PATRIOT RENEWABLES
Canton Mountain Wind, LLC

Section 29
Decommissioning Plan

Revision February 1, 2013

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29.0 DECOMMISSIONING

29.1 Introduction

Modern, utility-scale wind turbines are designed and certified by independent certifying bodies for a minimum expected operational life of 20 years[1].

Turbine components all come with a full manufacturer's warranty for at least 2 years after commissioning, and Canton Mountain Wind, LLC (CMW) may elect to extend the warranty for a longer period of time. GE, Siemens, and Gamesa wind turbines have all been independently certified to have a useful life of at least 20 years (see Section 27).

A proactive maintenance program will ensure that the turbines are in working order for at least the 20 years of their expected lives. This is in fact required by banks or other financial institutions that provide debt (Lenders) throughout the term of the bank loan (typically 12-15 years) in order to ensure that the project repays its debt; and it is also in the best interest of CMW to utilize the full operational lifespan of each wind turbine. In addition, the Project is expected to enter into a long-term (15 - 20 years) contractual obligation with one or more electric utilities to produce electricity under a Power Purchase Agreement (PPA). The PPA will define the power price over the life of the contract, which will be significantly higher than the cost of operating the Project. After the term of the PPA, it will remain economic to keep the turbines operating until the end of their useful lives because wind turbines have low fixed operating costs (approximately $0.015 – $0.030 per kWh generated—well below the average market price for electricity). When the turbines do reach the end of their lifespans, CMW may choose to decommission the entire Canton Mountain Wind Project (Project) or replace the turbines with new technology.

The Project will be funded through a combination of debt financing and private investment, and the financing will be secured by the Project's assets. As part of the financing process, banks and investors perform exhaustive due diligence before funding a project, and all of the project's contracts, risks, and potential downsides are thoroughly evaluated prior to closing. Financing entities will review all aspects of the Project: expected power generation and the studies that were conducted to estimate this value; the PPA terms and the financial strength of the entities promising to purchase power; electrical interconnection agreements, and any transmission conditions that may impede project generation; all Project permits; certification and past performance of the specified turbines; foundation design; electrical system design, including grid interconnection; and all manner of contracts involved in the Project. In addition, the Project will carry property insurance with coverage for damage due to weather or other unforeseen events, including business interruption insurance, which protects against a loss of revenue while the Project is undergoing repairs after an insured event.

The PPA, the Project's permits, contracts and agreements, and the overall strength of the Project's revenue stream serve as the guarantee for the financing entity. Lenders are risk averse, and they require cash flows that exceed debt payments by a pre-determined amount. This is called "debt service coverage," or "coverage." Coverage is calculated as revenue minus all operating expenses divided by the

[1] Independent certifying bodies include engineering firms GLGH and Tuv Nord. Certifications are issued based on compliance with standards set by the International Electrical Commission (IEC).

debt payment and is typically no less than 1.5, meaning that even if a project generates a third less coverage than estimated it can still cover its debt payment. In the highly unlikely event that a project fails to make its debt payments, and after a reasonable period fails to cure its default, the Lender has the right to take over the project to protect its investment. If a Lender steps in to cure a default, it has every incentive to bring in skilled personnel to operate the project, generate revenue and return the project to profitability. Because the loan balance is secured by the assets of the project, the Lender is in effect a backstop in the unlikely event that original management team fails to perform. In this way, these highly structured, project-financed entities, like CMW, are actually more stable than a typical business exposed to the uncertainties of the marketplace over a period of 10 to 20 years.

The strength of the power purchaser is also an important indicator of a Project's soundness. Entities that purchase large blocks of renewable power are almost exclusively utilities or other large, public or government entities with investment-grade ratings. Entities that are not rated would be required to post a letter of credit to the Project that would cover a period of lost revenue if that entity were to become insolvent. Finally, unlike pricing for other commercial goods, power pricing in PPAs for wind projects is typically a fixed or predefined price over the full term of the PPA, which gives both the Project and the Lender predictability in revenues.

