



EIGHT POINT WIND ENERGY CENTER

Case No. 16-F-0062

1001.27 Exhibit 27

Socioeconomic Effects

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Exhibit 27: Socioeconomic Effects

The proposed Project is located in Steuben County in the Southern Tier Region of New York. Two municipalities are located within the Project Area (Greenwood and West Union), with an additional two municipalities located within the related transmission line project area (Hartsville and Hornellsville). The current demographic profiles of the communities are presented in Table 27-1 below:

Table 27-1. Demographics (a)

Population	Greenwood	West Union	Hartsville	Hornellsville	Steuben County	New York
2010 Population (b)	801	312	609	4,151	98,994	19,378,110
2015 Population	764	366	573	4,110	97,631	19,795,791
Median Age	44.7	47.2	46.1	48.5	42.0	38.1
Foreign born population	14	14	11	96	2,405	4,422,741
Veterans	62	35	44	492	8,965	828,586
High school graduate or higher	92.7%	85.3%	96.7%	92.4%	89.3%	85.6%
<i>Rural/Urban, 2010 (b)</i>						
Inside Urban Area	0.0%	0.0%	0.0%	58.3%	39.6%	87.9%
Inside Rural Area	100.0%	100.0%	100.0%	41.7%	60.4%	12.1%
<i>Race and Ethnicity</i>						
White	98.3%	97.8%	98.8%	96.4%	95.0%	64.6%
Black or African American	0.0%	0.0%	0.3%	0.0%	1.6%	15.6%
American Indian/Alaska Native	0.0%	0.0%	0	0.3%	0.2%	0.4%
Asian	0.5%	0.3%	0	1.1%	1.5%	8.0%
Native Hawaiian/Other Pacific Islander	0.0%	0.0%	0	0.0%	0.0%	0.0%
Some Other Race	0.0%	0.0%	0	0.1%	0.3%	8.6%
Two or more races	1.2%	1.9%	0.9%	1.9%	1.4%	2.9%
Hispanic or Latino (any race)	0.0%	0.0%	0.2%	1.5%	1.5%	18.4%
Total housing units	474	265	419	2,067	48,849	8,171,725
Median household income	\$54,583	\$41,771	\$53,984	\$41,830	\$47,280	\$59,269
Individuals below poverty level	10.3%	13.4%	5.6%	15.3%	16.3%	15.7%
Labor Force, ACS	395	525	273	1,912	47,140	10,107,278
Percent unemployed	6.6%	8.2%	5.9%	11.8%	8.2%	8.2%
Labor Force, BLS June 2017(c)	N/A	N/A	N/A	N/A	43,283	9,739,671
Unemployed, June 2017	N/A	N/A	N/A	N/A	2,293	440,982
Unemployment rate, June 2017	N/A	N/A	N/A	N/A	5.3%	4.5%

(a) Unless otherwise noted, data are from the US Census Bureau's 2011-2015 American Community Survey (ACS) 5-year estimates program.

(b) US Census 2010 decennial census.

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

The Job and Economic Development Impact (JEDI) model was used to determine the overall direct socioeconomic effects of the Project. The cumulative socioeconomic effects of the Project include both the effects related to the Project itself and the effects related to the 16.5-mile 115 kV transmission line

that is essential for the Project to be able to interconnect to the electric system. Impacts of the Project and the transmission line are provided separately in each section below in order to evaluate the impacts of the Project and the transmission line individually. 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. Separate JEDI models are available for wind projects and for transmission lines. For the purposes of this study, economic impacts were evaluated using both the JEDI Wind Model and the JEDI Transmission Line Model to capture the cumulative effects of the proposed project.

JEDI uses project-specific inputs combined with default data to estimate the number of jobs and other economic impacts to a local area from the construction and operation of a new power project. Default inputs are derived from industry norms and are based on interviews with industry expert and project developers. Certain default values, such as wages, vary by state.

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

- **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 capture the wages or salaries that are associated with jobs attributable to the development of an energy project. Earnings are expressed in terms of 2017 dollars¹. 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 2017 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.

¹ 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 2017 dollars (2017\$).

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 include wiring, hard hats, replacement parts, and the supply chain of inputs required to produce these materials. Expenses such as land easements, bookkeepers, 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 economic impacts calculated by the JEDI models. It should be noted that the JEDI models do not address potential increases or decreases in electricity rates resulting from investments in new electricity. The models also do not address the benefits of renewable energy.

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 wind project. Equipment manufacturing jobs, such as blade 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 Wind Model to analyze the construction of the wind project itself and the JEDI Transmission Line Model to analyze the construction of the supporting transmission line. Key assumptions for this Project included in the JEDI models include:

- Construction of the Project in 2019
- 31 turbines totaling 101.8 megawatts
- Transmission line length of 16.5 miles, and a
- 115 kV transmission line.

