Beacon Wind LLC

Beacon Wind 1
Article VII Application

Exhibit 9
Cost of Proposed Facility

May 2022

REDACTED FOR PUBLIC DISCLOSURE

EXHIBIT 9 – COST OF PROPOSED FACILITY

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ABBREVIATIONS AND ACRONYMS

AFUDC	allowance for funds used during construction
BW1	Beacon Wind 1 project
ft	foot/feet
HVAC	high-voltage alternating current
HVDC	high-voltage direct current
km	kilometer(s)
kV	kilovolt(s)
m	meter(s)
nm	nautical mile(s)
NYCRR	New York Codes, Rules and Regulations
POI	point of interconnection

Exhibit 9 Cost Of Proposed Facility

9.1 Introduction

Beacon Wind LLC (Beacon Wind or the Applicant) proposes to construct and operate the Beacon Wind 1 project (BW1) as one of two separate offshore wind projects to be located within the Bureau of Ocean Energy Management-designated Renewable Energy Lease Area OCS-A 0520. The proposed transmission system for BW1 will connect the offshore wind farm to the point of interconnection (POI) at the Astoria power complex in Queens, New York, and will include one 320-kilovolt (kV) high-voltage direct current (HVDC) submarine export cable circuit approximately 115 nautical miles (nm) (213 kilometers [km]) in length in New York State waters, one 320-kV HVDC onshore export cable circuit approximately 600 feet (ft) (183 meters [m]) in length, and three 138-kV high-voltage alternating current (HVAC) interconnection cable circuits approximately 1,400 ft (427 m) in length. An electric transmission line with a design capacity of 125-kV or more, extending a distance of 1 mile (1.6 km) or more, is subject to review and approval by the New York State Public Service Commission (Commission or NYSPSC) as a major electric transmission facility. This application is being submitted to the Commission pursuant to Article VII of the New York Public Service Law (PSL) for the portions of the BW1 transmission system to be located within the State of New York (collectively, the NY Project).

The NY Project's POI to the New York State Transmission System operated by the New York Independent System Operator will be at the existing Astoria West 138-kV Substation in Queens, New York. The Astoria West Substation is owned by the Consolidated Edison Company of New York, Inc. The following Article VII components of BW1 constitute the NY Project:

- One 320-kV HVDC submarine export cable circuit (two cables) located within an approximately 115 nm (213 km)-long submarine export cable corridor from the boundary of New York State waters 3 nm (5.6 km) offshore to the cable landfall at Lawrence Point at the Astoria power complex in Queens, New York;
- A 2,000 ft (610 m) long onshore cable route and substation facility within the Astoria power complex including:
  - One 320-kV HVDC onshore export cable circuit (two cables) installed underground from the landfall to the onshore substation facility within the Astoria power complex (approximately 600 ft [183 m]);
  - One onshore substation facility (inclusive of an onshore converter station and onshore substation) to convert HVDC power to HVAC power and step the voltage down from 320-kV to 138-kV; and
  - Three 138-kV cable circuits, each with nine HVAC onshore interconnection cables, buried underground from the onshore substation facility to the Astoria West POI (approximately 1,400 ft [427 m]).

This Exhibit addresses requirements of 16 New York Codes, Rules and Regulations (NYCRR) § 86.10: Cost of Proposed Facility. Because the Applicant is in the midst of a competitive bidding

process for the engineering, construction, and procurement services for the NY Project, the Applicant requests that the cost estimates included in this Exhibit remain confidential.

9.2 Total Capital Cost Estimate

The total capital cost estimate for the NY Project, which includes right-of-way acquisition, survey activities, materials, construction labor, engineering and inspection costs, administrative overhead, fees for legal and other services, interest during construction, and contingency funds, is provided in **Table 9-1**, along with a breakdown into cost categories in accordance with 16 NYCRR § 86.10. This estimate only includes BW1 facilities located within the New York State boundary and under PSL Article VII jurisdiction. The estimate is provided in 2022 U.S. dollars; escalation and sales tax, if applicable, have not been included.

TABLE 9-1. ESTIMATE OF TOTAL CAPITAL COST BY CATEGORY

Cost Category	Cost Estimate (2022 U.S. dollars)
Right-of-way	[redacted]
Surveys	[redacted]
Materials	[redacted]
Labor	[redacted]
Engineering and Inspection	[redacted]
Administrative Overhead	[redacted]
Fees for Legal and Other Services	[redacted]
Interest During Construction (AFUDC)	[redacted]
Contingencies	[redacted]
Total in 2022 U.S. Dollars	[redacted]

9.3 Information Sources

The estimates provided in **Table 9-1** are based on conceptual studies (for site upgrade and the onshore substation facility), quantity-based estimates provided by suppliers and vendors, awarded contracts (e.g., for the submarine export cables) and the Applicant's experience with similar offshore wind farm development and construction projects. Land acquisition and right-of-way costs were estimated based on market rates of the onshore export and interconnection cable corridors; 9 NYCRR § 271-1.7 provisions for a grant of easement for the New York Office of General Services[i]; and lease term discussions for the onshore substation facility. The breakdown of the total capital cost estimate into cost categories is based on the Applicant's best judgement.

The following assumptions have been included in the cost estimate:

- To determine the costs associated with the submarine export cables within New York waters, costs are pro-rated from the total cost for BW1, based on the proportion of the submarine export cable length in New York State.
- The cost breakdown assumes that engineering is approximately 6 percent, materials are 32 percent, labor is 52 percent, surveys are 1 percent and contractor management is 9 percent of the total facilities cost (excluding right-of-way, contingency, BW1 administrative overhead, and interest).

- Legal fees are assumed to be approximately 20 percent of overall management cost.
- Contingency on the overall estimate is 12.3 percent. Additional variable contingency is included on individual components. Individual components may have a higher or lower contingency than the contingency percentage on the total estimate.
- Interest during construction or allowance for funds used during construction (AFUDC) is calculated at a rate of 3.5 percent.
- Right-of-way costs assume an approximately 30-year lease term for the onshore substation facility and onshore cable rights-of-way. The submarine export cable right-of-way is based on two 25-year lease terms. Note that escalation was also excluded from annual lease costs.

[i] For the purposes of this cost estimate, New York Office of General Services easement fees have been assumed for the entire submarine export cable route in New York State waters. In the case that a portion of the submarine export cable route may instead require a revocable consent from New York City, the cost estimate will be updated accordingly.