High Bridge Wind Project

Case No. 18-F-0262

1001.29 Exhibit 29

Site Restoration and Decommissioning

EXHIBIT 29 SITE RESTORATION AND DECOMMISSIONING

(a) Performance Criteria

The Applicant anticipates the project lifespan for the Facility is 25 or more years with the potential for repowering the turbines. In the event the Facility reaches end of life and ceases operations without expectation of returning to operation, or if the initial construction cannot be completed, the Facility will be decommissioned per the Decommissioning Plan and Decommissioning Obligation Cost Evaluation (Decommissioning Plan), a draft of which is included with this Application as Appendix 29-A.

Should decommissioning be required, it will be conducted in accordance with the following performance standards/criteria:

Table 29-1: Decommissioning Performance Criteria

Consideration	Performance Standard or Criteria
Site Safety	Decommissioning will be conducted in accordance with the construction-related Health and Safety Plan, Emergency Action Plan and Site Security Plan, as relevant, to ensure the safe removal of Facility components.
Environmental Impacts	The Applicant commits to using existing roads and infrastructure at the Facility Site to the maximum extent practicable during decommissioning. As a result, minimal new environmental impacts, if any, are anticipated from decommissioning. To address stormwater concerns, the Applicant will comply, as needed, with State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity, GP-0-15-002, or its successor, and will implement appropriate soil and erosion control best management practices to avoid impacts to local surface waters. The Applicant also will implement appropriate dust control measures to minimize impacts from fugitive dust.
Aesthetics	Upon decommissioning, the landscape character of the Facility Site will be restored by removing the aboveground structures, as detailed in this exhibit, to the maximum extent practicable.

Consideration	Performance Standard or Criteria
Salvage and Recycling	Turbines and other major wind energy facility components are constructed of various metals and so have a significant salvage value. Under certain circumstances, these components also can be sold for reuse. The Applicant will sell for reuse or salvage/recycle Facility components to the maximum extent practicable. See Exhibit 29(b) below for an additional discussion of salvage issues.
Potential Future Uses for the Site	The Applicant will perform decommissioning in a manner consistent with the allowed future intended use of the parcels within the Facility Site. All components will be removed to 36 inches, except in active agricultural areas, where components will be removed to a depth of 48 inches. All underground collection lines will be installed at or below these depths and so will be left in place. This is consistent with New York State Department of Agriculture and Markets (NYSDAM) requirements/guidelines.
Useful Life of the Facility	Life span is assumed to be 25 or more years.

(b) Decommissioning and Restoration Plan

The Decommissioning Plan addressing the decommissioning process, schedule and funding, including a detailed cost estimate, is included as Appendix 29-A. As previously stated, megawatt-scale wind turbine generators typically have a life expectancy of approximately 25 years or longer. The current trend in the wind energy industry has been to replace or "re-power" older wind energy projects by upgrading existing equipment with newer, more efficient turbines. Performance criteria applicable to decommissioning would also be applicable to re-powering (see discussion of performance criteria above in Exhibit 29(a)).

If the Facility is not re-powered via upgrading or if one or more turbines are non-operational for 18 months with no expectation of their returning to operation, the non-operational turbines will be decommissioned within 12 months of that determination in accordance with the Decommissioning Plan, unless a longer period is otherwise agreed to by the Applicant, the Town of Guilford and the New York State Department of Public Service (DPS) staff, or unless the Applicant demonstrates that it has been making good faith efforts to restore the turbine to an operable condition.