The results of the JEDI models are included in Table 27-2 below. These results describe the potential impacts of the Project and the related transmission line on the economy of New York in terms of jobs, payroll, and output. As will be described later, the impacts presented here do not include additional jobs, payroll, and output generated outside of New York by workers from other states.

Table 27-2. JEDI Model Economic Impact Analysis Summary: New York State

	Local Jobs	Local Payroll (Millions 2017\$)	Local Output (Millions 2017\$)
JEDI Wind Model Results (Local Impacts)			
Construction			
Project Development and Onsite Labor Total	103	\$8.2	\$9.3
Turbine and Supply Chain Impacts	164	\$11.6	\$34.5
Induced Impacts	72	\$5.3	\$13.3
<i>Total Local Wind Impacts, Construction</i>	<i>339</i>	<i>\$25.1</i>	<i>\$57.2</i>
Annual Operation and Maintenance			
Onsite Labor Impacts	6	\$0.5	\$0.5
Local Revenue and Supply Chain Impacts	5	\$0.5	\$2.1
Induced Impacts	5	\$0.4	\$0.9
<i>Total Local Wind Impacts, O&M</i>	<i>16</i>	<i>\$1.4</i>	<i>\$3.6</i>
JEDI Transmission Line Model Results (Local Impacts)			
Construction			
Project Development and Onsite Labor Total	40	\$3.9	\$4.5
Equipment and Supply Chain Impacts	12	\$0.9	\$2.3
Induced Impacts	10	\$0.7	\$1.9
<i>Total Local Transmission Line Impacts, Construction</i>	<i>62</i>	<i>\$5.5</i>	<i>\$8.7</i>
Annual Operation and Maintenance			
Onsite Labor Impacts	2	\$0.5	\$0.5
Local Revenue and Supply Chain Impacts	1	\$0.1	\$0.3
Induced Impacts	2	\$0.2	\$0.4
<i>Total Local Transmission Line Impacts, O&M</i>	<i>5</i>	<i>\$0.8</i>	<i>\$1.2</i>
Total Project and Transmission Line (Local Impacts)			
Construction			
Project Development and Onsite Labor Total	143	\$12.10	\$13.80
Equipment/Turbine and Supply Chain Impacts	176	\$12.50	\$36.80
Induced Impacts	82	\$6.00	\$15.20
<i>Total Local Project & T-Line Impacts, Construction</i>	<i>401</i>	<i>\$30.60</i>	<i>\$65.90</i>
Annual Operation and Maintenance			
Onsite Labor Impacts	8	\$1.0	\$1.0
Local Revenue and Supply Chain Impacts	6	\$0.6	\$2.4
Induced Impacts	7	\$0.6	\$1.4
<i>Total Local Project & T-Line Impacts, O&M</i>	<i>21</i>	<i>\$2.1</i>	<i>\$4.7</i>

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

In addition to the impacts associated with employment during the construction and operation and maintenance phases of the Project, the Project is forecast 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 C,² which includes all of Steuben County and all or portions of adjacent counties, is expected to experience a reduction in the average zonal prices of approximately \$0.15/MWh in 2019.

27(a) On-site Construction Work-force Impacts

The JEDI Wind Model estimates that the Project would result in a total of 339 FTE local jobs³ during the construction phase. This job figure includes direct on-site construction jobs, operational and supply chain jobs, and additional jobs that are not directly related to the on-site construction of the Project. These jobs include 103 FTE local project development and on-site labor jobs (direct impacts, excluding equipment or support services), 164 FTE turbine and supply chain local jobs (indirect impacts, with the addition of equipment and support services), and 72 FTE local jobs as the result of spending associated with direct and indirect jobs (induced impacts). In addition to the local jobs, the construction of the Project would generate 108 FTE development and on-site labor jobs for workers residing outside of New York and commuting to the Project.

During the operation and maintenance of the Project, the JEDI Wind Model estimates a total of 16 FTE local jobs would be generated annually. Six of these local jobs are onsite labor impacts; five are local revenue and supply chain impacts; and five are induced impacts.

The JEDI Transmission Line Model forecasts that the transmission line construction would result in a total of 62 FTE local jobs. These jobs include 40 FTE local project development and onsite labor jobs, 12 FTE equipment and supply chain local jobs, and 10 FTE local jobs as the result of induced impacts. During the operation and maintenance of the transmission line, the JEDI model estimates a total of two FTE local jobs would be generated annually. Both of these FTE local jobs are onsite labor impacts.

