitations for renewable energy from utilities and corporations, and offers support during the due diligence and contract negotiation phases. Prior to joining Apex, Ed was an energy consultant for Reliable Power Alternatives Corporation and a marketing and sales coordinator for the American Wind Energy Association. He holds a BA from Georgetown University and an MBA from IESE Business School.

Chuck Brown

Executive Vice President of Finance

Chuck is responsible for supporting the company’s efforts in business development, legal, and financial matters. This includes development and financing of wind energy projects, oversight and management of the legal team, and other matters in support of the company’s executive team. Chuck brings more than 30 years of international and domestic experience in the development,





financing, construction, and operations of major generating projects. Previously, he was the cofounder and CEO of Newport Generation, the president of Entergy Power Development Group, managing partner of Entergy's London office with responsibilities for Europe and the Middle East, and the founder and president of Westmoreland Energy Inc. He has also been a partner in the law firms of McGuireWoods and Hunton & Williams. Chuck holds a BS in industrial and systems engineering from Virginia Tech and a JD from Washington and Lee University.

Andrea Miller

Vice President of Asset Management

Andrea brings 20 years of experience in engineering, operations, and asset management to Apex Clean Energy. Andrea was previously with BP Wind Energy, where she managed a \$1 billion+ portfolio of wind power generation facilities ranging in size from 60 MW to 600 MW. She has been very successful in developing and commercializing new wind generation facilities, maintaining contract and regulatory compliance, maximizing the profitability of the assets, and working with landowners, local regulators, environmental agencies, regional transmission operators, and utilities to bring the projects in on time and on budget. She has also worked closely with PJM, MISO, SPP, and ERCOT to identify and mitigate curtailment issues. Andrea holds a BS in civil engineering from Texas A&M University and an MBA from the Bauer College of Business at the University of Houston.

Nathan Biediger

Senior Vice President of Engineering and Construction

Nathan is responsible for engineering, procurement, and construction of capital projects. Nathan was previously with Horizon Wind Energy, where he was director of project management. During his time at Horizon, Nathan managed the installation of 600 MW of wind facilities across four states and managed the preconstruction of an additional 850 MW across three additional states. Prior to Horizon, Nathan was with Zachry Construction Corporation as a project controls manager for its Industrial Process Division. His responsibilities with Zachry included project controls and project management functions on the construction of large power and petrochemical projects in the United States. Nathan holds a BS in construction science from Texas A&M University.

Charles Kennedy

Director of Project Management

Charles is responsible for the construction project management of capital projects. Prior to joining Apex, Charles worked for White Construction, Inc., as a project manager for five years overseeing the balance of plant engineering, procurement, and construction of 450 MW of wind capacity spanning several projects in the United States and Canada. Before joining White, Charles worked for Carlsun Energy Solutions as a project manager providing construction management solutions and balance of plant and O&M services to clients for wind power projects. Charles has over eight years and 750 MW of wind construction experience and an additional four years of EPC management experience in heavy civil. He holds a bachelor of engineering from Ryerson University.



Dave Phillips

Director of Wildlife and Environmental Permitting

Dave is responsible for leading wildlife and environmental permitting processes within the scope of Apex project development activities. He brings 18 years of experience in wildlife research, education, conservation, and environmental consulting. Prior to joining Apex, Dave worked at CH2M HILL for five years, where he specialized in providing development-, construction-, and operations-related consulting and permitting services to renewable energy clients and served as an established technical expert for resolution of environmental conflicts through permitting, studies, and strategic agency interaction. Dave is a certified wildlife biologist and is proficient in Bird and Bat Conservation Plan and Eagle Conservation Plan development and working with the U.S. Fish and Wildlife Service (USFWS) to implement studies that are compatible with the Eagle Conservation Plan Guidance and Land-based Wind Energy Guidelines recently issued by the USFWS. Dave holds a BS in environmental science from Stephen F. Austin State University and an MS in wildlife ecology from the University of Maine.