In the highly unlikely event that a PPA counterparty becomes insolvent or fails to purchase power from the Project as stipulated in the PPA, the Project would continue to generate and sell electricity to a new offtaker or into the regional New England power pool at market prices. As previously noted, wind projects are extremely competitive because operating costs are low and because they have no fuel costs. This is a major advantage over competing sources of electricity generation in the spot market, and virtually guarantees that the Project will be able to sell power into the spot market if needed. This is also one of the reasons that wind power projects lower the overall cost of electricity prices in the wholesale power market.

For both the reasons noted above and the dramatic improvement in turbine reliability over the past 30 years, there is an extremely low risk that the Project will not operate successfully throughout its useful life. The only examples of abandoned projects that we are aware of occurred in California at Altamont Pass, Tehachapi, and San Gorgonio in the early 1980's during the earliest stages of commercial wind power development in the United States. According to the Renewable Energy Policy Project, during that time the California Energy Commission (CEC) provided contracts that specified the price (plus inflation) that generators would receive for their power during the first ten years of operation. After the first ten years of operation, power would be sold at the market rate. The contracts specified prices that reflected expectations in the early 1980s that oil prices would continue to soar; however, in 1985 oil prices plummeted, and the CEC discontinued this power-pricing policy. When the ten-year contract period expired, power could only be sold at the lower market rate, and many California wind developments found their revenue streams constrained.[2] Most of these early projects were constructed with first-generation turbine technology in a new industry, and reliability was lower and maintenance costs were significantly higher than they are today. In addition, those early projects were not subject to any

[2] Renewable Energy Policy Project. "Wind Energy in the United States" http://www.repp.org/repp_pubs/articles/chapman/footnotes.html#6

decommissioning requirements, so some were subsequently abandoned by investors after an initial period of successful operation.

Today, wind turbine technology is much more mature and the technology risk is minimal. Of the approximately 32,000 commercial-scale wind projects (i.e., turbines 1 MW and larger) either operating or under construction in the U.S., we are aware of only one multi-megawatt prototype turbine that was removed after 7 years of operation, and we are not aware of any that have been abandoned prior to the end of their expected useful life. Modern wind turbines are highly reliable, typically available to operate over 97% of the time, and are therefore able to be financed with bank loans and defined power agreements significantly longer than 10 years in duration, sometimes as long as 20 years. In fact, based on the track record of modern wind turbine technology, it is much more likely that a turbine will operate longer than 20 years than less than 20 years.

29.2 Trigger for Decommissioning

The Project will follow all decommissioning standards set by the Maine Department of Environmental Protection (Maine DEP). Currently, "decommissioning is required if no electricity is generated for a continuous period of twelve (12) months."[3] An exception to this trigger may be granted by providing evidence of a period of "force majeure" or an act of God where the cause of the interruption of generation is beyond the reasonable control of CMW.

29.3 Description of Work Required

The decommissioning process will consist of removal of aboveground structures, removal of subgrade structures to a depth of 24 inches, and restoration of the affected areas (Equipment Removal and Site Restoration). Components that can be salvaged, restored, or recycled will be removed and transported to the appropriate facilities. Components for disposal may be disassembled on-site to ensure compliance with applicable disposal regulations. The decommissioning process will follow all requirements of the overseeing authority and be in accordance with all applicable local, state, and federal permits. CMW will follow all best management practices during the decommissioning of the Project.

The turbines will be removed in the reverse order that they were constructed. Equipment and support vehicles will need to be mobilized, along with a crane that will be assembled on-site. Turbine deconstruction will likely proceed as follows: provide erosion control; widen road if necessary to accommodate crane; assemble the crane; remove electrical components and internal cabling; and lower the blades, nacelle, and tower sections to the ground. Depending on the most cost-effective transportation methods and destinations of the decommissioned tower, nacelle, and blades, the turbine components may be transported in their entirety for restoration or disassembled into more maneuverable sections for salvage, recycling, or disposal.

Any non-turbine components will be removed according to Maine DEP guidelines. The belowground components such as foundations, anchor bolts, rebar, etc. will be removed to a depth of 24 inches below grade. Any soils that are disturbed during the extraction of these below-grade components will be backfilled with soil similar to soil found in the immediate area.