Decommissioning will consist of the following activities:

- All aboveground structures, including turbines, blades, nacelles, towers, transformers, aboveground collection cables and poles, permanent meteorological towers, the collection substation, including the storage batteries, will be disassembled and transported off-site for reuse, recycling, reclamation, sale or disposal, as appropriate. The point of interconnection (POI) substation will be owned and operated by NYSEG following construction and so will not be removed as part of the decommissioning process. Foundations and other components buried above a depth of 36 inches will be removed, except in active agricultural areas, where components will be removed to a depth of 48 inches. Components buried lower than these depths—such as underground collection lines—will remain in place provided the decision does not violate any permits or legal requirements. The Applicant may allow access roads to remain in place upon receipt of written approval by the landowner. Equipment and materials not previously mentioned will be removed and reclaimed/recycled or disposed of in accordance with applicable federal, State and local requirements. Final removal of all machinery, equipment, and all other materials related to decommissioning activities is to be completed within 12 months of decommissioning initiation, unless otherwise agreed to by the Town and DPS staff.
- To the extent practicable, ground disturbance during decommissioning will be minimized and the site will be restored to its original ground contours. Soils stockpiled during site restoration will be used in the restoration and not transported off site. Vegetation will be re-established using a native seed mix or, in agricultural land, an appropriate cropland seed mix or otherwise addressed pursuant to specific requests by landowners pursuant to their lease agreement with the Applicant.

In addition to providing detailed information concerning the site decommissioning process, the Decommissioning Plan includes:

- A detailed estimate to support proposed decommissioning site restoration and funding upon cessation of operation of the Facility based on the expected turbine model(s) to be used and actual decommissioning costs from other similar projects, to the extent available.
- A procedure and timeframe for notifying the Town of Guilford and potentially impacted landowners concerning site decommissioning and restoration activities.
- An estimated time frame for completion of site decommissioning and restoration activities.

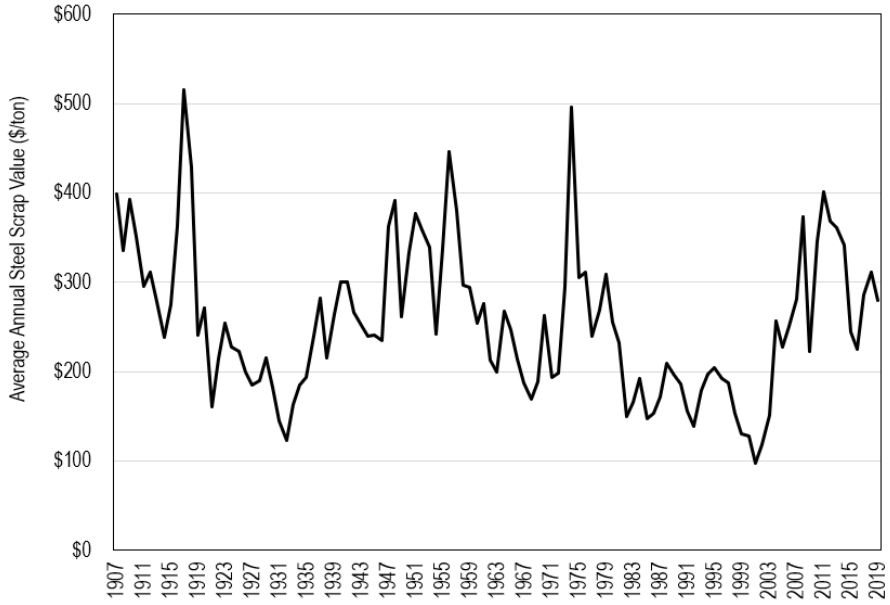
The Applicant proposes that financial assurance be provided in the form of a letter of credit to be held by the Town of Guilford that covers the amount of the decommissioning and site restoration costs. The process of estimating decommissioning cost for purposes of the establishing the amount of the letter of credit is contained in the Decommissioning Plan at Appendix 29-A. The Decommissioning Plan identifies the steps of the decommissioning

process and explains how the costs associated with each step of that process will be assessed. The Decommissioning Plan also calls for a contingency of 10% and an additional 5% for owner indirect costs. The contingency is included to address variability in pricing based on scrap pricing, labor rates, and unit pricing. The owner indirect costs include costs required for demolition such as permitting and engineering fees. Additional information concerning how the amount of the letters of credit will be established is contained in the Decommissioning Plan included as Appendix 29-A.

