EXCELSIOR ENERGY CENTER

Case No. 19-F-0299

1001.27 Exhibit 27

Socioeconomic Effects

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Exhibit 27: Socioeconomic Effects

This Exhibit will track the requirements of Stipulation 27, dated July 6, 2020, and, therefore, the requirements of 16 New York Codes, Rules and Regulations (NYCRR) § 1001.27. The Project is located in the Town of Byron in Genesee County, New York. The current demographic profiles of the communities are presented in Table 27-1.

Table 27-1. Demographics[1]

Population	Town of Byron	Genesee County	New York
2010 Population[2]	2,369	59,934	19,378,124
2018 Population	2,195	58,112	19,618,453
Median Age	43.6	43.3	38.7
Foreign born population	1.3%	2.0%	22.6%
Veterans	8.7%	10.9%	4.7%
High school graduate or higher	88.0%	86.5%	86.5%
Rural/Urban, 2010[2]			
Inside Urban Area	0.0%	41.9%	87.8%
Inside Rural Area	100.0%	58.1%	12.1%
Race and Ethnicity			
White	96.9%	91.9%	63.8%
Black or African American	1.8%	2.2%	15.6%
American Indian/Alaska Native	0.2%	0.9%	0.4%
Asian	0.7%	0.8%	8.3%
Native Hawaiian/Other Pacific Islander	0.0%	0.0%	0.0%
Some Other Race	0.0%	1.7%	8.8%
Two or more races	2.4%	2.4%	3.1%
Hispanic or Latino (any race)	1.3%	19.3%	18.9%
Total housing units	891	25,750	86.5%
Median household income (2018$)	$68,641	$65,323	$65,323
Individuals below poverty level	11.5%	13.6%	14.6%
Labor Force, ACS	1,190	31,365	10,047,659
Percent unemployed	2.5%	3.1%	6.0%
Labor Force, BLS March 2020 [3]	N/A	29,251	9,431,634
Unemployed, March 2020	N/A	1,444	400,782
Unemployment rate, March 2020	N/A	4.6%	4.2%

Table 27-1. Demographics[1]

Population	Town of Byron	Genesee County	New York

N/A indicates data are not available.

[1] Unless otherwise noted, data are from the US Census Bureau's 2014-2018 American Community Survey (ACS) 5-year estimates program.

[2] US Census 2010 decennial census.

[3] Bureau of Labor Statistics (BLS). Data are not available at the town level.

Economic Modeling

Estimates for direct jobs during construction of the Project were developed based on guidance from the Applicant's engineering, procurement, and construction (EPC) partners. Job counts by trade and the expected duration (months) of construction were based on the overall size of the Project in terms of megawatts of direct current (MWdc). The expected job counts and construction duration were evaluated to determine the average and peak labor forecast. The Applicant modeled payroll estimates and total labor costs based on the Bureau of Labor Statistics (BLS) New York wage rates for the trades required for the construction of the Project. Adjustments to wage rates and benefits were made to customize the payroll to the specific demands of the Project.[1]

The estimate of direct jobs that will be created during the Project's operation and maintenance phase was developed based on the requirements of the Excelsior Energy Center. Payroll and wage rates reflect the Applicant's expected pay scale for the Project.

The Applicant used the Job and Economic Development Impact (JEDI) model to estimate a range of likely secondary socioeconomic effects of the Project. The JEDI model was developed by the United States Department of Energy's National Renewable Energy Laboratory to estimate the economic effects associated with the construction and operation of power projects at the local or state level. For the purposes of this study, economic impacts were evaluated using the JEDI model[2] to capture the cumulative effects of the proposed Project.

The JEDI model relies on economic multipliers derived from Minnesota IMPLAN Group's IMPLAN accounting software and state data files. The multipliers capture the influence of the project

[1] Wage rate and payroll details are provided in the workpapers submitted to New York State Department of Public Service (DPS) under separate cover and pursuant to trade secret protection.
[2] The JEDI Model used is version PV12.23.16. The model has been fully updated with Applicant's cost estimates, estimates of local percentages, wages, and labor costs.

development and onsite labor impacts and the subsequent rounds of economic activity. For example, a project's salary expenditures result in local revenue and supply chain impacts on the economy as workers spend their wages or salaries on goods and services (e.g., dining at local restaurants), which consequently supports jobs in sectors that contribute to other industries (induced impacts).

JEDI addresses three measures of local direct and secondary economic impacts:

- Jobs: The jobs measure reflects changes in employment attributable to the development of an energy project. Jobs are expressed in terms of year-long, full-time equivalent (FTE) positions (2,080-hour units of labor).

- Earnings: Earnings captures the wages or salaries that are associated with jobs attributable to the development of an energy project. Earnings are expressed in terms of 2020 dollars.[3] While earnings represent wages or salaries for workers, this expense is recorded as *payroll* for the project. For the purposes of this analysis, JEDI's earnings projections will be reported as payroll.

- Output: Output measures economic activity. It includes all expenditures that are estimated to take place in an economy as a result of the development of a project. Output differs from gross regional product (GRP) in that output includes the value of production in addition to the purchases of inputs, whereas GRP is a measure of the value of production. Output is expressed in terms of 2020 dollars.

JEDI results, in terms of jobs, payroll (earnings), and output, are provided across three categories:

- Project development/construction and onsite labor impacts: These impacts include labor costs during the development, construction, and operation and maintenance (O&M) of a project. Labor costs may be associated with engineers, permitting specialists, crane operators, electricians, field technicians, and others. Parts and materials are not included in these types of impacts.