[3] 38 M.R.S.A. s481-490

The transmission system, including poles and electrical wires, will be removed and salvaged in the most cost-effective manner, following all applicable regulations. All holes created by the transmission poles will be filled in with soil similar to soil found in the surrounding area. Any subsurface cables or conduits that are buried deeper than 24 inches and do not contain any material that may be harmful to the environment will be left at CMW's discretion. Any materials that cannot be salvaged will be transported to the appropriate disposal sites.

Stream crossings, road improvements, the O&M building, the substation, and the substation access road will be left in place; all other affected areas will be restored unless otherwise instructed by the landowner in writing. After all components have been disassembled, removed, and disposed of, the site will be graded and reseeded in compliance with all applicable guidelines.

29.4 Material Recycling Experience

The Project is being developed by Patriot Renewables, LLC (Patriot), a wind power development company affiliated with Jay Cashman, Inc. (Cashman), a well-established heavy civil and marine construction contractor. Cashman's main offices are located in Quincy, Massachusetts, and it has construction experience throughout the United States. Cashman and affiliated companies have significant experience in the metal recycling and salvage business, as well as an extensive estimating department that regularly bids demolition jobs.

As part of a joint venture Cashman built and operated Stoughton Recycling Technologies (SRT) located in Stoughton, Massachusetts, from 2007 to 2011. SRT is a processing facility for construction and demolition debris that handles approximately 500 tons of material a day. This facility specializes in sorting, removing and reclaiming any materials of value, especially metals. At the time that Cashman sold the facility it had handled approximately 23,000 tons of ferrous and non-ferrous metals since its opening in 2007.

Quincy Recycling, LLC, another company affiliated with Cashman that operated until 2012, was a metal salvage and reclamation company based next to Patriot's office in the Quincy, Massachusetts shipyard.

29.5 Salvage Estimate

Estimating the Decommissioning Cost of large industrial projects involves calculating the cost of removing all Project components and restoring the site as described in Section 29.3, and calculating and subtracting the salvage value of various metal components removed during this process. When requested, contractors will provide firm pricing that incorporates both removal costs and salvage values. In some cases when salvage values exceed the costs of equipment removal, contractors will pay to decommission a site.

Wind turbines are constructed using three major commodity metals that have significant salvage value: steel, aluminum, and copper. The majority of the turbine components are made of steel, specifically the towers, gearboxes, hub, and structural frame of the nacelle. Much of the copper is found in the windings of the generator, low and medium voltage cabling, transformers and converters. Aluminum is used to make various parts including cabling, stairs and other structural components.

In 2011 representatives from SRT and Quincy Recycling were consulted to assess the current salvage value of the individual components from the proposed wind turbines. The salvage value took into account component weights, composition, transportation costs, and then-current market prices. The disposal costs for items with no salvage value were also accounted for and subtracted from the total. These salvage values were updated in January 2013 to reflect current market prices. In addition, updated pricing was obtained from Schnitzer Steel in Auburn, Maine on January 28, 2013 to account for regional variations in salvage costs.

Overall component weights were provided by GE, Siemens and Gamesa. A report published by the Department of Energy entitled *20% Wind by 2020* (Attachment 29-1) provides guidance on the percentage of materials used in a 1.5 MW turbine and 4 MW turbine. This report was used to calculate the amount of salvageable and non-salvageable material used in the decommissioning estimate.

GE 2.85-103 and Gamesa G9X wind turbines are based on the standard 1.5 MW design and have conventional doubly-fed inductions generators, which contain significantly more copper than the Siemens turbines, increasing the salvage value of GE and Gamesa turbines. Siemens turbines utilize permanent magnet generators that are composed of rare earth materials that can have significant value; however, CMW's salvage estimate uses a conservative approach and assumes no value for these rare earth materials because of the unpredictable market for them.

In order to provide conservative estimates and account for fluctuations in pricing, current salvage values were discounted by the largest one-year price decline for each of the three commodity metals based on data from the U.S. Bureau of Labor and Statistics (BLS). The BLS tracks commodity metal prices and publishes an annual price index available at www.bls.gov.

Data from 1982 to 2012 published by BLS (Attachment 29-2) was analyzed to determine the largest one-year negative change in price of steel in the last 30 years, which was 25.3%, occurring in 2009 after seven consecutive years of rising steel prices. (The second largest negative price change was 6.9% in 1999.) CMW applied this factor as a contingency to account for possible price fluctuations in steel and discounted the current salvage price of $265 per metric tonne (MT) by 25.3%, resulting in a steel salvage price of $198 per MT in the current salvage estimate.