David Balfrey

Vice President of Technology and Energy Assessment

In his role at Apex, David is responsible for all resource and energy assessment activities for the company's portfolio of projects, as well as evaluation and selection of appropriate turbine technologies for each project. His team is the primary source at Apex for a host of technical services, including site selection, measurements, data collection and analysis, turbine layouts and conceptual design, energy predictions, and other analysis and diligence related to design and prediction. He has worked in wind energy for over 10 years and has managed project technical due diligence activities related to M&A and financing throughout his career. Prior to Apex, David managed the wind assessment program at Acciona Energy North America and worked as a meteorologist and climate researcher at the Mount Washington Observatory in New Hampshire. He received his BA from Pfeiffer University and his master's degree from Appalachian State University.

Joseph Sikorski

Director of Procurement and Project Controls

Joseph oversees wind energy project controls for capital projects within the Apex portfolio. Prior to joining Apex, his work included senior leadership and project management across the United States, Canada, Ireland, Scotland, England, Denmark, and Germany in the construction of several large-scale, utility-grade wind farms. Joseph was previously an officer in the U.S. Army Corps of Engineers. During his service, he deployed twice to Iraq, leading combat engineer missions in Operation Iraqi Freedom and aiding reconstruction efforts for U.S. and foreign forces. Joseph holds a bachelor of science in economics from the Colorado School of Mines, a master of science in operations research from the Florida Institute of Technology, and the Project Management Professional credential.

11.5 Provide a listing of all projects the project sponsor has successfully developed or that



are currently under construction. Provide the following information as part of the response:

- i. Name of the project*
- ii. Location of the project*
- iii. Project type, size and technology*
- iv. Commercial operation date*
- v. Estimated and actual capacity factor of the project for the past three years*
- vi. Availability factor of the project for the past three years*
- vii. References, including the names and current addresses and telephone numbers of individuals to contact for each reference*

For items 11.5i.–vi., please see Section 5.3 for a summary of Apex’s experience in developing and financing new renewable facilities.

vii. Please refer to the following references:

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]

11.6 With regard to the bidder's project team, identify and describe the entity responsible for the following, as applicable:

Please see below for answers to 11.6:

i. Construction Period Lender, if any

Apex and its affiliates have extensive experience in raising late-stage development, construction, and permanent financing for energy projects. The Apex team has a track record of financing more than \$25 billion for wind and other renewable and conventional power generation technologies and has successfully developed more than \$13 billion in operating wind facilities exceeding 12,000 MW of operating capacity.

During the construction period, Apex assumes [REDACTED]

In the past, Apex has secured construction period lending from banks that include [REDACTED]

Apex has secured equity investments from companies that include [REDACTED]

[REDACTED] many of which have been repeat investors.

ii. Operating Period Lender and/or Tax Equity Provider, as applicable

During the operating period, Apex anticipates the Project's capital structure to be as follows [REDACTED]

Tax equity funding will be provided by a major Tier I bank(s). Past tax equity partners have included [REDACTED]

[REDACTED] etc.

iii. Financial Advisor

To be determined.

iv. Environmental Consultant

Environmental and permitting consultants for the Project have included Stantec, Bernstein Shur LLP, and Verril Dana LLP.

v. Facility Operator and Manager



Apex's North American Remote Operations Control Center ("ROCC"), located in Charlottesville, Virginia, is staffed 24 hours a day, 7 days a week, 365 days a year by a team of highly skilled operators who monitor and control all of their managed geographically dispersed wind and solar assets remotely. The asset management function for Downeast is expected to be overseen by this group. The ROCC is equipped with multiple state-of-the-art large-format displays and multi-monitoring systems, which provide the operators full visibility and detailed access to each wind and solar farm's SCADA system, substation HMI, functional displays, and supplemental supporting applications. As of Q3 2017, Apex has over 1,750 MW under management at the ROCC.