- Local revenue and supply chain impacts: This category includes all materials and equipment necessary for the construction of a project that are purchased locally. This may

[3] Conversions between dollar years were made based on the JEDI models' deflator factors. These conversions were necessary to present all monetary amounts in terms of 2019 dollars (2020$).

include wiring, hard hats, replacement parts, and the supply chain of inputs required to produce these materials. Expenses such as land easements, bookkeeping, financing, insurance, and utilities are also included in this category.

- Induced impacts: Induced impacts encompass the jobs and economic impacts that arise from spending by workers in the first two categories.

Together, the above impacts form the total direct and secondary economic impacts calculated by the JEDI models.

The JEDI models' results include two distinct time periods: construction, and operations and maintenance. Construction jobs are presented in terms of FTE jobs. While a part-time or temporary job may be considered one job by other models, it would only constitute a fraction of a job under the JEDI framework. For example, a three-month engineering job would add 0.25 FTE jobs to total estimated effects of the solar project. Equipment manufacturing jobs, such as solar module manufacturing, are captured in the construction period. The operation period results, which cover the life of a project, are reported as annual FTE jobs and annual economic activity.

For this Project, economic impact analyses were performed using the JEDI Model to analyze the construction of the Project. A range of results is provided, representing +/- 5 percent (95% to 105%) of expected economic impacts to reflect the uncertainty associated with multiplier-based, secondary impact estimates.

The Applicant customized the JEDI models using inputs specific to the Excelsior Energy Center. These project-specific inputs include expenditures, wage rates, and percentage of spending that are local to New York.

Limitations of the JEDI Model

As with most input-output screening tools, the JEDI models focus on the economic impacts directly related to Project construction and operation (gross economic impacts). The JEDI Model does not evaluate other economic impacts associated with the Project.[4] Examples of other potential impacts include:

- Potential increases or decreases in electricity rates resulting from investments in new electricity infrastructure;

[4] See https://www.nrel.gov/analysis/jedi/limitations.html for more information.

- Impacts associated with the possible cancellation of new power plants made unnecessary by the added capacity of the Project; and
- The displacement of some other type of economic activity due to investment in the proposed Project.

JEDI models do not calculate intangible or difficult to quantify effects associated with new projects. These types of effects include:

- Improvements in transmission or grid reliability;
- Changes in air or water emissions;
- Changes in water use from power generation;
- Changes in land use; and
- Stability of electricity prices that might result from the reduced fuel price risk of renewable sources of electricity.

Based on the JEDI results, this exhibit presents estimates of the annual secondary employment and economic activity likely to be generated in the vicinity of the Facility by the construction of the solar facility. To reflect the uncertainty associated with such, possibly multiplier-based, secondary impact estimates a range of estimates are provided. Limitations of the JEDI Model are discussed in more detail in later sections of this exhibit.

27(a) On-Site Construction Work-Force Impacts

The Applicant estimates a total of 290.2 FTE jobs will be generated during construction. The majority of the workers will be laborers (108.4 FTE jobs) or electricians (94.6 FTE jobs). Table 27-2 summarizes the Applicant's forecast of the employment by job type associated with the construction of the Project.

Table 27-2. Applicant's Forecasted FTE Jobs during Project Construction

Type of Job	Number of FTE Jobs[1] Created
Laborers	108.4
Electricians	94.6
Equipment Operator	45.6
Construction Managers	16.8
Foreman	24.8
Total FTE Jobs	***290.2***

Note: *Numbers shown may not sum to totals because of rounding.*

[1]*Jobs are expressed in terms of year-long, full-time equivalent (FTE) positions (2,080-hour units of labor).*

The Applicant has evaluated the expected quarterly total level of labor that will be required during the construction phase of the Project. Table 27-3 summarizes the Applicant's forecast of the employment associated with the construction of the Project. This forecast is not based upon JEDI modeling.

Table 27-3. Applicant's Forecasted Labor Force during Project Construction

Timing of Construction Activity	Construction Labor	Engineers and Other Professional Services	Total
2nd Quarter 2022, Average	134.0	12.0	146.0
3rd Quarter 2022, Average	235.0	12.0	247.0
4th Quarter 2022, Average	156.3	12.0	168.3
1st Quarter 2023, Average	67.3	1.0	68.3
2nd Quarter 2023, Average	235.0	12.0	247.0
3rd Quarter 2023, Average	178.7	12.0	190.7
4th Quarter 2023, Average	78.3	8.0	86.3
Peak Employment (3rd Quarter, 2022 and 2nd Quarter, 2022)	**235.0**	**12.0**	**247.0**

Note: *Numbers shown may not sum to totals because of rounding.*

Employment is forecast to peak twice, during the 3rd Quarter, 2022 and the 2nd Quarter, 2023, with a slow-down over the intervening winter period (1st Quarter, 2023). During peak employment, there will be an average of 247 workers on the job. Of this total, 235 jobs will be in the construction discipline and 12 jobs will be onsite managers.