The JEDI models forecast the impacts on the local economy. The overall impact of an energy project, however, is typically broader, with impacts outside of the state as well. The Applicant forecasts a total of 211 FTE jobs⁴ will be created with the construction of the wind portion of the Project and 78 FTE jobs with the construction of the transmission line. The Applicant estimates 211 FTE jobs will be created directly by the Project and 78 FTE jobs⁴ will be created by the transmission line during the pre-construction and construction phases.

The Applicant has evaluated the expected quarterly total level of labor that will be required during the construction phase of the Project. While the JEDI models results address local impacts only, the jobs presented here include jobs that will be performed by workers from outside of New York, in addition to local ones. Table 27-3 summarizes the Applicant's forecast of the employment associated with the construction of the Project and its supporting transmission line.

² NYISO Zone C is also referred to as the Capital Zone.

³ For the purposes of this study, local jobs are considered to be jobs created within New York State. The Project will create additional jobs outside of the state, as well.

⁴ Includes engineering and other pre-construction activities and both local and non-local jobs.

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

	Type of Job	Number of FTE Jobs Created	
The Project	Foundations	58	
	Erection	76	
	Electrical	36	
	Substation	23	
	Management	8	
	Engineering and Related Services	10	
<i>Subtotal, Project</i>		<i>211</i>	
Transmission Line		78	
<i>Total FTE Jobs</i>		<i>289</i>	
Annual Quarter of Construction Activity	Construction Labor Quarterly Jobs	Engineers and Other Professional Services	Total
Quarter 1	93	18	111
Quarter 2	226	18	244
Quarter 3	226	18	244
Quarter 4	226	18	244
Peak Employment	226	18	244

Note: Construction is anticipated to take place in 2019.

Based on the Applicant’s evaluation, the peak construction period will be during the second, third, and fourth quarters, during which employment will reach 244 FTE jobs. It is anticipated that 226 jobs will be in the construction discipline and 18 will be in the engineering and other professions services disciplines.

27(b) Construction Direct and Supply Chain Impacts

Eight Point Wind Energy Center Construction

Table 27-4 below presents the total direct expenditures during construction of the Project. Labor costs were estimated by the Applicant based on anticipated employment levels and the JEDI Wind Model’s New York wage rates by worker type (e.g., foundation, electrical, etc.). Other expenditures were as forecasted by the JEDI Wind Model. The expected local shares of spending and local spending amounts are also included. The Applicant reviewed the local shares generated by the model, as customized to New York. The majority of the local shares were found to be appropriate for the Project, as they are consistent with the local shares on typical project that employs a union work force. However, adjustments were made to engineering and related services to reflect the percent use of New York staff in the Project.

Table 27-4. Direct Expenditures during Construction of the Project

	Cost (2017\$)	Local Share	Local Spending (2017\$)
Balance of Plant			
Materials			
Construction (concrete rebar, equip, roads, site prep)	\$18,387,604	90%	\$16,548,844
Transformer	\$2,080,019	0%	\$0
Electrical (drop cable, wire)	\$2,192,481	100%	\$2,192,481
HV line extension	\$4,004,931	70%	\$2,803,452
<i>Subtotal, Materials</i>	\$26,665,035		\$21,544,776
Labor			
Foundation	\$3,534,084	50%	\$1,767,042
Erection	\$5,288,490	50%	\$2,644,245
Electrical	\$3,342,029	50%	\$1,671,015
Management/supervision	\$1,001,249	0%	\$0
Miscellaneous	\$0	50%	\$0
<i>Subtotal, Labor</i>	\$13,165,852		\$6,082,302
Subtotal, Plant Costs	\$39,830,887		\$27,627,078
Equipment Costs			
Turbines (excluding blades and towers)	\$76,095,413	0%	\$0
Blades	\$17,814,980	0%	\$0
Towers	\$19,723,728	0%	\$0
Transportation	\$13,615,734	0%	\$0
Subtotal, Equipment Costs	\$127,249,855		\$0
Development/Other Costs			
High Voltage Substation/Interconnection			
Materials	\$1,263,710	90%	\$1,137,339
Labor	\$2,888,218	50%	\$1,444,109
Engineering	\$1,619,072	50%	\$809,536
Legal Services	\$937,178	100%	\$937,178
Land Easements	\$0	100%	\$0
Site Certificate	\$438,496	100%	\$438,496
Subtotal, Development/Other Costs	\$7,146,673		\$4,766,658
Subtotal All Costs (without sales tax)	\$174,227,416		\$32,393,736
Sales Tax (Materials & Equipment Purchases)	\$5,611,966	100%	\$5,611,966
Total	\$179,839,382		\$38,005,702

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

As shown above, the JEDI Wind Model estimates plant costs to be \$39.8 million, with \$26.7 million materials costs and \$13.2 million in labor costs. Approximately \$27.6 million of the plant costs are anticipated to be spent locally. Equipment costs, which include turbines, blades, towers, and transportation, are projected to be \$127.2 million. It is not expected that these expenditures will be made locally. Development costs are forecast to be \$7.1 million, with \$4.8 million spent locally. An additional \$5.6 million in sales taxes on materials and equipment purchases is forecast. Sales tax is a

local expenditure. Total project expenditures are projected by the JEDI Wind Model to be approximately \$179.8 million, with \$38.0 million spent locally.