For balance of plant operations and maintenance ("O&M"), Apex will contract qualified O&M services to operate the facility in accordance with ISO-NE Protocol Requirements. As a company with experience bringing utility scale wind generation to market, Apex is comfortable with the regulatory hurdles necessary to commission and operate a wind power facility.

vi. Owner's Engineer

To be determined.

vii. EPC Contractor (if selected)

Potential EPC contractors that are under consideration, all of which Apex has prior experience working with, include:

- Blattner
- White Construction
- Wanzek
- Mortenson
- Fagen

This process is competitive to ensure that Apex provides the most cost effective renewable energy possible to our customers.

viii. Transmission Consultant

The Project has worked with the following external transmission consultants:

ABB Inc.
Grid Systems
Power Consulting
901 Main Campus Drive, Suite 300
Raleigh, NC 27606

RLC Engineering
267 Whitten Rd
Hallowell ME 04347



ix. *Legal Counsel*

Apex is currently using its in-house attorneys for general project finance and commercial activities, and utilizes outside counsel when necessary for specific permitting, environmental, and other items.

11.7 Provide details of the bidder's experience in ISO-NE other Markets affected by the bid. With regard to bidder's experience with ISO-NE markets, please indicate the entity that will assume the duties of Lead Market Participant for your Project. Please provide a summary of the proposed Lead Market Participant's experience with each of the ISO-NE markets.

Apex's North American Remote Operations Control Center ("ROCC"), located in Charlottesville, Virginia, is staffed 24 hours a day, 7 days a week, 365 days a year by a team of highly skilled operators who monitor and control all of their managed geographically dispersed wind and solar assets remotely. The asset management function for Downeast is expected to be overseen by this group. The ROCC is equipped with multiple state-of-the-art large-format displays and multi-monitoring systems, which provide the operators full visibility and detailed access to each wind and solar farm's SCADA system, substation HMI, functional displays, and supplemental supporting applications. As of Q3 2017, Apex has over 1,750 MW under management at the ROCC.

With the ROCC, Apex has developed a best-in-class data management, reporting, and diagnostics system that enables its customers to realize insight into their renewable energy asset that is not typically available.

SECTION 12 OF APPENDIX B TO THE RFP EMISSIONS

- 12.1 *For existing generation facilities, provide emissions estimates based on available continuous emissions monitoring data. Where continuous emissions monitoring data is not available, provide emissions estimates based on the most recent stack emissions test conducted using an EPA reference method approved by the applicable permitting and enforcement authority. Where continuous emissions data or actual stack emissions test data are not available, provide emissions estimates based on emissions factors from the latest edition of EPA's AP-42, Compilation of Air Pollutant Emissions Factors.*

For new generation facilities, provide emissions estimates based on available data from the unit manufacturer. Alternatively, provide actual emissions data determined in accordance with the paragraph above for a similar facility built within the past 3 years. Include copies of supporting documentation for all emissions estimates.

Project Anticipated Emissions, expressed in pounds/megawatt-hour (lbs/MWh)

As a wind energy generation facility, Downeast will not emit any air pollutants during its operational state. Minimal emissions will be produced during the manufacture and construction stages of the Project.

12.2 *Describe any past investments that will, or have been made to your facility to improve its emissions profile or any planned future investments made to your facility in order to improve its emissions profile. Pollutant specific emissions improving technologies include, but are not limited to:*

- *NOx – Selective/Non-Selective Catalytic Reduction*
- *SOx – wet/dry scrubbers*
- *PM – fabric filter/bag house, electrostatic precipitator, cyclone separator*
- *CO – oxidation catalyst*

Investments that improve overall emissions include, but are not limited to:

- *equipment tune-ups (improves combustion efficiency and emissions)*
- *boiler tube replacements (improves heat transfer efficiency and reduces fuel use)*

⁴ <https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid>

⁵ https://www.epa.gov/sites/production/files/2017-02/documents/egrid2014_technicalsupportdocument_v2.pdf

⁶ Calculated based on Project's net capacity factor and eGrid non-baseload emissions rates

- *other efficiency improvements (e.g., installing a heat exchanger to use waste heat to pre-heat feed water to the boiler)*

Include control equipment specifications, date(s) of installation, expected life of equipment, benefits gained from the addition of such equipment, etc.