The Applicant intends to hire, to the extent practicable, local labor for the construction of the Excelsior Energy Center, in accordance with the Genesee County Economic Development Center's *Local Construction Labor Policy*. The policy requires that at least 90 percent of the total number of Project employees, excluding construction project management, working on the Project Site reside within the Local Labor Area. [5] The *Local Labor* Area includes the following Counties: Genesee, Orleans, Monroe, Wyoming, Livingston, Wayne, Ontario, Seneca, Yates, Niagara, Erie, Chautauqua, Cattaraugus and Allegany. The 14-county Local Labor Area is home to a population of almost 2.6 million people,[6] with a combined labor force of over 1.2 million.[7]

27(b) Construction Direct and Supply Chain Impacts

As noted above, independent of the JEDI model, the Applicant estimated the construction payroll by trade for the anticipated 20-month construction period. As shown in Table 27-4, the Project's construction payroll is forecast to be $40.8 million. The payroll estimate includes wages and salaries, employer-paid insurance costs, paid leave, and payroll taxes. Additional jobs and payroll will be generated during the permitting and engineering processes.

Table 27-4. Applicant's Forecasted Labor Force during Project Construction

Type of Job	Number of FTE Jobs[1] Created	Estimated Payroll[2]
Laborers	108.4	$12,088,583
Electricians	94.6	$14,061,974
Equipment Operator	45.6	$ 6,262,005
Construction Managers	16.8	$ 3,852,382
Foreman	24.8	$ 4,571,199
Total FTE Jobs	***290.2***	***$40,836,143***

Note: Numbers shown may not sum to totals because of rounding.

[1]Jobs are expressed in terms of year-long, full-time equivalent (FTE) positions (2,080-hour units of labor).

[2]Payroll includes wages and salaries, benefits, and payroll taxes.

[5] Genesee County Economic Development Center, 2020. The Policy applies to projects with $5 million or more in projected/committed capital investment for facility construction that receive Financial Assistance (including a sales tax exemption, mortgage recording tax exemption, real property tax abatement, and/or bond proceeds) from the Genesee County Economic Development Center.
[6] US Census Bureau, 2020
[7] Bureau of Labor Statistics (BLS) 2020.

Table 27-5 below presents the expected total direct expenditures during construction of the Project. In-state (local) expenditures are also presented.

Table 27-5. Direct Expenditures during Development and Construction of the Project

	Cost (2020$)	Local NY Share	Local NY Spending
Installation Costs			
Materials & Equipment			
Mounting (rails, clamps, fittings, etc.)	[redacted]	[redacted]	[redacted]
Modules and Inverter	[redacted]	[redacted]	[redacted]
Electrical (wire, connectors, breakers, etc.)	[redacted]	[redacted]	[redacted]
Subtotal	[redacted]		[redacted]
Labor			
Installation	[redacted]	[redacted]	[redacted]
Other Costs/Development Costs			
Permitting[1]	[redacted]	[redacted]	[redacted]
Other Costs	[redacted]	[redacted]	[redacted]
Business Overhead[2]	[redacted]	[redacted]	[redacted]
Subtotal	[redacted]		[redacted]
Subtotal All Costs (without sales tax)	[redacted]		[redacted]
Sales Tax (Materials & Equipment Purchases)[3]	[redacted]	[redacted]	[redacted]
Total	[redacted]		[redacted]

Notes: Numbers shown may not sum to totals because of rounding.

[1]Permitting includes the fees paid to local governments.

[2]Business Overhead includes engineering and environmental permitting costs.

[3]Excelsior Energy Center may apply for sales tax abatement through a Payment-in-Lieu-of-Taxes agreement.

As shown above, the Applicant estimates the Project costs to be roughly [redacted]. These costs include [redacted] in labor costs. Permitting, a local expense, is anticipated to be [redacted]. Approximately [redacted] of Other Costs are anticipated to be spent locally. These Other Costs include materials such as concrete and gravel. Business Overhead, which includes engineering and environmental permitting costs, is estimated to total [redacted], with [redacted] spent in-state ([redacted]). Sales tax on materials and equipment purchases may be abated through a potential Payment in Lieu of Taxes agreement. Total project expenditures within New York are projected to be [redacted].

The JEDI Model provides additional detail on spending at the industry level. The largest New York expenditures during the construction phase of the Project will be in the construction/installation industry, with roughly $47.2 million spent locally. Table 27-6 presents this detail.

Table 27-6. Direct Local Expenditures by Industry during Project Development and Construction (2020$)

Industry	Local NY Expenditures[1]
Construction/Installations - Non-Residential	$40,836,143
Wholesale Trade	$ 607,524
Retail trade	$ 60,285
Transportation, Communications, Public Utilities	$ 77,725
Office Services	$ 3,011,329
Architectural and Engineering Services	$ 302,400
Other services[2]	$ 2,270,036
Government	$ 71,359
Total	**$47,236,801**

Note: Industries with no local NY expenditures are not shown.

27(c) Indirect (or Secondary) and Induced Impacts during the Construction Phase

Indirect and Induced Impacts

As discussed previously, the JEDI model was used to estimate the likely secondary socioeconomic effects of the Project's spending. The indirect impacts are economic effects associated with linked sectors in the economy that are upstream of the direct impacts, such as suppliers of hardware used to make the equipment installed onsite. For the purposes of this discussion, estimates are assumed to vary from 95% to 105% of the indirect, and induced impact estimates developed for this Project. The range accounts for the small changes that take place over time in the IMPLAN multipliers used in the JEDI model. Estimates for New York are for the entire state, including Genesee County.

Table 27-7 below presents ranges of the indirect impacts estimated to be generated in the vicinity of the solar facility by its construction.