The JEDI Wind Model provides additional detail on local spending at the industry level. Table 27-5 presents this detail.

Table 27-5. Direct Local Expenditures by Industry during Construction of the Project

Industry	Local Spending (2017\$)
Agriculture	\$0
Mining	\$0
Construction	\$26,726,334
Manufacturing	\$3,329,820
Fabricated Metals	\$0
Machinery	\$0
Electrical Equipment	\$0
Transportation, Communication, and Utilities	\$0
Wholesale Trade	\$0
Retail Trade	\$0
Finance, Insurance, and Real Estate	\$0
Miscellaneous Services	\$0
Professional Services	\$1,899,086
Government	\$6,050,462
Total	\$38,005,702

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

The largest expenditures during the construction phase of the Project will be in the construction industry, with \$26.7 million of the total \$38.0 million spent locally (approximately 70 percent).

The JEDI models uses proprietary multipliers from IMPLAN to develop additional industry-level information on the Project’s impacts in terms jobs, payroll, and output that result from the spending presented in Table 27-5 above. The direct impacts during construction include not only on-site labor and professions services, but also additional support services, such as legal support and financing, and construction materials. Direct impact estimates seek to quantify local changes in jobs, payroll, and outputs associated with the impacts created by the Project. Table 27-6 summarizes, by industry, the direct impacts⁵ on the economy resulting from the Project’s expenditures during the construction phase of the Project.

⁵ Direct impacts include both on-site spending and a portion of turbine and supply chain spending.

Table 27-6. Direct Local Impacts by Industry during Construction of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.0	\$0.000	\$0.000
Mining	0.0	\$0.000	\$0.000
Construction	91.0	\$7.250	\$7.250
Manufacturing	7.0	\$0.573	\$3.274
Fabricated Metals	0.0	\$0.000	\$0.000
Machinery	0.0	\$0.000	\$0.000
Electrical Equipment	0.0	\$0.000	\$0.000
Transportation, Communication and Utilities	0.0	\$0.000	\$0.000
Wholesale Trade	0.0	\$0.000	\$0.000
Retail Trade	0.0	\$0.000	\$0.000
Finance, Insurance, and Real Estate	0.0	\$0.000	\$0.000
Miscellaneous Services	0.0	\$0.000	\$0.000
Professional Services	11.7	\$0.777	\$1.867
Government	0.0	\$0.000	\$0.000
Total	109.7	\$8.599	\$12.390

Notes: Direct impacts include Project Development and Onsite Labor (as shown in Table 27-2), as well as some manufacturing, retail trade, and miscellaneous services. Given the addition of a portion of the Turbine and Supply Chain effects to the Project Development and Onsite Labor totals, the effects shown here cannot be directly compared to the effects shown in Table 27-2.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

The JEDI Wind Model estimates that a total of 109.7 local FTE jobs, with payroll of \$8.6 million and total output of \$12.4 million will be directly generated during the construction of the Project. The majority of the jobs (91.0 jobs) and payroll (\$7.3 million) will be generated by the construction industry.

Transmission Line

Table 27-7 below presents the total direct expenditures during construction of the transmission line necessary to support the Project. These expenditures were forecast by the JEDI Transmission Line Model. The expected local shares of spending and local spending amounts are also included. The local shares were forecast by the model based on project specifications and were customized for New York.