Data published by BLS (Attachment 29-3) was also analyzed to determine the largest one-year negative change in the price of scrap copper in the last 30 years, which was 26.3% in 1998. (The second largest negative price change was 24.1% in 2009.) CMW applied this factor as a contingency to account for possible price fluctuations in copper and discounted the current price of $6,964 per MT by 26.3%, resulting in a copper salvage price of $5,133 per MT in the current salvage estimate.

Data published by BLS (Attachment 29-4) was also analyzed to determine the largest one-year negative change in price of aluminum in the last 30 years, which was 38.9% in 2009. (The second largest negative price change was 29.4% in 1982.) CMW applied this factor as a contingency to account for possible price fluctuations in aluminum and discounted the current price of $1,234 per MT by 38.9%, resulting in an aluminum salvage price of $753 per MT in the current salvage estimate.

Although metal prices fluctuate from year to year, prices have always trended upwards over the long term. Over the last 30 years, average annual steel pricing increased 140.8%, copper increased 606.3%, and aluminum increased 136%. Over that same period, steel pricing decreased only 11 times, with an average decrease of 5.4%, whereas the average increase during the remaining years was 8.3%. Copper pricing decreased 14 times over that period, and declines during those years averaged 10.7%, while increases during the remaining years averaged 23.9%. Aluminum pricing decreased 14 times over that period, and declines averaged 15.1% while increases during the remaining years averaged 20.1%.

Other wind turbines components have little to no salvage value, including blades, nose cones, nacelle cover, and other non-metal parts, and were accounted for by adding $100 per MT as a disposal fee. In addition, $7 per MT was added to the total wind turbine weight to account for transportation to the nearest salvage yard. The total salvage value of each turbine is accounted for in Table 29.1.

29.5 Estimated Wind Turbine Salvage Values

Table 29-1. General Electric 2.85 Salvage Values

Materials	Weight per Turbine (t)	Salvage Value ($/t)	Total
Magnet Permanent	0.00	(0)	0
Steel	309.73	198	61,327
Aluminum	2.78	753	2,094
Copper	5.56	5,133	28,549
Fiberglass	20.16	(100)	(2,016)
Carbon Fiber	0.00	(100)	0
Adhesive	3.82	(100)	(382)
Core	1.39	(100)	(139)
			89,433
Transportation	343.45	($7)	(2,404)
		Total	***$87,029***

Table 29-2. Siemens 3.0 Salvage Values

Materials	Weight per Turbine (t)	Salvage Value ($/t)	Total
Magnet Permanent	0.28	0	0
Steel	313.71	198	62,114
Aluminum	2.80	753	2,108
Copper	1.79	5,133	9,162
Fiberglass	18.80	(100)	(1,880)
Carbon Fiber	2.66	(100)	(266)
Adhesive	3.99	(100)	(399)
Core	1.33	(100)	(133)
			70,707
Transportation	345.35	($7)	($2,417)
		Total	***$68,289***

Table 29-3. Gamesa G9X Salvage Values

Materials	Weight per Turbine (t)	Salvage Value ($/t)	Total
Magnet Permanent	0	0	0
Steel	298.49	198	59,100
Aluminum	2.68	753	2,018
Copper	5.36	5,133	27,513
Fiberglass	19.43	(100)	(1,943)
Carbon Fiber	0	(100)	0
Adhesive	3.69	(100)	(369)
Core	1.34	(100)	(134)
			86,185
Transportation	330.98	($7)	($2,317)
		Total	***$83,869***

29.6 Estimated Decommissioning Cost Itemization

CMW estimates that Equipment Removal and Site Restoration will cost $128,000 per turbine, including $10,000 per turbine to remove distribution lines. Equipment Removal and Site Restoration costs were provided by the Estimating Department at Jay Cashman Inc. in accordance with common industry practice. The salvage or recycling cost recovered from Project materials, which also accounts for disposal costs of non-salvageable materials, is estimated at $87,029 per turbine for the GE turbines, $68,289 for each Siemens turbine, and $83,869 for each Gamesa turbine. Therefore, as itemized below, the total estimated Decommissioning Cost of the Project is as follows:

- GE 2.85 turbines - $327,768 ($40,971 per turbine)
- Siemens 3.0 turbines - $477,688 ($59,711 per turbine)
- Gamesa G9X turbines - $353,048 ($44,131 per turbine)

General Electric 2.85-103

Item	Cost per Turbine
Equipment Removal and Site Restoration	
Overhead	$ 3,000
Crane Mobilization/Demobilization	$ 21,000
Crane Pad Installation, Removal and Restoration	$ 6,000
Turbine Takedown and Disassembly (blades, nacelle, tower)	$ 50,000
Breakdown Components for Transport/Salvage (tower sections, blades, etc.)	$ 18,000
Foundation Removal and Restoration (24 inches below grade)	$ 15,000
Restoration of Access Roads	$ 5,000
Other (removal of transmission lines, etc.)	$ 10,000
Subtotal	$ 128,000

Less Recovered Costs from Salvage/Restoration/Recycling	($ 87,029)
Decommissioning Cost per Turbine	**$ 40,971**
Number of Turbines	8
Project Decommissioning Cost	***$ 327,768***

Siemens 3.0

Item	Cost per Turbine
Equipment Removal and Site Restoration	
Overhead	$ 3,000
Crane Mobilization/Demobilization	$ 21,000
Crane Pad Installation, Removal and Restoration	$ 6,000
Turbine Takedown and Disassembly (blades, nacelle, tower)	$ 50,000
Breakdown Components for Transport/Salvage (tower sections, blades, etc.)	$ 18,000
Foundation Removal and Restoration (24 inches below grade)	$ 15,000
Restoration of Access Roads	$ 5,000
Other (removal of transmission lines, etc.)	$ 10,000
Subtotal	$ 128,000
Less Recovered Costs from Salvage/Restoration/Recycling	($ 68,289)
Decommissioning Cost per Turbine	**$ 59,711**
Number of Turbines	8
Project Decommissioning Cost	***$ 477,688***

Gamesa G9X

Item	Cost per Turbine
Equipment Removal and Site Restoration	
Overhead	$ 3,000
Crane Mobilization/Demobilization	$ 21,000
Crane Pad Installation, Removal and Restoration	$ 6,000
Turbine Takedown and Disassembly (blades, nacelle, tower)	$ 50,000
Breakdown Components for Transport/Salvage (tower sections, blades, etc.)	$ 18,000
Foundation Removal and Restoration (24 inches below grade)	$ 15,000
Restoration of Access Roads	$ 5,000
Other (removal of transmission lines, etc.)	$ 10,000
Subtotal	$ 128,000
Less recovered Costs from Salvage/Restoration/Recycling	($ 83,869)
Decommissioning Cost per Turbine	**$ 44,131**
Number of Turbines	8
Project Decommissioning Cost	***$ 353,048***

29.7 Financial Assurance of Decommissioning Costs

In response to Maine DEP's stated concern about possible early failure and decommissioning, CMW proposes to provide financial assurance to fully fund the Decommissioning Cost of the Project, as described herein, prior to the commencement of construction. Financial assurance may be in the form of a performance bond, surety bond, letter of credit, parental guarantee or other acceptable form of financial guarantee (the Financial Assurance). The Decommissioning Cost will be reassessed prior to commencement of construction of the Project, and Financial Assurance for 100% of the estimated Decommissioning Cost will be in place prior to commencement of construction. Financial Assurance will be in place at all times during construction and operation of the Project. Every three years after commencement of construction, the estimated costs and salvage values will be reassessed and submitted to Maine DEP, and the Financial Assurance will be adjusted accordingly to reflect the revised Decommissioning Cost for the Project.

CMW will make Maine DEP the obligee for any Financial Assurance, and the Maine DEP will have the right to claim the Financial Assurance in the case of non-performance of decommissioning requirements. The trigger for Maine DEP's right to draw on the Financial Assurance will be non-compliance with the decommissioning requirements referenced in Section 29.2 above. Upon decommissioning of the site, any remaining balance of the Financial Assurance shall be returned to CMW.