Table 27-7. Indirect Local New York Impacts by Industry during Development and Construction of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (2020$)	Output Impacts (2020$)
Construction/ Installations - Non Residential	84.8 to 93.8	$5,516,000 to $6,096,000	$14,147,000 to $15,636,000
Wholesale Trade	1.0 to 1.1	$82,000 to $91,000	$206,000 to $227,000
Retail trade	0.1 to 0.1	$7,000 to $8,000	$20,000 to $22,000
Transportation, Communications, Public Utilities	0.1 to 0.2	$12,000 to $14,000	$34,000 to $38,000
Office Services	2.3 to 2.6	$202,000 to $223,000	$495,000 to $547,000
Architectural and Engineering Services	0.5 to 0.6	$50,000 to $56,000	$116,000 to $129,000
Other services	3.4 to 3.8	$299,000 to $33,0000	$780,000 to $862,000
Government	0 to 0	$3,000 to $3,000	$7,000 to $8,000
Total	**92.3 to 102.0**	**$6,171,000 to $6,820,000**	**$15,804,000 to $17,468,000**

Note: *Numbers shown may not sum to total because of rounding and because industries with small impacts (less than $1,000 in earnings) are not shown.*

Indirect local impacts during the construction phase are estimated to be between 92.3 and 102.0 FTE jobs, payroll totaling between $6.2 million and $6.8 million, and output totaling between $15.8 million and $17.5 million. The construction/installation industry in New York is expected to experience the largest impact, with between 84.8 and 93.8 FTE jobs and between $5.5 million and $6.1 million in payroll and between $14.1 million and $15.6 million in output.

Induced impacts include the jobs and economic impacts generated from spending by workers whose jobs result from direct or indirect impacts of the Project. Table 27-8 presents ranges of the induced impacts likely to be generated in the vicinity of the solar facility by its construction.

Table 27-8. Induced Local Impacts by Industry during Construction of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2020$)	Output Impacts (Millions 2020$)
Construction/ Installations - Non Residential	70.3 to 77.7	$5,046,000 to $5,578,000	$13,023,000 to $14,394,000
Wholesale Trade	1.1 to 1.2	$75,000 to $83,000	$194,000 to $215,000
Retail trade	0.1 to 0.1	$9,000 to $10,000	$22,000 to $25,000
Transportation, Communications, Public Utilities	0.1 to 0.1	$8,000 to $9,000	$21,000 to $24,000
Office Services	9.0 to 9.9	$651,000 to $72,0000	$1,681,000 to $1,858,000
Architectural and Engineering Services	0.9 to 1.0	$63,000 to $69,000	$162,000 to $179,000
Other services[2]	4.0 to 4.5	$309,000 to $341,000	$796,000 to $880,000
Government	0.2 to 0.2	$14,000 to $16,000	$36,000 to $40,000
Total	**85.6 to 94.6**	**$6,175,000 to $6,825,000**	**$15,936,000 to $17,614,000**

Note: *Numbers shown may not sum to total because of rounding and because industries with small impacts (less than $1,000 in earnings) are not shown.*

As shown in Table 27-8 above, induced impacts in New York are estimated to be between 85.6 and 94.6 FTE jobs, payroll of between $6.2 million and $6.8 million, and output of between $15.9 million and $17.6 million. The construction industry is expected to experience the largest impact, with between 70.3 and 77.7 FTE jobs and between $5.0 million and $5.6 million in payroll.

Annual Net Secondary Effects

As discussed previously, the JEDI Model addresses the gross economic impacts of the proposed Project. Annual net secondary effects from the Project's construction include consideration of the above modeled impacts, as well as other difficult to quantify considerations that may be associated with the Project. The JEDI Model, for example, does not consider the following impacts that would occur as a result of the construction of the proposed Project:

- The displacement of some other type of economic activity due to investment in the proposed Project; and
- Changes in land use.

Economic displacement occurs when increases in economic activity in one business sector or geographic area leads, indirectly, to decreases in economic activity elsewhere. While displacement of some participating landowner farming revenue will occur, it will be offset by lease payments to the landowners from the Applicant. In any event, even if there were a net loss, the overall impact on investment in New York is expected to be negligible, as the Gross Domestic Product (GDP) for the state as whole was $1.73 trillion in 2018, with GDP attributable to construction of $53.8 billion.[8]

Changes in land use are addressed in Exhibit 4. The land use analysis found that although the Project is sited within mapped Agricultural Districts, the Facility will only occupy 2 percent of all lands designated as Agricultural Districts within Genesee County and 19 percent of all lands designated as Agricultural Districts within the Town of Byron (see Exhibit 4). Additionally, within the Project Area, only 29 percent of land to be disturbed by construction and/or operation of the Project is classified as Prime Farmland. The lease or purchase payments provided to landowners will help stabilize revenues for local participating farms (as crop and dairy prices often fluctuate from year to year) and revenues paid to landowners are typically reinvested in the community, helping to create jobs and improve the local economy. This diversified income helps support the agricultural community base in the area.

27(d) Operation and Maintenance Employment Impacts

The Applicant has evaluated the expected annual level of labor that will be required during the O&M phase of the Project. The jobs presented here are expected to be performed by local New York workers. Table 27-9 summarizes the Applicant's forecast of the annual employment associated with the O&M of the Project.

[8] Source: Bureau of Economic Analysis (2020).

Table 27-9. Applicant's Forecasted Annual Labor Force during Project Operation and Maintenance

Type of Job	Number of FTE Jobs Created	Payroll (2020$)[1]
Solar Technician (preventive and corrective maintenance)	2.0	$176,678
Tech Leader	1.0	$128,367
High Voltage Technician	0.1	$ 11,282
Total	**3.1**	**$316,327**

[1]Payroll includes wages and salaries, benefits, and payroll taxes.