Table 27-7. Direct Expenditures during Construction of Transmission Line

	Cost (2017\$)	Local Share	Local Spending (2017\$)
Transmission Line Costs			
<i>Development and Preconstruction Activities</i>			
Land Acquisition Services	\$397,068	50%	\$198,534
Private Land Acquisition Payment	\$240,647	100%	\$240,647
Engineering/Surveying/Geotechnical Consulting Services	\$794,136	20%	\$158,827
Environmental & Permitting Services	\$595,602	15%	\$89,340
<i>Subtotal, Development and Preconstruction Activities</i>	<i>\$2,027,453</i>		<i>\$687,349</i>
<i>Materials and Equipment</i>			
Concrete, gravel, asphalt	\$397,068	100%	\$397,068
Steel structures and poles	\$3,275,810	0%	\$0
Overhead wires (conductor, insulators, shield wire)	\$2,183,873	0%	\$0
<i>Subtotal, Materials and Equipment</i>	<i>\$5,856,751</i>		<i>\$397,068</i>
<i>Labor/Installation</i>			
Civil (grading, roads, site prep, foundations, fencing)	\$2,127,054	80%	\$1,701,643
Heavy Construction (Tower erection, Conductor stringing)	\$3,122,939	50%	\$1,561,469
<i>Subtotal, Labor/Installation</i>	<i>\$5,249,993</i>		<i>\$3,263,112</i>
<i>Subtotal, Transmission Line Costs</i>	<i>\$13,134,196</i>		<i>\$4,347,529</i>
Infrastructure Costs			
<i>Materials and Equipment</i>			
Positions (new bays/circuits)	\$413,612	5%	\$20,681
Existing Substation Facilities (upgrades)	\$20,681	10%	\$2,068
Transformers, Series Compensation, etc.	\$2,223,167	0%	\$0
<i>Subtotal, Materials and Equipment</i>	<i>\$2,657,460</i>		<i>\$22,749</i>
<i>Labor</i>			
Positions (new bays/circuits)	\$584,227	20%	\$116,845
Existing Substation Facilities (upgrades)	\$35,054	20%	\$7,011
<i>Subtotal, Labor</i>	<i>\$619,281</i>		<i>\$123,856</i>
<i>Subtotal, Infrastructure Costs</i>	<i>\$3,276,741</i>		<i>\$146,605</i>
Services/Other Costs			
Transmission Line Services	\$1,042,303	60%	\$625,382
Infrastructure Services	\$235,759	20%	\$47,152
Construction Insurance (Substation)	\$9,823	0%	\$0
<i>Subtotal, Services/Other Costs</i>	<i>\$1,287,886</i>		<i>\$672,534</i>
Subtotal All Costs (without sales tax)	\$17,698,823		\$5,166,667
Sales Tax (Materials & Equipment Purchases)	\$340,568	100%	\$340,568
Total Project Cost	\$18,039,391		\$5,507,236

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

As shown above, the JEDI Transmission Line Model estimates transmission line costs to be \$18.0 million, with \$8.5 million materials costs. Total local expenditures are forecast to be \$5.5 million. An additional

\$340,568 in sales taxes on materials and equipment purchases is forecast. Sales tax revenue is a local expenditure.

The JEDI Transmission Line Model provided additional detail on local spending at the industry level. Table 27-8 presents this detail. The model makes various adjustments in deriving these local spending estimates. Therefore, Table 27-8, which presents this detail below, cannot be directly compared to Table 27-7 above.

Table 27-8. Direct Local Expenditures by Industry during Construction of Transmission Line

Industry	Local Spending (2017\$)
Agriculture	\$0
Mining	\$0
Construction	\$3,386,969
Manufacturing	\$221,727
Fabricated Metals	\$0
Machinery	\$0
Electrical Equipment	\$11,665
Transportation, Communication and Utilities	\$17,838
Wholesale Trade	\$195,291
Retail Trade	\$71,690
Finance, Insurance, and Real Estate	\$0
Miscellaneous Services	\$100,139
Professional Services	\$932,489
Government	\$340,568
Total	\$5,278,376

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

The largest expenditures during the construction phase of the transmission line will be in the construction industry, with \$3.4 million of the total \$5.3 million spent locally (64 percent). Table 27-9 summarizes, by industry, the direct impacts⁶ on the economy resulting from the transmission line's expenditures during the construction phase.

⁶ Direct impacts include both on-site spending and a portion of equipment and supply chain spending.

Table 27-9. Direct Local Impacts by Industry during Construction of Transmission Line

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.0	\$0.000	\$0.000
Mining	0.0	\$0.000	\$0.000
Construction	33.8	\$3.433	\$3.433
Manufacturing	0.5	\$0.039	\$0.225
Fabricated Metals	0.0	\$0.000	\$0.000
Machinery	0.0	\$0.000	\$0.000
Electrical Equipment	0.0	\$0.002	\$0.012
Transportation, Communication and Utilities	0.1	\$0.005	\$0.018
Wholesale Trade	0.6	\$0.070	\$0.198
Retail Trade	0.8	\$0.033	\$0.073
Finance, Insurance, and Real Estate	0.0	\$0.000	\$0.000
Miscellaneous Services	0.4	\$0.056	\$0.101
Professional Services	5.9	\$0.393	\$0.945
Government	0.0	\$0.000	\$0.000
Total	42.1	\$4.031	\$5.005

Notes: Direct impacts include Development and Onsite Labor (as shown in Table 27-2) as well as some manufacturing, retail trade, and miscellaneous services.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

The JEDI Transmission Line Model estimates that a total of 42.1 local jobs, with payroll of \$4.0 million and total output of \$5.0 million will be directly generated during the construction of the transmission line. The majority of the jobs (33.8 jobs) and payroll (\$3.4 million) will be generated by the construction industry.

