



Exelon Corporation's Proposal

In response to

PJM's 2013 Market Efficiency Analysis Window

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I. Executive Summary

Commonwealth Edison (ComEd), an operating public utility company of the Exelon Corporation (Exelon), proposes a solution to mitigate the top 25 congestion events targeted in the 2013 Market Efficiency Analysis Window. The proposed lowest possible cost solutions directly address three constraints among these events for Study Years 2017, 2020 and 2023 in the ComEd service territory.

As shown in Exelon Corporation's Pre-Qualification package, Exelon has in-house and contracting capability to support restoration, including during extreme events such as Hurricane Sandy where Exelon was able to use its geographically diverse workforce to assist its sister utilities in emergency restoration. Exelon has unique knowledge of the transmission systems in the service territories served by BGE, ComEd and PECO; familiarity with the communities served by its public utilities; experience in building, maintaining and siting transmission facilities in these communities; and access to funds to build and maintain new and existing transmission facilities. Exelon utilities are NERC registered Transmission Owners with Federally mandated reliability obligations.

The projects proposed by ComEd address the following constraints:

- Zion Energy Center 345kV to Zion 345kV
- Haumesser Road 138kV to West Dekalb Tap 138kV
- Streator Cayuga Ridge Wind Farm 345 kV to Wilton CTR 345 345kV

ComEd proposes a series of local facility upgrades to address the congestion created by these constraints. Additionally, ComEd seeks to be the Designated Entity to construct, own, operate, maintain and finance the project as outlined in this proposal. As the proposed solutions consist mainly of existing facilities in the ComEd territory, the right to construct these upgrades shall automatically assign to ComEd in accordance to FERC Order no. 1000. The pre-qualification documentation submitted to PJM¹ reflects Exelon and its subsidiaries current qualifications to be eligible for Designated Entity status.

ComEd firmly believes that the projects described in this proposal are the most effective and the least-cost solutions.

¹ Pre-qualification identification number 13-04.

II. Description of Proposed Solutions

On August 12, 2013, PJM requested that stakeholders submit competing proposals that would relieve the top 25 PJM transmission constraints as identified in the 2013 Market Efficiency Analysis for study years 2017, 2020, and 2023. From the Top 25 congestion events stated in Version 4 of the Market Efficiency problem statement, three ComEd facilities were identified:

Table 1: ComEd-area Constraints Identified in Version 4 of PJM's Market Efficiency Proposal Window

Constraint Name	Area	Type	2017		2020		2023	
			Frequency (Hours)	Market Congestion (\$ millions)	Frequency (Hours)	Market Congestion (\$ millions)	Frequency (Hours)	Market Congestion (\$ millions)
Zion 345kV to Zion 345kV	M2M	LINE	83	0.6	106	4.1	135	4.9
Haumesser Road 138kV to West Dekalb Tap 138kV	CE	LINE	5	0.1	4	0.1	165	5.2
Streator Cayuga Ridge Wind Farm 345 kV to Wilton CTR 345 345kV	CE	LINE	0	0	6	0.1	102	5.1

Table 2 below summarizes the proposed ComEd system upgrades to address the three ComEd constraints given in Table 1 and a high level cost estimate of these upgrades.

Table 2: Projects to Address 2013 PJM Market Efficiency Analysis Constraints

PJM Constraint Name	Proposed Upgrade	Current Normal/ Emergency Rating (MVA)	Post-upgrade Normal/ Emergency Rating (MVA)
Zion 345kV to Zion 345kV	Re-sag transmission line	1201/1201	1201/1341
Haumesser Road 138kV to West Dekalb Tap 138kV	Upgrade Switch between Haumesser Road and the tap to West	438/452	452/452

	DeKalb		
Streator Cayuga Ridge Wind Farm 345 kV to Wilton CTR 345 345kV	Re-sag transmission line	1201/1280	1201/1479

III. Description of Proposing Entity

a. Technical and Engineering Qualifications and Experience

ComEd has constructed thousands of miles of transmission. As detailed in the Exelon Pre-Qualification package, ComEd has planned, constructed and currently maintains and operates 90 miles of 765 kV circuits, 2,642 miles of 345kV circuits and 2,804 miles of 138kV circuits. The project proposal presented here is well within the engineering capabilities of ComEd.

b. Emergency response capability

Exelon has in-house and contracting capability to support restoration, including during extreme events such as Hurricane Sandy where it was able to use its geographically-diverse workforce to assist their subsidiary utilities in emergency restoration.

c. Proposed financing

As demonstrated in Exelon’s Designated Entity Prequalification Materials, Exelon is more than qualified to provide the financing for this project, which will be either through internally generated funds, given the level of investment for these upgrades, or through external financing, if necessary.