Based on the Applicant's evaluation, the employment during the O&M phase will be 3.1 FTE jobs. Payroll associated with these jobs is expected to be $316,327 annually.

Table 27-10 below presents the total direct expenditures during the O&M phase of the Project. Labor costs were estimated by the Applicant based on anticipated employment levels, wage rates by worker type, and overhead (including insurance benefits, taxes, and unpaid leave). Materials and equipment costs were also developed by the Applicant specifically for the Excelsior Energy Center. The expected local shares of spending and local spending amounts are also included.

Table 27-10. Annual Direct Expenditures during Project Operation and Maintenance.

	Cost (2020$)	Local Share	Local Spending (2020$)
Labor: Technicians	$316,327	100%	$316,327
Materials and Equipment	$573,000	100%	$573,000
Subtotal All Costs (without sales tax)			
Sales Tax (Materials & Equipment Purchases)	$45,840	100%	$45,840
Total	**$935,167**		**$935,167**

Notes: Numbers shown may not sum to totals because of rounding.

As shown above, annual O&M costs are estimated to be $935,167, with $316,327 in labor costs, $573,000 in materials and equipment costs, and $45,840 in sales taxes. The annual expenditure of $573,000 in materials and equipment costs is expected to be spent locally. Over 30 years, 93 FTE jobs will be generated by the Project. Payroll for the FTE jobs will total an estimated $9.5

million, in 2020 dollars. The Project is expected to pay $1.4 million in sales taxes over the 30-year operational period.

In addition to the above expenditures, the Applicant will make lease payments to local landowners for an estimated 1,650 acres.[9] The payments are anticipated to total $3.3 million in the first year and escalate at 2 percent annually. Total payments over thirty years is estimated to be roughly $133.9 million.

27(e) Secondary Operation and Maintenance Impacts

Indirect Impacts

As shown in Table 27-11 below, annual indirect local impacts during the O&M phase are expected to total between 1.8 and 2.0 FTE jobs, with payroll totaling between $165,000 and $182,000 and output totaling between $434,000 and $479,000. The Government industry is expected to experience the largest annual impact, with approximately 0.6 FTE jobs, between $58,000 and $64,000 in payroll, and between $145,000 and $160,000 in output.

Table 27-11. Annual Indirect Local Impacts by Industry during Project Operation and Maintenance

Industry	Labor Impacts (Jobs)	Earning Impacts (2020$)	Output Impacts (2020$)
Wholesale Trade	0.5 to 0.6	$45,000 to $50,000	$114,000 to $126,000
Retail trade	0.1 to 0.1	$11,900 to $13,200	$33,000 to $36,000
Transportation, Communications, Public Utilities	0.2 to 0.3	$21,000 to $2,3000	$57,000 to $63,000
Insurance and Real Estate	0.2 to 0.3	$20,000 to $22,000	$61,000 to $68,000
Finance	0 to 0	$0 to $1,000	$1,100 to $1,200
Other services[2]	0.1 to 0.1	$8,000 to $9,000	$21,000 to $24,000
Government	0.6 to 0.6	$58,000 to $64,000	$145,000 to $160,000
Total	1.8 to 2.0	$165,000 to $182,000	$434,000 to $479,000

Note: *Numbers shown may not sum to total because of rounding and because industries with small impacts (less than $1,000 in earnings) are not shown.*

[9] Leased acreage is estimated. The final acreage leased will vary based on operational needs.

Table 27-12 presents the annual induced local impacts by industry. Annual induced impacts are expected to generate between 4.9 and 5.4 New York FTE jobs, payroll of between $389,000 and $430,000, and output of between $1.0 million and $1.1 million.

Table 27-12. Annual Induced Local Impacts by Industry during Project Operation and Maintenance

Industry	Labor Impacts (Jobs)	Earning Impacts (2020$)	Output Impacts (2020$)
Wholesale Trade	0.6 to 0.6	$42,000 to $46,000	$107,000 to $119,000
Retail trade	0.2 to 0.2	$14,100 to $15,,600	$36,000 to $40,000
Transportation, Communications, Public Utilities	0.2 to 0.2	$14,000 to $15000	$36,000 to $40,000
Insurance and Real Estate	0.2 to 0.2	$15,000 to $16,000	$38,000 to $42,000
Finance	0 to 0	$700 to $700	$1,700 to $1,900
Other services[2]	0.1 to 0.1	$8,000 to $9,000	$22,000 to $24,000
Government	3.6 to 4.0	$295,000 to $326,000	$763,000 to $843,000
Total	4.9 to 5.4	$389,000 to $430,000	$1,005,000 to $1,111,000

Note: *Numbers shown may not sum to total because of rounding and because industries with small impacts (less than $1,000 in earnings) are not shown.*

Annual Net Secondary Effects

As discussed previously, the JEDI model results for the proposed Project address secondary economic effects. Annual net secondary effects from the Project's O&M include the impacts discussed above and other difficult to quantify impacts associated with the Project. The JEDI Model, for example, does not consider the following impacts that are likely to occur as a result of the operation of the Project:

- Potential increases or decreases in electricity rates resulting from investments in new electricity or fuel infrastructure;
- Stability of electricity prices that might result from the reduced fuel price risk of renewable sources of electricity.
- Impacts associated with the possible displacement of new power plants made unnecessary by the added capacity of the proposed Project;
- Improvements in transmission or grid reliability;

- Changes in air or water emissions; and
- Changes in water use from power generation.

