Large Generating Facility - Interconnection System Reliability Impact Study Scope
Queue # 1066: NY Wind – Mott Haven Project

1. Purpose

The purpose of this System Reliability Impact Study ("SRIS" or "Study") is to evaluate the impact of the proposed interconnection of the NY Wind – Mott Haven Project ("Project"), which is being developed by Bay State Wind, LLC (the "Developer"), on the reliability of the New York State Transmission System ("NYSTS"). The Study will be performed in accordance with Attachment X of the NYISO Open Access Transmission Tariff ("OATT").

The proposed Point of Interconnection ("POI") will be on the Consolidated Edison Company of New York ("Con Edison") Mott Haven 345 kV substation located in the Bronx, New York City.

The Connecting Transmission Owner ("CTO") is **Con Edison**.

The Project consists of 128 x 11.55 MW offshore wind turbines interconnected with 66 kV array cables to an offshore VSC converter station. A +/-320kV HVDC cables, approximately 198 miles, will transmit the power to onshore VSC converter station. An onshore VSC converter will transform the voltage back to AC at 345 kV for interconnection at the POI substation via HVAC lines, approximately 1 mile in length. This Project is a mutually exclusive project to Q767, Q1056, Q1057, and Q1058, which are also being developed by the Developer, and only one out of these five projects can move forward to a Class Year Study.

The Project is expected to allow for a maximum withdrawal of approximately 1,478 MW from the offshore wind collection system and an injection of 1,400 MW into the POI with the estimated losses of 78 MW in total for summer and winter peak condition.

The Project proposes an In-Service Date of January 2026, an initial Synchronization Date of June 2026, and a Commercial Operation Date of April 2027.

The Study will provide a list of the facilities (CTO Attachment Facilities and System Upgrade Facilities) required to interconnect the Project reliably, and non-binding good faith estimates of cost and time to construct those facilities. The Study will also evaluate the impact on the Affected System, NYPA and LIPA.

The Study will be conducted in accordance with the Applicable Reliability Standards.

2. Interconnection Plan

The Study will include a description of the proposed facilities and the conceptual design of the interconnection to the system. The description will include a breaker one-line diagram depicting the proposed facilities and their integration with the existing facilities.

3. Study Period

The Study will be based on the system representation in the 2024 power flow base cases from the NYISO Class Year 2019 ATBA ("Base Cases"). The Study will be conducted using the power flow, stability, and short circuit Base Cases provided by the NYISO, and will include the representation of proposed projects that have already been cost allocated, up to and including Class Year 2017 (as listed in Appendix A of this scope).

4. Study Area

The Study will identify and evaluate the impact of the Project on the 115 kV and above portions of the NYSTS in the following NY load zones: Zone **H** (Millwood), Zone **I** (Dunwoodie) and Zone **J** (New York City**)** that are most likely to be affected by the Project. The Study will also evaluate the impact of the Project on the local (*i.e.*, below 115 kV, as applicable) system in the electrical proximity to the POI.

5. Base Case Conditions

The impact of the proposed Project will be evaluated for **summer peak, winter peak**, and **light load** for the following base case conditions, and as specified under the subsequent sections of this Scope:

Case 1 – Base Case without the Project. The Base Cases will include the baseline system and the proposed projects listed in Appendix A of this scope. The short circuit Base Case will model all the projects as in-service. The power flow Base Case will normally model all projects in-service and at full output, but may model some projects as out-of-service or at less than full output as necessary to establish a feasible base dispatch. Generation will be dispatched in accordance with

NYISO Minimum Interconnection Standard.[1]

Case 2 – Case 1 with the Project modeled in-service at full withdrawal of approximately 1,478 MW from the offshore wind collection system and an injection of 1,400 MW into Mott Haven 345 kV substation. Generation will be re-dispatched in the power flow case, as needed, in accordance with the NYISO Minimum Interconnection Standard.

6. Analysis

Thermal, **voltage**, **stability** and **short circuit** analyses will be conducted to assess the performance of the base system conditions within the Study Area, with and without the Project, in accordance with Applicable Reliability Standards, guidelines and study practices. Modifications to Base Cases, during analyses, will be documented in the Study Report.

6.1 Power Flow Analyses: N-0 and N-1

Thermal and voltage steady state analyses, using PSS/E or a comparable load flow program, will be conducted for **summer** and **winter peak** load cases, pre-contingency and also for relevant Design Criteria Contingencies conditions, and will be limited to the Study Area.

Thermal limits will be assessed under both Normal Criteria and Emergency Criteria, using normal ratings pre-contingency and applicable post-contingency ratings (*e.g.*, Long-Term-Emergency, LTE, ratings or Short-Term-Emergency, STE, ratings).

Voltage limits will be assessed, pre- and post-contingency, using the applicable voltage limits.

6.2. Steady state Analyses: N-1-1

The Study will evaluate a selection of N-1-1 contingencies around the POI. Steady state analyses will be performed for **summer peak** and **winter peak** cases using the N-1-1 contingency descriptions provided by the CTO(s) and/or the NYISO.

6.3. PARs impacts

The Project's impact on the Y49, 901L/M, 903 Phase Angle Regulator ("PAR") schedule ("LIPA Wheel"), and control ranges will be assessed and reported.

[1] As defined in the NYISO Transmission Expansion and Interconnection Manual ("TEI Manual").