Exelon, an investment-grade company with total assets of \$78 billion, maintains the flexibility to finance the project with any combination of the following: cash, existing credit facilities, external financing sources, and other financing alternatives. Exelon’s internally generated cash and existing credit facilities (in excess of \$8 billion) provide more than adequate liquidity for the development, construction, and operation of this project.

d. Managerial ability to contain costs and adhere to construction schedules

Exelon is one of the best run companies in the electric industry. Exelon has the best low-cost, low-carbon generation fleet in the country, which Exelon operates with world-class efficiency. Exelon enjoys industry-leading scope and scale, a strong balance sheet and outstanding expertise in managing many risks. And Exelon adheres to the vision to be the best group of electric generation and electric and gas delivery companies in the United States

e. List of Assumptions

All work associated with the project proposal will be performed by ComEd, the proposer described herein and the incumbent utility on whose facilities the upgrades will take place.

IV. Analysis Report

a. Project Details

i. Construction Schedule

Table 3 below summarizes the schedule associated with ComEd's proposed upgrades.

Table 3: Proposed Upgrades and Estimated In-Service Date

Constraint Name	Proposed Upgrade
Zion Energy Center 345kV to Zion 345kV	Re-sag transmission line
Haumesser Road 138kV to West Dekalb Tap 138kV	Upgrade Switch between Haumesser Road and the tap to West DeKalb
Streator Cayuga Ridge Wind Farm 345 kV to Wilton Center 345 345kV	Re-sag transmission line

1. Engineering

For all three projects, ComEd has vast experience providing engineering for these types of projects throughout the existing transmission footprint. ComEd has the engineering expertise to complete the engineering work with ComEd labor, or if required has strong relationships with engineering contractors that have a demonstrated ability to provide engineering services to ComEd.

2. Rights of Way/Land Acquisition

Project proposal addresses existing facilities and will not require additional or new Right of Ways.

3. CPCN/Permitting

Project proposal addresses existing facilities and will not require a CPCN.

4. Construction Activities

Zion Energy Center 345kV to Zion 345kV and Streator Cayuga Ridge Wind Farm 345kV to Wilton Center 345kV – ComEd has completed several similar projects in recent years and has forged relationships with contractors in the area with demonstrated ability to complete similar projects.

Haumesser Road 138kV to West DeKalb tap 138 kV – ComEd has extensive experience completing similar projects. If required, ComEd has availability to call on contractors who also have demonstrated ability to complete similar projects.

5. Major Outage Windows

None of these projects will require major outages. Minor outages will be required, but ComEd has extensive experience arranging similar outages with PJM while minimizing the system impact of those outages.

b. Project Costs

i. Engineering

ComEd has vast experience engineering similar projects and at a high level has demonstrated capability to understand and reasonably estimate these projects.

The Zion Energy Center 345kV to Zion 345kV and Streator Cayuga Ridge Wind Farm 345kV to Wilton Center 345kV - ComEd has enough experience with these projects to develop reasonable engineering estimates.

ii. Rights of Way/Land Acquisition

Project proposal addresses existing facilities and will not require purchase of additional or new Right of Ways.

iii. Long-lead Time Equipment Procurement

No long-lead time equipment is required as part of the proposed projects.

iv. CPCN/Permitting

Project proposal addresses existing facilities and will not have costs associated with CPCN.

v. Construction Activities

The Zion Energy Center 345kV to Zion 345kV and Streator Cayuga Ridge Wind Farm 345kV to Wilton Center 345kV - ComEd typically works with an experienced

contractor for construction execution and will use contractors that have demonstrated ability to complete such projects on ComEd's system.

The Haumesser Road 138kV to West DeKalb tap 138 kV - ComEd has performed with ComEd labor several times in the past.

vi. Work to Be Performed by Incumbent Transmission Owner

As ComEd is the Incumbent Transmission Owner and the proposal involves upgrades to existing facilities, all work will be performed by ComEd. The discussion above references the tasks to be performed by ComEd.

vii. Risks and Contingency Costs

c. Construction Cost Caps or Commitments

Upon Exelon being awarded the projects, Exelon will provide a more detailed cost estimate of these projects.

d. Availability of Right of Ways

Project proposal addresses existing facilities and will not require additional or new Right of Ways.

V. Equipment Parameters and Assumptions

Proposed upgrades system parameters are summarized below in Error! Reference source not found.. Detailed change files are included as PSS/E IDEV files and XML PROMOD cases. Facility impedances will not be impacted due to the nature of the proposed projects.

VI. Powerflow Contingency Analysis

ComEd Transmission Planning performed powerflow contingency analyses using the supplied PSS/E case (2018_RTEP_NonMTX_06102013_V32.raw) with and without the proposed upgrades along with the four contingency cases (2018_rtep_master_bus_contingency.con, 2018_rtep_master_line_fb_contingency.con, 2018_RTEP_master_Single_Contingency.con, 2018_rtep_master_tower_contingency.con) also supplied by PJM and found no thermal rating violations.

