

Empire Offshore Wind LLC

Empire Wind 1 Project  
Article VII Application

**Exhibit 9**  
**Cost of Proposed Facility**

June 2021

**REDACTED FOR PUBLIC DISCLOSURE**

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**ACRONYMS AND ABBREVIATIONS**

AFUDC	allowance for funds used during construction
Empire, the Applicant	Empire Offshore Wind LLC
EW 1	Empire Wind 1
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
mi	mile
nm	nautical mile
NYCRR	New York Codes, Rules and Regulations
NYSPSC or Commission	New York State Public Service Commission
POI	Point of Interconnection at the Gowanus 345-kV Substation
Project	EW 1 Project transmission facilities in New York
PSL	New York Public Service Law
SBMT	South Brooklyn Marine Terminal

## EXHIBIT 9: COST OF PROPOSED FACILITY

### 9.1 Introduction

Empire Offshore Wind LLC (Empire, or the Applicant) proposes to construct and operate the Empire Wind 1 (EW 1) Project 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 0512 (Lease Area). The proposed transmission system for the EW 1 Project will connect the offshore wind farm to the point of interconnection (POI), and will include 230-kilovolt (kV) export and 345-kV interconnection lines traversing a total of approximately 17.5 miles (mi) (15.2 nautical miles [nm], 28.2 kilometers [km]) within the State of New York. An electric transmission line with a design capacity of 125 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. 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 EW 1 Project transmission system that are located within the State of New York (collectively, the Project).

The Project will interconnect to the New York State Transmission System operated by the New York Independent System Operator, Inc. at the Gowanus 345-kV Substation (the POI). The Gowanus 345-kV Substation is owned by the Consolidated Edison Company of New York, Inc. The Project's onshore facilities, including the onshore cable route, onshore substation, and the POI, are located entirely within Brooklyn, Kings County, New York.

The Article VII components of the EW 1 Project include:

- Two three-core 230-kV high-voltage alternating-current (HVAC) submarine export cables located within an approximately 15.1-nm (27.9-km)-long, submarine export cable corridor from the boundary of New York State waters 3 nm (5.6 km) offshore to the cable landfall in Brooklyn, New York;
- A 0.2-mi (0.3-km)-long onshore cable route and substation including:
  - Two three-core 230-kV HVAC EW 1 onshore export cables buried underground from the cable landfall either directly to the cable terminations or to a vault within the onshore substation;
  - An onshore substation located at the South Brooklyn Marine Terminal (SBMT), which will increase the voltage to 345 kV for the onshore interconnection cables; and
  - Two 345-kV cable circuits, each with three single-core HVAC onshore interconnection cables, buried underground from the onshore substation to the POI.

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 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 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 Project facilities located within the New York State boundary and under PSL Article VII jurisdiction. The estimate is provided in 2021 dollars; escalation and sales tax, if applicable, have not been included.

**Table 9.2-1 Estimate of Total Capital Cost by Category**

Cost Category	Cost Estimate (2021 dollars)
Right-of-way	
Surveys	
Materials	
Labor	
Engineering and Inspection	
Administrative Overhead	
Fees for Legal and Other Services	
Interest During Construction (AFUDC)	
Contingencies	
<b>Total in 2021 Dollars</b>	

### 9.3 Information Sources

The estimates provided in **Table 9.2-1** are based on conceptual studies (for site upgrade and the onshore substation), 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 New York City Revocable Consent Rules, Title 34, Chapter 7 of the Rules of the City of New York; 9 NYCRR § 271-1.7 provisions for a grant of easement for the New York Office of General Services<sup>1</sup>; and lease term discussions for the onshore substation. The breakdown of the total capital cost estimate into cost categories is based on 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 1 Project, based on the proportion of the submarine export cable length in New York State.
- The cost breakdown assumes that engineering is approximately 4%, materials are 52%, labor is 40%, surveys are 2% and contractor management is 2% of the total facilities cost (excluding right-of-way, contingency, Empire administrative overhead and interest).
- Legal fees are assumed to be approximately 20% of overall management cost.

<sup>1</sup> 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.

- Contingency on the overall estimate is 7.6%. 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%.
- Right-of-way costs assume an approximately 30-year lease term for the onshore substation 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.