Not applicable for wind turbine generation facilities.

- 12.3 *Describe how your project will contribute to the Massachusetts 2008 Global Warming Solutions Act (GWSA) and the 2010 Clean Energy and Climate Plan for 2020. Describe how your project will contribute both to the short term 2020 goal, and longer term 2050 goal found in these laws.*

Enter appropriate explanation in this space or reference applicable attachment(s)

Apex Clean Energy's corporate goal of "accelerating the shift to clean energy" is similarly shared with The Commonwealth of Massachusetts, which is "leading the way to a clean energy economy." Our ambitions are reflected in our efforts to develop [REDACTED]

Downeast is doing its part to help achieve the goals of the Massachusetts 2008 Global Warming Solutions Act (GWSA) to reduce GHG emissions to "25% below the 1990 baseline emission level in 2020 and at least an 80% reduction in 2050."

[REDACTED] the Project will contribute to the short- and long-term goals of the GWSA and the 2010 Clean Energy and Climate Plan for 2020. Per the official website of the Executive Office of Energy and Environmental Affairs, Downeast will help in "reducing Massachusetts's energy dependence on fossil-based energy sources derived from other regions, protecting Massachusetts energy consumers from energy price volatility, and taking advantage of an economic opportunity for growth of the Massachusetts clean energy industry. The policies outlined in this updated Plan will reduce emissions from the combustion of fossil fuels, which result in air pollution and adverse impacts to human health and ecosystems."

Specifically, Downeast will help achieve the following GWSA and 2020 Goals:

Protecting consumers from energy price volatility: Through 83D, Downeast will provide the Commonwealth of Massachusetts and its EDC's with a [REDACTED]

[REDACTED] Wind technology does not require any fuel inputs to operate, and can provide energy and capacity without relying on fossil fuel commodities such as natural gas or coal, which are subject to extreme price volatility and supply and delivery constraints. Downeast is also a winter peaking resource, and will therefore provide energy and capacity during the winter months when gas supplies and deliveries are typical under pressure due to the increase in residential heating



demand. For these reasons, the addition of clean generation to the grid will protect energy consumers in Massachusetts and throughout the ISO-NE control area, and help them to reduce their electric bills.

Emissions reduction and development of renewable energy resources: Downeast will add [REDACTED] of clean energy annually to the ISO-NE grid. Downeast will reduce emissions from the combustion of fossil fuels by displacing fossil fuel generation in the ISO-NE control system. Using the EPA's eGrid 2014 non-baseload emissions offset data, the Project will offset [REDACTED] of CO₂e emissions annually. Please see Section 12.1 for additional metrics of emissions and harmful pollutants that will be removed from the grid and no longer adversely impact human health and our natural ecosystems.

SECTION 13 OF APPENDIX B TO THE RFP
CONTRIBUTION TO EMPLOYMENT AND ECONOMIC DEVELOPMENT AND
OTHER DIRECT AND INDIRECT BENEFITS

- 13.1 *Please provide an estimate of the number of jobs to be created directly during project development and construction (for a project that includes new facilities or capital investment), and during operations, and a general description of the types of jobs created, estimated annual compensation, the employer(s) for such jobs, and the location. Please treat the development, construction, and operation periods separately in your response.*

The Jobs and Economic Development Impact (JEDI) models created by NREL's Wind Exchange program are industry accurate tools that estimate the economic impacts of constructing and operating power generation and biofuel plants at the local and state levels. JEDI model calculations are based on interviews with industry experts and project developers. Economic multipliers contained within the model are derived from Minnesota IMPLAN Group's IMPLAN accounting software and state data files.