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

The JEDI models also address indirect and induced impacts at the industry level through the use of multipliers developed by IMPLAN, as described previously. 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. Induced impacts refer to jobs and economic impacts that result from spending by workers involved with the direct and indirect categories.

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Table 27-10 below presents the indirect impacts on the local economy during construction of the Project, with Table 27-11 presenting the induced impacts.

Table 27-10. Indirect Local Impacts by Industry during Construction of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.0	\$0.000	\$0.000
Mining	0.0	\$0.000	\$0.000
Construction	146.4	\$9.988	\$28.354
Manufacturing	4.8	\$0.363	\$1.044
Fabricated Metals	0.0	\$0.000	\$0.000
Machinery	0.0	\$0.000	\$0.000
Electrical Equipment	0.0	\$0.000	\$0.000
Transportation, Communication and Utilities	0.0	\$0.000	\$0.000
Wholesale Trade	0.0	\$0.000	\$0.000
Retail Trade	0.0	\$0.000	\$0.000
Finance, Insurance, and Real Estate	0.0	\$0.000	\$0.000
Miscellaneous Services	0.0	\$0.000	\$0.000
Professional Services	3.2	\$0.269	\$0.674
Government	2.5	\$0.238	\$0.619
Total	156.9	\$10.858	\$30.691

Note: Indirect impacts are similar to the Turbine and Supply Chain Impacts shown in Table 27-2, but exclude some manufacturing, retail trade, and miscellaneous services.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

Indirect local impacts represented the largest type of local impacts during the construction phase, with 156.9 jobs, payroll totaling \$10.9 million, and output totaling \$30.7 million. The construction industry is expected to experience the largest impact, with 146.4 local jobs and \$10.0 million in payroll and \$28.4 million in output.

Table 27-11. Induced Local Impacts by Industry during Construction of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.0	\$0.000	\$0.000
Mining	0.0	\$0.000	\$0.000
Construction	48.1	\$3.416	\$8.540
Manufacturing	3.6	\$0.255	\$0.638
Fabricated Metals	0.0	\$0.000	\$0.000
Machinery	0.0	\$0.000	\$0.000
Electrical Equipment	0.0	\$0.000	\$0.000
Transportation, Communication and Utilities	0.0	\$0.000	\$0.000
Wholesale Trade	0.0	\$0.000	\$0.000
Retail Trade	0.0	\$0.000	\$0.000
Finance, Insurance, and Real Estate	0.0	\$0.000	\$0.000
Miscellaneous Services	0.0	\$0.000	\$0.000
Professional Services	4.0	\$0.286	\$0.717
Government	16.0	\$1.291	\$3.224
Total	71.7	\$5.248	\$13.119

Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.

As shown in Table 27-11 above, induced impacts are expected to generate 71.7 local FTE jobs, payroll of \$5.4 million, and output of \$13.2 million. The construction industry is expected to experience the largest impact, with 48.1 jobs and \$3.4 million in payroll.

Transmission Line Construction

Table 27-12 below presents the indirect impacts on the local economy during construction of the transmission line, with Table 27-13 presenting the induced impacts.

Table 27-12. Indirect Local Impacts by Industry during Construction of Transmission Line

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.0	\$0.000	\$0.000
Mining	0.0	\$0.000	\$0.000
Construction	7.3	\$0.478	\$1.218
Manufacturing	0.3	\$0.025	\$0.072
Fabricated Metals	0.0	\$0.000	\$0.000
Machinery	0.0	\$0.000	\$0.000
Electrical Equipment	0.0	\$0.002	\$0.005
Transportation, Communication and Utilities	0.0	\$0.003	\$0.008
Wholesale Trade	0.3	\$0.028	\$0.070
Retail Trade	0.1	\$0.010	\$0.025
Finance, Insurance, and Real Estate	0.0	\$0.000	\$0.000
Miscellaneous Services	0.2	\$0.015	\$0.036
Professional Services	1.6	\$0.136	\$0.341
Government	0.1	\$0.014	\$0.036
Total	10.1	\$0.711	\$1.810

Note: Indirect impacts are similar to the Equipment and Supply Chain Impacts shown in Table 27-2, but exclude some manufacturing, retail trade, and miscellaneous services.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

Indirect impacts are forecast to generate 10.1 local jobs, with payroll totaling \$0.7 million, and output totaling \$1.8 million. The construction industry is expected to experience the largest impact, with 7.3 jobs and \$0.5 million in payroll.