The Project is projected to have a positive effect on zonal prices in the control area load zone in which it is located. New York Independent System Operator (NYISO) Zone B is expected to experience a reduction in the average zonal prices of approximately $0.92/MWh in 2023. If this reduction helps keep retail electric rates lower than they would otherwise be, there would be additional positive impacts to New York's economy arising from the operation of the proposed Project. Conversely, higher retail rates would have a negative impact on the state's economy. The Project may also support increased stability in electricity prices by reducing the fossil fuel price risk.

The Applicant is not aware of any reliable method to determine if the Project's added solar capacity would result in the cancellation of new power projects. Rather, the Project is being driven by New York State law, NYSPSC's Clean Energy Standard and the NYS State Energy Plan. The additional solar capacity is vital to meeting the state's goals to have 70 percent of energy generation produced from renewable energy sources by 2030 to achieve a 40 percent reduction in greenhouse gas emissions from the 1990 level by 2030 and to generate electricity carbon free by 2040 (Climate Leadership and Community Protection Act (CL&CPA) of 2019). Positive impacts to air quality are also projected, with an anticipated reduction in annual statewide emissions by 107 tons of SO_2, 73 tons of NO_x, and 205,432 tons of CO_2 (see Exhibit 8).

As a solar power generating facility, the Project will not use or emit any water discharges. There is no public water supply interconnection required for the operation of the Project, as stated in Exhibit 38. The Project will provide power generation without using water, which is a benefit when compared to thermoelectric generating facilities.

27(f) School District Impacts During the Construction and Operation Phases

The Project is located within the Byron-Bergen Central School District. The largest impact in terms of jobs would be during the construction period. Families do not, however, typically relocate for short-term constructions jobs. Further, it is anticipated that some portion of the workers during both the construction and O&M phases of the Project will be local hires. No negative impacts to school district, therefore, are anticipated during the construction phase of the Project.

During the O&M phase of the Project, total annual impacts (direct, indirect, and induced) associated with employment are forecast to be between 9.8 and 10.5 FTE jobs. Long term population impacts in the school districts are anticipated to be minimal during the O&M phase of the Project. Payments in Lieu of Taxes (PILOT) payments are anticipated to be paid to the Byron-Bergen Central School District during the O&M phase of the Project. This analysis does not include potential benefits from any Host Community Agreement that may be negotiated with the Town of Byron.

27(g) Municipal, Public Authority, and Utility Services Impacts during the Construction and Operation Phases

As described above, population impacts from the construction and operation of the Project are expected to be negligible. In addition, the cost of any services required by Project employees living within the local municipalities would be offset by property taxes (or PILOT payments) and the applicable service fees. The Project construction and operation, however, are not anticipated to place any burdens on local services but will likely generate PILOT revenue or payments from the potential Host Community Agreement (HCA) for the taxing jurisdictions.

27(h) Designated Tax Jurisdiction, Tax and Payment Impacts

The Project includes property within three taxing jurisdictions that are expected to receive PILOT revenues or payments as part of a potential HCA. The jurisdictions are:

- Genesee County,
- Town of Byron, and
- Byron-Bergen Central School District.

These jurisdictions will benefit from a PILOT agreement or a potential HCA as described in the following section, and from additional economic activity in the vicinity of the Project. New York State is also anticipated to benefit from additional tax revenue generated by the construction and O&M of the Project. After the 20-year PILOT period, the Excelsior Energy Center will pay property taxes to the local jurisdictions for the remainder of the Project's useful life.

27(i) Incremental Amount of PILOT Agreements and an HCA

The Applicant anticipates executing PILOT agreements with the Genesee County Industrial Development Agency for the benefit of Genesee County, the Byron-Bergen Central School District, and Town of Byron, which will require annual PILOT payments for 20 years. An additional

HCA expected to be executed with the Town of Byron. While the specific terms of the PILOT agreement and HCAs have not yet been negotiated, these agreements will increase the revenues of the local taxing jurisdictions and will represent a significant portion of their total tax levy. For the purposes of this Exhibit, annual PILOT and HCA payments are estimated to be $1,540,000 beginning in 2022. Total PILOT and HCA payments over the 20-year agreement period are estimated to exceed $37.4 million. Table 27-13 below details the estimated PILOT and HCA payments to each taxing jurisdiction.

Table 27-13. Anticipated Annual and Cumulative PILOT and HCA Payments for Solar Energy Center

Taxing Jurisdiction	2022 Annual Payment	Cumulative (20-year) Payment
Town of Byron	$ 473,096	$11,494,980
Byron-Bergen Central School District	$ 752,926	$18,294,124
Genesee County	$ 313,978	$7,628,846
Total	**$1,540,000**	**$37,417,949**

Notes: Payments related to the solar energy center are anticipated to increase over time by 2% per year. Numbers shown may not sum to totals because of rounding.

The Byron-Bergen Central School District is anticipated to receive the largest payments, with a 20-year total of $18.3 million. The Town of Byron is expected to receive $11.5 million over the 20-year period, with Genesee County receiving a total of $7.6 million over 20 years.