Consideration of Salvage Value as part of Decommissioning Costs

In estimating site decommissioning costs, the Applicant has considered the salvage value of the turbines and certain other equipment and materials. Each turbine contains a significant amount of salvageable metals and other materials/equipment. Moreover, despite fluctuations in the price of scrap metal historically, scrap metal has always had value. Data collected for the last 112 years shows that the price of scrap metal measured in 2019 dollars has never fallen to $0, but rather has maintained significant value ranging from roughly $100 per ton at the lowest level in 2002, to over $500 per ton around 1917 (USGS, 2012).[1] In 2019, the value of scrap metal is just below $300 per ton (see Figure 29-1).[2] The Decommissioning Plan included at Appendix 29-A includes scrap data from the American Metal Market (AMM), which was applied to the steel, copper and aluminum quantities estimated to be generated from decommissioning the Project to obtain an approximate salvage value.

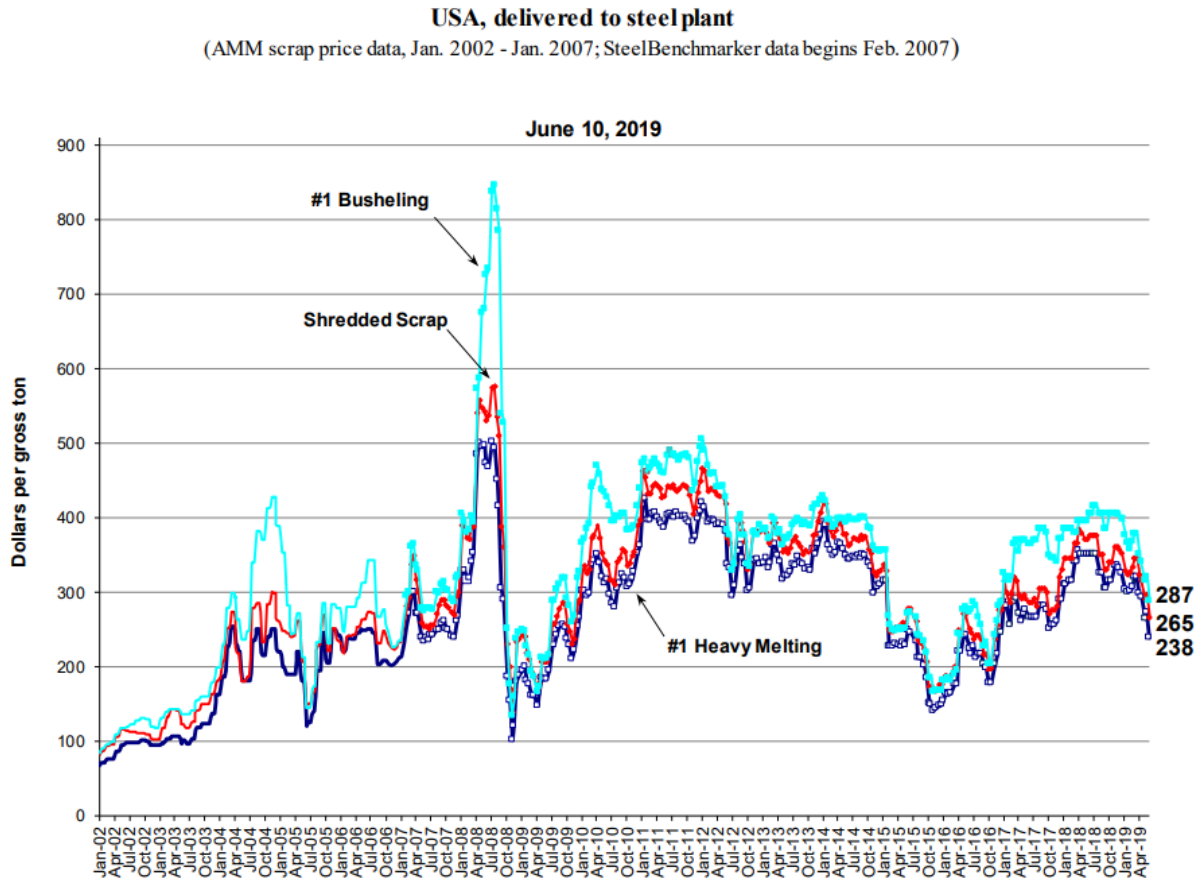
Figure 29-1. Average annual steel scrap prices in USD per ton from 1907 to 2019.