JEDI modeling results indicate that a total of [REDACTED] will be created during the development and construction period of Downeast (see **Attachment XXI – 13.1 JEDI Model**) This represents [REDACTED] in earnings during this period. During operating years, the project will create [REDACTED] jobs, the equivalent of [REDACTED]

The results of the JEDI modeling are in agreement with a study completed by Professor of Economics, Charles Colgan, PhD, at the University of Southern Maine, that analyzed the economic and employment impacts of the wind industry in Northern New England. This study analyzed the actual contractor labor and employment records from 257 MW of installed capacity between 2003 and 2010, combined with modeling by the Regional Economic Models Inc. The Study calculated that an average of 13 direct jobs per wind turbine were created by wind energy projects. These included on-site construction labor, project planning and permitting, professional/consulting, and local services (restaurants and accommodations). Using these estimates, Downeast [REDACTED].

Local contractors with experience constructing wind energy projects in New England, estimate the average construction labor wage to be \$25–\$30 per hour, including benefits. Construction management salaries range from \$50,000 to \$150,000.

Salaries during the operation phase range from \$40,000 to more than \$100,000 for wind turbine technicians and operation managers.

- 13.2 Please provide the same information as provided in response to question 13.1 above but with respect to jobs that would be indirectly created as a result of the proposed project.

The project will create the equivalent of [REDACTED]. This spending represents a total of [REDACTED] in annual earnings during the operational phase.

- 13.3 Please describe any other economic development impacts (either positive or negative) that could result from the proposed project, such as creating property tax revenues or purchasing capital equipment, materials or services for New England businesses. Please provide the location(s) where these economic development benefits are expected to occur.

Enter appropriate explanation in this space or reference applicable attachment(s) The project will provide s substantial investment for rural New England greater than [REDACTED] over the life of the project.

During its construction phase, the project will invest [REDACTED] locally. The annual property taxes are expected to be [REDACTED] and land leases will represent [REDACTED] in annual revenues. The landowner payments are worth noting as a significant issue. [REDACTED]

Local investment from Downeast will be an important mechanism allowing landowners to receive diverse incomes from their lands to ensure the sustainability [REDACTED]. The local taxes will also be an important investment for communities [REDACTED]

- 13.4 To the extent not already specified elsewhere in your response, please address the factors listed in Section 2.2.2.9 and describe any benefits or impacts associated with the proposed project.

The Project [REDACTED]

[REDACTED]

13.5 Describe how your project will (a) contribute to reducing winter electricity price spikes in Massachusetts, and (b) guarantee energy delivery in winter months. Class I RPS eligible projects must guarantee that 70% of energy in their delivery profile of the Winter Peak Period will be delivered over the course of every Winter Peak Period (see Section 2.2.2.7). Clean Energy Generation for projects containing firm service hydroelectric generation, and Clean Energy from new Class I RPS eligible resources paired with firm service hydroelectric generation, will be required to submit a delivery profile with no Winter Peak Period hour less than 60 percent (60%) of their highest annual single hourly delivery claimed in their annual delivery profile.

a) contribute to reducing winter electricity price spikes in Massachusetts

The Project would contribute to moderating System Peak Load as a zero marginal-cost resource with a winter peaking wind profile. A table of estimated average outputs during the winter peak periods can be found in Section 3.4ii.

The energy profile, as illustrated in Section 4.2 and the accompanying 12x24s, shows strong energy deliver through a majority of the year, in particular during winter peaking months.