6.4 Stability Analysis

Stability analysis, using PSS/E v33, will be performed for **summer peak** and **light load** conditions to determine the impact of the Project on system performance within the Study Area. This analysis will evaluate the performance of the system for Design Criteria Contingencies and will address issues including, but not limited to, transient stability, dynamic stability (*i.e.*, damping), critical clearing time, coordination of protection and control systems, and performance of any Special Protection Systems that may be affected. These analyses will explicitly consider the voltage and frequency ride-through capabilities of the facility.

6.5 Transfer Assessments

The transfer assessment will determine the incremental impact of the project on the Normal and Emergency transfer limits of the **Dunwoodie South and UPNY-ConEd** (opened and closed definitions, as applicable) in accordance with Applicable Reliability Standards, Guidelines and NYISO study practices. The transfer limits will be evaluated in the predominant west-to-east/north-to-south direction, unless otherwise specified. Sufficient analyses will be conducted to determine the most limiting of the thermal, voltage, or stability limits under **summer** peak load conditions.

In order to determine transfer limits, the analysis will simulate generation re-dispatches according to the standard proportions used in NYISO transmission planning studies, for NYISO interfaces. Where applicable, for local interfaces, generation re-dispatching will be done in accordance with Transmission Owner standards and practices.

6.6 Short Circuit Analysis

Short circuit analysis will be performed, using ASPEN, to evaluate the impact of the Project on system protection and adequacy of existing circuit breakers, other fault current interrupting devices, and related equipment. All Project impacts of 100 A or more will be identified.

This analysis will be performed in accordance with the NYISO Guideline for Fault Current Assessment (Attachment I of the NYISO Transmission Expansion and Interconnection Manual), and in accordance with Connecting Transmission Owner and Affected System(s) criteria, to the extent such criteria are recognized as Applicable Reliability Standards.

6.7 Extreme Contingency Assessment

The Study will evaluate the **summer** peak system performance under representative Extreme Contingencies within the Study Area, discuss significant steady-state and stability analyses,

showing the post-fault conditions in the Study Area, and report on pre- and post-Project system response for the most severe contingencies, as specified in the NPCC Directory # 1 (npcc.org), and also in the NYSRC Reliability Rules (nysrc.org).

6.8 NPCC A-10 Testing

The Study will review the NPCC Bulk Power System (BPS) classification of existing and proposed stations within the proximity of the Project to identify any existing or new stations that could be classified as BPS due to the addition of the Project. This testing will be performed for **summer** peak cases, and in accordance with the latest NPCC A-10 criteria (npcc.org).

6.9 Feasibility Analysis

Bus Flow Analysis and Physical Feasibility Analysis will be conducted by the CTO.

Bus Flow Analysis, using PSS/E or a comparable load flow program, will be conducted for **summer** and **winter** peak cases, and will determine thermal adequacy of the major existing and proposed equipment (buswork, circuit breakers and disconnect switches) at the POI substations.

Physical Feasibility Analysis will identify physical feasibility of the proposed project's interconnection at the CTO's substations in accordance with the Developer provided one-line diagram.

6.10 Preliminary Non-Binding Deliverability Analysis

As requested by the Developer, the Study will include a preliminary non-binding deliverability analysis performed under the NYISO Deliverability Interconnection Standard.

7. Modeling Assumptions

7.1 PARs, switched shunts, and LTC transformers will be modeled as regulating pre-contingency and non-regulating post-contingency. The Study will use PAR schedules established by the NYISO in coordination with the neighboring ISOs through the NERC and NPCC base case development processes. PARs may be adjusted as necessary to relieve pre-contingency overloads.

7.2 SVC and FACTS devices will be set to zero pre-contingency and allowed to operate to full range post-contingency.

8. Evaluation and Identification of Upgrades

If the Study results indicate that the Project, as proposed, would result in violations of Applicable Reliability Standards, analyses will be performed to identify any System Upgrade Facilities ("SUFs") or Distribution Upgrades (if applicable) that would be required to meet the NYISO's Minimum Interconnection Standard. When such upgrades are identified, sufficient re-assessments (among those identified in this scope) should be performed in order to assure that the upgrades do not cause any adverse reliability impact on the Study Area.

9. Preliminary Cost Estimates of Facilities and Time to Construct

A preliminary description of facilities (*i.e.*, CTO Attachment Facilities and System Upgrade Facilities, if any) required to interconnect the Project to the NYSTS, or the Distribution System (if applicable), and non-binding good faith estimates of cost and time to construct those facilities, will be provided.

10. Report

The Study Report will document the summary of the results **relevant** to the project impacts, project description, project modeling, study assumptions, criteria and methodology, mitigation solutions and their impact assessment, and conclusions, for each of the analyses identified in this scope.

Appendix A

List of Other Proposed Projects to be Modeled in the Base Case
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Queue Pos.	Owner / Project Name	MW (S|W)
349	Taylor Biomass Energy, LLC / Taylor Biomass	19.0 | 22.5
387	Cassadaga Wind, LLC / Cassadaga Wind	126 | 126
393	NRG Energy, Inc. / Berrians East Repower	508 | 584
396	Baron Winds, LLC / Baron Winds	300 | 300
421	EDP Renewables NA/Arkwright Summit	78.4|78.4
422	NextEra Energy Resources, LLC Eight Point Wind Energy Center	101.2 | 101.2
505	Ball Hill Wind Energy, LLC / Ball Hill Wind	100 | 100
545A	Empire State Line Alternative	N/A
543	Segment B Knickerbocker - Pleasant Valley 345 kV	N/A
556	Segment A Double Circuit	N/A