[1] Adjusted for inflation to reflect 2019 USD values.
[2] According to the Steel Scrap Futures database, accessed June 25, 2019. Available at: https://www.investing.com/commodities/steel-scrap-historical-data.

Figure 29-2 below shows data described above in greater level of detail and for the period from January 2002 through April 2019 for scrap steel prices.[3] The lowest scrap price within the last 17 years was approximately $100/gross ton, further confirming that, although pricing is subject to variability, there will always be value in scrap steel, copper and aluminum. Therefore, scrap value has been accounted for in the decommissioning estimate included at Appendix 29-A.

Figure 29-2. Steel scrap prices from January 2002 through April 2019



Burns & McDonnell—the consultant retained by the Applicant to prepare the Decommissioning Plan—has provided professional services for decommissioning and demolition projects for over 10 plants since 2013. In each of these projects, scrap credit was included to offset the price of the decommissioning effort. In preparing the cost estimate for the High Bridge Wind project specifically, the scrap value used was based on an average of monthly AMM prices for June 2018 through May 2019 (i.e., one year) for steel, copper and aluminum. These values include the cost to haul the scrap via truck and/or rail to the major market which provided the best price.

[3] Available at: http://steelbenchmarker.com/files/history.pdf

An updated cost estimate will be prepared as a compliance filing and condition of the Article 10 certificate prior to commencing construction of the Facility based on the final Facility design and turbine selected. The decommissioning estimate will be presented on a per-turbine basis by an independent and registered engineer, licensed to practice engineering in the State of New York. The estimate will be submitted to DPS staff and the Town for review to ensure consistency with the methodology discussed in this Application. After the first year of operation, an independent and registered engineer will prepare an updated cost estimate. A new updated cost estimate will be prepared every five years thereafter until the Facility is decommissioned and site restoration is complete. New letters of credit will be issued based on the updated cost estimates.

(c) Description of Decommissioning/Restoration Agreements between Applicant and Landowners

All Facility components will be located on private land under lease agreement with the landowners, and all leases with private landowners contain a provision on decommissioning. Although the specific terms of these lease agreements, including the decommissioning provisions, are confidential, decommissioning will involve the removal of all above and below ground Facility components up to 36-48 inches, consistent with the discussion in Exhibit 29(a). The Applicant may allow access roads to remain in place upon receipt of written approval by the landowner, although the Applicant will assume that all roads are to be removed for purposes of estimating decommissioning costs. The POI substation will remain in place and will be owned and operated by NYSEG following construction, and therefore the decommissioning and restoration of the POI was not considered. Finally, the Applicant will own the property on which the O&M building will be located and may elect to retain the building or sell it with the land. A description of site decommissioning and restoration activities, projected costs are contained in the draft Decommissioning Plan included as Appendix 29-A.

(d) Nuclear Power Facilities

This section is not applicable and therefore is not addressed in this Article 10 Application.

REFERENCES

United States Geological Survey (USGS). 2012. *Metal Prices in the United States Through 2010.* Scientific Investigations Report 2012–5188, available at: https://pubs.usgs.gov/sir/2012/5188/sir2012-5188.pdf.