Table 27-13. Induced Local Impacts by Industry during Construction of Transmission Line

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.0	\$0.000	\$0.000
Mining	0.0	\$0.000	\$0.000
Construction	6.3	\$0.446	\$1.115
Manufacturing	0.2	\$0.018	\$0.044
Fabricated Metals	0.0	\$0.000	\$0.000
Machinery	0.0	\$0.000	\$0.000
Electrical Equipment	0.0	\$0.001	\$0.003
Transportation, Communication and Utilities	0.0	\$0.002	\$0.005
Wholesale Trade	0.3	\$0.027	\$0.068
Retail Trade	0.2	\$0.012	\$0.029
Finance, Insurance, and Real Estate	0.0	\$0.000	\$0.000
Miscellaneous Services	0.3	\$0.020	\$0.049
Professional Services	2.0	\$0.145	\$0.362
Government	0.9	\$0.075	\$0.187
Total	10.3	\$0.745	\$1.862

Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.

As shown in Table 27-13 above, induced impacts are expected to generate 10.3 FTE local jobs, with payroll of \$0.7 million, and output of \$1.9 million. The construction industry is expected to experience the largest impact, with 6.3 jobs and \$0.4 million in payroll.

27(d) Operation and Maintenance Employment Impacts

Eight Point Wind Energy Center

Table 27-14 below presents the direct expenditures projected to occur during the operations and maintenance (O&M) phase of the Project, as forecast by the JEDI Wind Model.

Table 27-14. Direct Expenditures during Operations and Maintenance Phase of the Project

	Cost (2017\$)	Local Share (2017\$)	Local Spending (2017\$)
Variable Costs			
Personnel			
Field Salaries	\$340,939	100%	\$212,725
Administrative	\$53,760	100%	\$33,543
Management	\$134,399	100%	\$83,857
Subtotal, Personnel	\$529,098		\$330,125
Fixed Costs			
Materials and Services			
Vehicles	\$54,681	100%	\$54,681
Miscellaneous Services	\$21,326	100%	\$21,326
Fees, Permits, Licenses	\$10,663	100%	\$10,663
Utilities	\$42,651	100%	\$42,651
Insurance	\$410,106	0%	\$0
Fuel	\$21,326	100%	\$21,326
Tools and Miscellaneous Supplies	\$138,616	100%	\$138,616
Spare Parts Inventory	\$1,214,734	2%	\$24,295
Subtotal, Materials and Service	\$1,914,102		\$313,556
Taxes and Other Payments			
Sales Tax (Materials & Equipment Purchases)	\$56,321	100%	\$56,321
Financing (debt payment)	\$19,826,305	0%	\$0
Equity Payment - Individuals	\$0	100%	\$0
Equity Payment - Corporate	\$6,365,745	0%	\$0
Property Taxes	\$743,140	100%	\$743,140
Land Lease	\$306,900	100%	\$306,900
Subtotal, Taxes and Other Payments	\$27,298,411		\$1,106,361
Total	\$29,741,611		\$1,750,042

Note: For personnel expenses, taxes and health benefits, totaling 37.6 percent, have been deducted for local spending as this share will be removed from the local economy.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

As shown above, the JEDI Wind Model estimates O&M and costs associated with taxes and other payments to be \$29.7 million, with \$0.5 million in labor costs, \$1.9 million in materials and services costs, and \$27.3 million in financing, taxes, and other payments. While all of the personnel costs will be incurred locally, 37.6 percent of costs are expected to be spent outside the local area as health benefits and payroll taxes. Of the \$1.9 million in materials and services costs, roughly \$313,000 is expected to be spent locally. An estimated \$1.1 million of the taxes, financing, and other payments associated with the operation and maintenance phase of the Project is forecast by JEDI to be spent locally on sales taxes, property taxes, and land leases. Total expenditures during the O&M phase are projected by the JEDI Wind Model to be \$29.7 million, with \$1.8 million spent locally.

The JEDI Model provides additional detail on local spending at the industry level. The model makes various adjustments in deriving these local spending estimates. Therefore, Table 27-15, which presents this detail below, cannot be directly compared to Table 27-14 above. Economic impacts associated with direct local expenditures are computed by the JEDI Model based on the expenditures levels presented below.

Table 27-15. Direct Local Expenditures by Industry during Operation and Maintenance of the Project

Industry	Local Spending (2017\$)
Agriculture	\$0
Mining	\$0
Construction	\$0
Manufacturing	\$18,221
Fabricated Metals	\$0
Machinery	\$0
Electrical Equipment	\$6,074
Transportation, Communication and Utilities	\$42,651
Wholesale Trade	\$0
Retail Trade	\$214,622
Finance, Insurance, and Real Estate	\$161,308
Miscellaneous Services	\$21,326
Professional Services	\$0
Government	\$847,789
Total	\$1,311,991

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

The largest expenditures during the O&M phase of the Project will be related to government taxes and payments, with a projected \$0.8 million of the total \$1.3 million spent locally (65 percent).