27(j) Comparison of Fiscal Costs to Jurisdictions

As discussed previously, the Project is not anticipated to impose fiscal costs related to the services provided by the local taxing jurisdictions. Employment during the construction phase will be temporary and is not expected to result in the relocation of families. Job-related impacts during the O&M of the solar energy center are relatively small. With the expected payments associated with the PILOT agreement and the HCA, the Project should result in positive fiscal impacts for the local jurisdictions. After the 20-year PILOT and HCA period, the Excelsior Energy Center will pay property taxes to the local jurisdictions for the remainder of the Project's useful life.

27(k) Analysis of Local Emergency Response

Exhibit 18 outlines safety and security for Project. Detailed information regarding the emergency response procedures for possible contingencies (such as a fire emergency) is found in the Emergency Response Plan (ERP) in Appendix 18-2. The ERP includes information on local fire departments and local police/sheriff departments/offices. In the event of an emergency, the Site Leader will assess the situation and perform the proper actions and procedures as outlined in the ERP. This may include potential evacuation and contacting emergency services.

The ERP for the Project will be shared with the local emergency response teams. Local emergency response teams will be given an opportunity to review these plans, ask questions and provide suggestions. The Applicant understands the importance of coordination with local fire, police and other emergency services and will work to ensure that they are kept updated on the status of the Project and are made aware of potential safety and security emergencies. Preliminary introductions and discussions have been conducted with local fire departments and sheriff's office as described in the Public Involvement Plan (PIP) meeting log and additional discussions will occur prior to construction and prior to the start of operations. The Applicant will work with local emergency responders to coordinate any training that may be necessary. To the knowledge of the Applicant, no equipment not presently owned by the public fire department or other first responders will be needed to respond to emergencies at the Project either during the construction or operation of the Project.

27(l) Smart Growth Infrastructure Compliance Impacts

The Project is a privately-funded energy project and, as such, is not subject to New York Environmental Conservation Law Article 6, Section 107 (ECL § 6-107) requiring the construction of new or expanded "public infrastructure" to meet certain Smart Growth Criteria. New York State's Smart Growth Public Infrastructure Policy Act outlines 10 criteria for evaluating public infrastructure. An additional criterion was added at a later date. While not required, the Project's consistency with Smart Growth Criteria is addressed below for illustrative purposes. Under the statute, state infrastructure agencies shall not approve, undertake, or finance a public infrastructure project, unless the project, to the extent practicable, meets the relevant criteria set forth in the document (ECL § 6-107).

Criteria 1: To advance projects for the use, maintenance or improvement of existing infrastructure

The development of the Project will improve the State's existing energy infrastructure by creating an economically viable, solar-powered electrical-generating facility that provides renewable energy to the New York State power grid. The Project will generate up to 280 MW of renewable energy and provide 20 MW/4 hours of energy storage that will be provided to the New York State electric system that is managed by the NYISO. The Project will use the existing electric system for the distribution of electricity to end users. Existing transportation infrastructure will be used for the conveyance of equipment and construction materials. No long-term impacts to the transportation infrastructure are anticipated.

Based on the contribution to the state electric system and the limited use of transportation infrastructure, the Project is consistent with Smart Growth Criteria 1.

Criteria 2: To advance projects located in municipal centers

New York State's Smart Growth Public Infrastructure Policy Act defines "municipal centers" as:

> *areas of concentrated and mixed land uses that serve as centers for various activities, including, but not limited to, central business districts, main streets, downtown areas, brownfield opportunity areas, downtown areas of local waterfront revitalization program areas, transit-oriented development, environmental justice areas, and hardship areas (ECL § 6-107),*

as well as:

> *areas adjacent to municipal centers, which have clearly defined borders, are designated for concentrated development in the future in a municipal or regional comprehensive plan, and exhibit strong land use, transportation, infrastructure and economic connections to a municipal center; and areas designated in a municipal or comprehensive plan, and appropriately zoned in a municipal zoning ordinance, as a future municipal center (ECL § 6-107).*

The development of solar power projects requires a large land area. As such, solar projects, such as this, are incompatible with municipal centers. Therefore, compliance with this criterion is impracticable. Additionally, siting a solar project requires willing landowners and access to a point of interconnection (POI) in order to provide the electricity generated to the electric system that is managed by the NYISO.

Criterion 3: To advance projects in developed areas or areas designated for concentrated infill development in a municipally approved comprehensive land use plan, local waterfront revitalization plan and/or brownfield opportunity area plan

Solar projects require a large land area and, thus, are incompatible with infill development and waterfront revitalization. The Project is not located in a designated brownfield area. Therefore, compliance with this criterion is impracticable. Additionally, siting a scale solar project requires willing landowners and access to a point of interconnection in order to provide the electricity generated to the electric system that is managed by the NYISO.

Criterion 4: To protect, preserve and enhance the state's resources, including agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archeological resources

The Project is consistent with Criterion 4. Exhibits 4,17, 20, 21, 22, 23, and 24, and related studies, analyze the potential effects on agricultural land, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and significant historic and archaeological resources. These analyses illustrate that the Project has avoided and/or minimized impacts to the relevant resources to the maximum extent practicable. Any remaining impacts are outweighed by the benefit provided by the Project's generation of up to 280 MW of renewable energy and providing 20 MW/4 hour of energy storage, which will enhance the state's air quality.

Criterion 5: To foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and the integration of all income and age groups

The proposed Project is in the rural community of Byron. The area is not currently proposed for mixed land uses, compact development, or the development of diverse and affordable housing in the proximity to places of employment, recreation and commercial development. Further, as mentioned previously, a solar project requires significant open space and, thus, is incompatible with downtown revitalization. The location is also not in a brownfield. Compliance with these criteria, therefore, is impracticable. Additionally, siting a solar project requires willing landowners and access to a point of interconnection in order to provide the electricity generated to the electric system that is managed by the NYISO.

