EAST POINT ENERGY CENTER

Case No. 17-F-0599

1001.8 Exhibit 8

Electric System Production Modeling

Contents

Tables

Appendices

Exhibit 8: Electric System Production Modeling

This Exhibit will track the requirements of proposed Stipulation 8, dated August 20, 2019, and therefore, the requirements of 16 NYCRR § 1001.8.

8(a) Computer-Based Modeling Tool

The analyses presented in this section of the Application were developed using a computer-based modeling tool, PROMOD. The Applicant reached out to the DPS and the NYSDEC to develop acceptable input data for the simulation analyses. This data includes modeling for the proposed East Point Energy Center's output that will be utilized in calculating the projected emissions predicted to be displaced by the Project from other operating generating facilities.

ICF Resources, LLC (ICF) performed the modeling using the PROMOD platform for a security constrained unit commitment (SCUC) and security constrained economic dispatch (SCED) simulation of the Northeast U.S. power markets. The Project is in Zone F of the New York Independent System Operator (NYISO) power market. Two scenarios were considered for simulation, a Base Case and a Change Case. The Base Case represents market conditions without the proposed Project and the Change Case includes the Project. The first full calendar year of operation for the Facility, 2023, was requested by the Applicant for this study. The study assessed the impact of the Facility's operation on statewide and regional emission levels, NYISO zonal power market and dispatch of existing must-run resources.

ICF's full East Point Energy Center electric system production model report is included as Appendix 8-1 and contains confidential information. Therefore, the Applicant will seek the requisite trade secret and confidential commercial information protection for this information pursuant to Public Officers Law (POL) Section 87(2)(d), 16 NYCRR § 6-1.3, other applicable laws, and/or a protective order as necessary.

(1) Estimated Statewide and Regional Levels of SO_2, CO_2 and NO_x

The Project is expected to reduce emissions of nitrogen oxides (NOx), sulfur dioxide (SO_2), and carbon dioxide (CO_2) from the power sector in New York in 2023. Table 8-1 below represents the estimated reduction in emissions.

Table 8-1. Statewide Emissions With and Without East Point Energy Center

Item	Without the Project (Short Tons)	With the Project (Short Tons)	Reduction in Emission (Short Tons)	Reduction in Emission (%)
NOx	7,657	7,648	9	0.12%
SO_2	6,128	6,123	5	0.09%
CO_2	26,619,913	26,592,238	27,676	0.10%

(2) Estimated Prices for NYISO Zones

In NYISO Zone F, the average annual price in Change Case (with Project) is expected to be $43.27/MWh and in Base Case (without Project) is expected to be $43.31/MWh. The Project is therefore expected to reduce the annual average zonal prices by approximately $0.04 $/MWh, or 0.1%, in 2023. Modeling showed that production costs in New York State were reduced by $2.3 million, or 0.1%, with the Project.

Table 8-2. Annual NYISO Zonal Energy Prices

Zone	Annual Prices With East Point Energy Center ($/MWh)			Annual Prices Without East Point Energy Center ($/MWh)		
	Minimum	Maximum	Average	Minimum	Maximum	Average
A	-18.10	242.40	41.10	-1.73	243.64	41.11
B	5.58	309.56	40.85	5.58	316.14	40.84
C	5.97	316.29	41.66	5.97	323.03	41.66
D	-13.25	86.25	35.58	-13.24	86.24	35.58
E	5.91	307.14	41.37	5.91	313.81	41.38
F	6.04	316.21	43.27	6.04	323.14	43.31
G	6.34	327.50	44.49	6.34	334.33	44.50
H	6.35	329.16	44.67	6.35	336.02	44.68
I	6.36	327.55	44.57	6.36	334.47	44.58
J	6.43	329.48	44.87	6.43	336.30	44.87
K	6.44	345.06	48.39	6.44	345.19	48.37

(3) Estimated Capacity Factor

The Project is expected to operate at a capacity factor of approximately 24%, with an off-peak annual capacity factor of 15% and an on-peak annual capacity factor of 34% (based on net output). Detailed generation summary by month can be seen in Table III-5 of the ICF Assessment Report in Appendix 8-1.

(4) Estimated MW Output Capability Factors

The Project is expected to generate approximately 105,000 MWh/year, with an annual capacity factor of approximately 24%. The annual generation is expected to be 7 MW during the off-peak period and 17 MW during the peak period. The monthly peak and off-peak generation and capacity factor are shown in Table 8-3.

Table 8-3. Monthly Peak and Off-Peak Generation and Capacity Factors for the East Point Energy Center – 2023

Month	On-Peak Dispatch		Off-Peak Dispatch	
	Energy (MW)	Capacity Factor (%)	Energy (MW)	Capacity Factor (%)
January	8	16%	3	6%
February	13	26%	5	10%
March	18	36%	6	13%
April	22	43%	10	19%
May	23	45%	11	22%
June	24	47%	11	22%
July	25	50%	12	24%
August	24	47%	10	20%
September	20	41%	9	17%
October	14	28%	5	10%
November	9	19%	3	7%
December	6	12%	2	5%
Annual	**17**	**34%**	**7**	**15%**

Note: Peak hours are the hours between 7:00am – 11:00pm Eastern Time (Mon – Fri). The remaining hours are categorized as off-peak (including holidays and weekends).

(5) Estimated Average Annual and Monthly Production Output

See Table 8-3 above.

(6) Estimated Production Curve over an Average Year

The estimated production curve for the Project over an average year is shown in Figure III-1 of the ICF Assessment Report in Appendix 8-1. Trade secret and confidential commercial information protection will be sought for the data and it will also be provided confidentially to DPS under separate cover.

(7) Estimated Production Duration Curve over an Average Year

The estimated production duration curve for the Project over an average year is shown in Figure III-2 of the ICF Assessment Report in Appendix 8-1. Trade secret and confidential commercial information protection will be sought for the data and it will also be provided confidentially to DPS under separate cover.

(8) Estimated Energy Dispatch of Existing Must-Run Resources

The proposed Project is estimated to have minimal or no impact on existing must-run generating resources in New York.

Table 8-4. Dispatch of Must-Run Resources With and Without East Point Energy Center

Generation Type	Base Case (GWh)				Change Case- With East Point (GWh)			
	NYISO ZONE				NYSIO ZONE			
	NYCA	NY-F	NY-GHI	NY-J	NYCA	NY-F	NY-GHI	NY-J
Wind	4,605	-	-	-	4,605	-	-	-
Hydro	21,179	2,461	650	-	21,179	2,461	650	-
Nuclear	27,257	-	-	-	27,257	-	-	-
Cogen	9,984	3,734	31	7,586	9,976	3,727	31	7,582

Note: Peak hours are the hours between 7:00am-11:00 pm Eastern Time (Mon-Fri). The remaining hours are categorized as off-peak (including holidays and weekends).

8(b) Digital Copies of Inputs Used in Simulations Above

Digital copies of all inputs and outputs used in the simulations required in 16 NYCRR § 1001.8(a) are confidential and will be provided confidentially to DPS under separate cover.