Empire Offshore Wind LLC and EW Offshore Wind Transport Corporation

> Empire Wind 2 Project Article VII Application

Exhibit 9 Cost of Proposed Facility

August 2023

REDACTED FOR PUBLIC DISCLOSURE

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ACRONYMS AND ABBREVIATIONS

AFUDC	allowance for funds used during construction
BOEM	Bureau of Ocean Energy Management
Empire or the Applicant	Empire Offshore Wind LLC and EW Offshore Wind Transport Corporation
EW 2	Empire Wind 2
HVAC	high-voltage alternating-current
km	kilometer
kV	kilovolt
Lease	Commercial Lease of Submerged Lands for Renewable Energy Development on the Outer Continental Shelf OCS-A 0512
Lease Area	Bureau of Ocean Energy Management-designated Renewable Energy Lease Area OCS-A 0512
LIPA	Long Island Power Authority
mi	mile
nm	nautical mile
NYCRR	New York Codes, Rules and Regulations
NYISO	New York Independent System Operator, Inc.
NYSPSC or Commission	New York State Public Service Commission
NY Project	EW 2 Project transmission facilities in New York
POI	Point of Interconnection at the Hampton Road substation
PSEG-LI	PSEG Long Island
PSL	New York Public Service Law

EXHIBIT 9: COST OF PROPOSED FACILITY

9.1 Introduction

Empire Offshore Wind LLC and EW Offshore Wind Transport Corporation (collectively, Empire or the Applicant) proposes to construct and operate the Empire Wind 2 (EW 2) Project as one of two separate offshore wind projects to be located within the Bureau of Ocean Energy Management (BOEM) designated Renewable Energy Lease Area OCS-A 0512 (Lease Area). The EW 2 Project will require an electric transmission system to connect the offshore wind farm to the point of interconnection (POI) to the New York State Transmission System. An electric transmission line with a design capacity of 125-kilovolt (kV) or more, extending a distance of one mile 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 pursuant to Article VII of the New York Public Service Law (PSL). The EW 2 Project transmission system will extend a total of approximately 12.2 miles (mi) (19.6 kilometers [km]) within the State of New York and includes two 345-kV cable circuits.

The POI will be located on a parcel located along Hampton Road in Oceanside, within the Town of Hempstead, New York. The POI facilities (referred to herein collectively as the Hampton Road substation) will include both 345-kV and 138-kV substation facilities. The Applicant is proposing to permit all of these facilities, as well as the 138-kV "loop-in / loop-out" lines that will connect the substation facilities to two existing 138-kV cable circuits located under Lawson Boulevard owned by the Long Island Power Authority (LIPA) and operated by PSEG Long Island (PSEG-LI). LIPA will own and PSEG-LI will operate these loop-in / loop-out lines and the 138-kV facilities at the Hampton Road substation site. The ownership and/or operation of the 345-kV facilities at the Hampton Road substation will be determined through a mutually acceptable Interconnection Agreement between the Applicant and LIPA, as developed through the New York Independent System Operator, Inc. (NYISO) interconnection process. This application is being submitted to the Commission pursuant to Article VII of the PSL for the portions of the EW 2 Project transmission system that are located within the State of New York (the NY Project). The onshore portion of the NY Project will be located entirely within Nassau County, New York.

The NY Project includes:

- Two three-core 345-kV high-voltage alternating-current (HVAC) submarine export cables located within an approximately 7.7-nautical mile (nm, 14.2-km)-long submarine export cable corridor from the boundary of New York State waters 3 nm (5.6 km) offshore to the cable landfall;
- A cable landfall in the City of Long Beach, New York;
- Two 345-kV onshore export cable circuits, each with three single-core HVAC onshore export cables within an approximately 1.6-mi (2.5-km)-long onshore export cable corridor from the cable landfall to the onshore substation;
- An onshore substation in the Village of Island Park, within the Town of Hempstead, New York, which will house major control components for the electrical system and perform functions such as voltage regulation, reactive power compensation, and harmonic filtering;

- Two 345-kV interconnection cable circuits, each with three single-core HVAC interconnection cables within an approximately 1.7-mi (2.8-km)-long interconnection cable corridor from the onshore substation to the Hampton Road substation.;
- The new Hampton Road substation in Oceanside in the Town in Hempstead, New York, which will include substation facilities that will provide the necessary breaker arrays and 345-kV/138-kV transformers; and
- Four 138-kV loop-in / loop-out lines cable circuits, located within an approximately 0.1-mi (0.2-km) long cable corridor from the Hampton Road substation to existing LIPA transmission lines located under Lawson Boulevard in Oceanside, New York.

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 competitive bidding processes 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 9.2-1**, along with a breakdown into cost categories in accordance with 16 NYCRR § 86.10. This estimate only includes NY Project facilities under PSL Article VII jurisdiction. The estimate is provided in nominal dollars; escalation and sales tax, if applicable, have not been included.

Cost Category	Cost Estimate (nominal dollars)
Right-of-way	
Surveys	
Materials	
Labor	
Engineering and Inspection	
Administrative Overhead	
Fees for Legal and Other Services	
Interest During Construction (AFUDC)	
Contingencies	
Total	

Table 9.2-1 Estimate of Total Capital Cost by Category

9.3 Information Sources

The estimates provided in **Table 9.2-1** are based on conceptual studies, estimates developed from the Applicant's Offshore Renewable Energy Credit bid, quantity-based estimates provided by suppliers and vendors, preliminary estimates from contractors and suppliers, 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 and other anticipated acquisition costs; 9 NYCRR § 271-1.7 provisions, for a grant of easement for the New York Office of General Services¹; and site acquisition costs for the onshore substation and Hampton Road substation. 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 the EW 2 Project, based on the proportion of the submarine export cable length in New York State.
- The cost breakdown assumes that engineering is approximately 7 percent, materials are 21 percent, labor is 49 percent, surveys are 0.2 percent and contractor management is 14 percent of the total facilities cost (excluding contingency and interest).
- Contingency on the overall estimate is 12.2 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 6 percent.
- Right-of-way costs assume an approximately 30-year assumed NY Project lifespan. 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.

¹ 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.