Criterion 6: To provide mobility through transportation choices including improved public transportation and reduced automobile dependency

The Project will not be designed to impact transportation choices in the area. Therefore, compliance with this criterion is impracticable.

Criterion 7: To coordinate between state and local government and intermunicipal and regional planning

The Applicant has been involved in public outreach to local government and planning agencies throughout the development and review of the Project, in accordance with the requirements of the Article 10 process and the PIP plan prepared specifically for the Project. The stakeholder list and information on the public coordination efforts are included in Exhibit 2 and its appendices.

Criterion 8: To participate in community-based planning and collaboration

The Applicant has conducted and will continue to conduct stakeholder outreach throughout the development and review of the proposed Project. These efforts have been conducted in accordance with the requirements of the PIP, which includes stakeholder consultation and other forms of engagement, public education, public meetings, ample notification periods, and public comment periods at key milestones (see Exhibit 2 and the PIP for more information). Information is also available to the community via the website www.excelsiorenergycenter.com. These outreach efforts satisfy the criterion related to participation in community-based planning and collaboration.

Criterion 9: To ensure predictability in building and land use codes

The Applicant's Project will have no influence over building and land use codes in Genesee County or in the Town of Byron.

Criterion 10: To promote sustainability by strengthening existing and creating new communities which reduce greenhouse gas emissions and do not compromise the needs of future generations, by among other means encouraging broad based public involvement in developing and implementing a community plan and ensuring the governance structure is adequate to sustain its implementation

Solar power, a renewable energy source, generates electricity without the by-product of greenhouse emissions and can reduce the dependence on conventional power plants, thereby reducing the emissions of conventional air pollutants. In fact, the Project is expected to reduce

NO_x, SO_2 and CO_2 emissions from the power sector in New York. In 2023, the Project is expected to reduce the annual statewide emissions by 107 tons of SO_2, 73 tons of NO_x, and 205,432 tons of CO_2 (see Exhibit 8).

The Project will help the state achieve the goals of having 70 percent of energy generation produced from renewable energy sources by 2030, a 40 percent reduction in greenhouse gas emissions from the 1990 level by 2030, and carbon-free generation of electricity by 2040 (CL&CPA of 2019). As this Project will expand the state's clean, renewable energy infrastructure and reduce greenhouse gas emissions, the Project is consistent with and will help the state achieve its goals in Criterion 10.

Criterion 11 (effective March 21, 2015): To mitigate future physical climate risk due to sea level rise, and/or storm surges and/or flooding, based on available data predicting the likelihood of future extreme weather events, including hazard risk analysis data if applicable

The Project is consistent with New York's efforts to expand reliance on renewable energy sources and reduce greenhouse gas (GHG) emission. As described in *Climate Smart Communities Guide to Local Action: Taking Steps to Combat Climate Change*, reducing greenhouse gas emissions "will help stabilize atmospheric GHG at manageable levels and avoid severe climatic changes." The State recognizes that this action will "minimize the risks of climate change and reduce its long-term costs" (New York Department of Environmental Conservation (NYSDEC 2017). Solar power, as a zero-emission, renewable energy source, not only expands available power generation capabilities without increasing greenhouse gas emissions, the addition of a solar power project will result in a decrease in existing GHG emission levels, as solar power displaces generation from fossil fuel facilities. Therefore, the Project is expected to have a positive impact on the mitigation of future physical climate risk, thereby supporting Smart Growth Criterion 11.

27(m) Feasibility of Providing Local Access to Energy Generation

If the Town of Byron were to become a Community Choice Aggregation (CCA), the local community could have access to energy generated by the Project. The purpose of a CCA is to allow participating local governments to procure energy supply service and distributed energy resources for eligible energy customers in the community. These customers would have the opportunity to opt out of purchasing power from the existing power provider, while maintaining transmission and distribution service from that utility.

CCA allows local governments to work together through a shared purchasing model to put out for bid the total amount of electricity and/or natural gas being purchased by eligible customers within the jurisdictional boundaries of participating municipalities. Eligible customers have the opportunity to have more control to lower their overall energy costs, to spur clean energy innovation and investment, to improve customer choice and value, and to protect the environment, thereby fulfilling an important public purpose. New York State Energy Research and Development Authority (NYSERDA) has developed a toolkit to assist local governments and CCA Administrators to develop CCA programs in New York State.[10]

An alternative for the Project discussed in Exhibit 9 is to incorporate a community solar facility. If this alternative is adopted, there would be cost savings to any subscribers, including any municipal entities, that choose to subscribe. These savings would be in the form of a 10 percent reduction in energy unit costs provided in the form of an energy credit on the subscriber's utility bill.

27(n) Statement on Actual Job Tracking and Tax Payment to Local Jurisdiction

The Applicant is committed to tracking and report the actual number of direct jobs created during the construction and operational phases of the Project. Additionally, PILOT or tax payments to local jurisdictions made during the course of the Project will be recorded and reported.

27(o) Socioeconomic Impact Estimate Workpapers

Workpapers associated with the socioeconomic impact analysis presented in this Exhibit will be provided to the New York State Department of Public Service (DPS) under separate cover.

[10] See https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Communities/Clean-Energy-Communities-Program-High-Impact-Action-Toolkits/Community-Choice-Aggregation for additional information.

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