As discussed in Section 12.3, the Project will help to protect consumers from energy price volatility and winter electricity price spikes. Through 83D, Downeast will provide the Commonwealth of Massachusetts and its EDC's with a [REDACTED]. Wind technology does not require any fuel inputs to operate, and can provide energy and capacity without relying on fossil fuel commodities such as natural gas or coal, which are subject to extreme price volatility and supply and delivery constraints. Downeast is also a winter peaking resource, and will therefore provide energy and capacity during the winter months when gas supplies and deliveries are typical under pressure due to the increase in residential heating demand. For these reasons, the addition of clean generation to the grid will protect energy consumers in Massachusetts and throughout the ISO-NE control area, and help them to reduce their electric bills.

b) guarantee energy delivery in the winter months

The energy profile, as illustrated in Section 4.2 and the accompanying 12x24s, shows strong energy deliver through a majority of the year, in particular during winter peaking months. We have confidence in both our internal and external resource assessment analysis, and the risk of falling below the 70% guarantee is negligible and manageable. [REDACTED]

[REDACTED]

Please refer to Section 4.2 Clean Energy Generation Delivery Plan and Sections 6.6–6.8 and 6.14–6.15 for more information on deliverability.

13.6 *If applicable, please demonstrate any benefits to low-income ratepayers in the Commonwealth, and the impact, if any, those benefits will have on the cost to the project.*

Competitively priced, long-term hedge against volatility in electric power prices provide a value to the Commonwealth ratepayers. Wind energy is a zero-marginal-cost resource and acts as a stabilizer for generation portfolio against fuel price variability. Predictable, long-term wholesale contracts for wind are not subject to volatile fuel markets and provide a known cost to ratepayers, compared to gas or coal, which fluctuate with fuel prices. Reducing the dependence on higher cost generation is a significant economic benefit for the region.

The Parties involved in issuing the request for proposals will provide benefits to their customers, as well as ratepayers throughout the ISO-NE region. Savings for the ratepayers are created from the difference between the proposed contract price and the expected future market value of energy and RECs. Electricity from Downeast will be displacing more expensive resources in the wholesale energy markets, thereby generating additional savings for ratepayers in all of the New England.

SECTION 14 OF APPENDIX B OF THE RFP
ADDITIONAL INFORMATION REQUIRED FOR TRANSMISSION PROJECTS
(AND ALL SYSTEM UPGRADES ASSOCIATED WITH PROPOSED
TRANSMISSION PROJECTS)

This section is not applicable for Downeast, a Class I-only RFP bid.

SECTION 15 OF APPENDIX B TO THE RFP
EXCEPTIONS TO FORM PPA AND OR VARIATIONS FROM THE PROPOSED
TARIFF REQUIREMENTS

An explanation of our exceptions to the Form PPA set forth in Appendix C-1 to this Notice can be found in **Attachment XXII – 15. PPA Exceptions**. A redlined version of the Form PPA can be found in **Attachment XXIII – 15. Redline of Form PPA**.

Attachments Index

Attachment I – 3.5. Evans Engineering Study
Attachment II – 3.5. CAG Study
Attachment III – 3.5. Eastern Air Defense
Attachment IV – 3.5. NORAD
Attachment V - 5.1. Hourly Wind Data 2015-2016
Attachment VI – 5.1. Third-Party Wind Assessment.
Attachment VII – 5.1. P50 and P90 12x24s
Attachment VIII - 5.3. Financing Experience
Attachment IX – 5.5. Audited Financials
Attachment X – 6.1. Site Plan
Attachment XI - 6.2ii. Land Lease Details
Attachment XII - 6.2iv. [REDACTED]
Attachment XIII - 6.2iv. [REDACTED]
Attachment XIV – 6.6. Third-Party Congestion and Deliverability Study
Attachment XV – 6.7. Interconnection Agreement.
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Attachment XVII – 7.4. Newspaper Article & Media Advisory
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Attachment XIX – 10.1. Detailed Project Schedule
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Attachment XXI – 13.1 JEDI Model
Attachment XXII – 15. PPA Exceptions
Attachment XXIII – 15. Redline of Form PPA
Attachment XXIV – SCEC Letter of Support