As with the construction phase, the JEDI Model uses IMPLAN’s multipliers to forecast industry-level information on the Project’s impacts in terms jobs, payroll, and output that result from the spending presented in Table 27-15 above.

Table 27-16 summarizes, by industry, the direct impacts on the economy resulting from the Project’s expenditures during the O&M phase of the Project as forecasted by the JEDI Model.

Table 27-16. Direct Local Impacts by Industry during Operation and Maintenance of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.01	\$0.000	\$0.002
Mining	0.00	\$0.000	\$0.000
Construction	0.00	\$0.000	\$0.000
Manufacturing	0.04	\$0.003	\$0.029
Fabricated Metals	0.00	\$0.000	\$0.000
Machinery	0.00	\$0.000	\$0.000
Electrical Equipment	0.01	\$0.001	\$0.003
Transportation, Communication and Utilities	0.19	\$0.014	\$0.067
Wholesale Trade	0.53	\$0.061	\$0.187
Retail Trade	1.06	\$0.046	\$0.132
Finance, Insurance, and Real Estate	0.54	\$0.072	\$0.407
Miscellaneous Services	0.87	\$0.110	\$0.403
Professional Services	0.02	\$0.001	\$0.006
Government	0.00	\$0.000	\$0.838
Plant Employees	6.08	\$0.483	\$0.000
Total	9.33	\$0.791	\$2.074

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

The JEDI model estimates that a total of 9.3 FTE jobs, with payroll of \$0.8 million and total output of \$2.1 million will be directly generated during the O&M phase of the Project. The majority of the jobs (6.1 FTE jobs) and payroll (\$0.5 million) will be attributable to the plant employees.

Transmission Line

Table 27-17 below presents the direct expenditures during the operations and maintenance (O&M) of the transmission line, as forecast by the JEDI Model.

Table 27-17. Direct Expenditures during Operations and Maintenance of Transmission Line

Industry	Cost (2017\$)	Local Share (2017\$)	Local Spending (2017\$)
Transmission Line and Right-of-way			
Transmission Line/Right-of-way Labor	\$198,907	60%	\$119,344
Transmission Line/Right-of-way Maintenance Materials	\$34,148	10%	\$3,415
Insurance	\$16,544	0%	\$0
Replacement Parts/Equipment/ Spare Parts Inventory	\$19,853	0%	\$0
Subtotal, Transmission Line and Right-of-way	\$269,453		\$122,759
Substation/Converter Station			
Labor/Personnel	\$1,110	50%	\$555
Insurance	\$1,965	0%	\$0
Replacement Parts/Equipment/ Spare Parts Inventory	\$982	0%	\$0
Subtotal, Substation/Converter Station	\$4,057		\$555
Subtotal All O&M Costs (without sales tax)	\$273,510		\$123,314
Sales Tax (Materials & Equipment Purchases)	\$2,199	100%	\$2,199
Right of Way/Royalty Payments - Public land (PILOT)	\$0	100%	\$0
Total with Payments	\$275,709		\$125,513
Average Annual Debt Payment (Interest and Principal)	\$597,382	0%	\$0
Average Annual Equity Payment Individual (Interest and Principal)	\$0	0%	\$0
Average Annual Equity Payment Corporate (Interest and Principal)	\$1,619,630	0%	\$0
Property Taxes	\$366,000	100%	\$366,000
Total	\$2,858,721		\$491,513
Total (without debt, equity, taxes, ROW pmts, etc.)	\$275,709		\$125,513

Notes: For personnel expenses, taxes and health benefits, totaling 37.6 percent, have been deducted for local spending as this share will be removed from the local economy.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

As shown above, O&M costs associated with the transmission line are anticipated to be \$2.9 million, with \$0.2 million in labor costs, roughly \$55,000 in materials and inventory, and \$2.2 million in financing payments. Local expenditures on O&M for the transmission line are forecast by the JEDI Transmission Line Model to be \$125,513.

The JEDI Transmission Line Model provides additional detail on local spending at the industry level. As mentioned previously, the model makes various adjustments in deriving these local spending estimates. Therefore, Table 27-18, which presents this detail below, cannot be directly compared to Table 27-17 above. Economic impacts associated with direct local expenditures are computed by the JEDI Transmission Line Model based on the expenditures levels presented below.

Table 27-18. Direct Local Expenditures by Industry during Operation and Maintenance of Transmission Line

Industry	Local Spending (2017\$)
Agriculture	\$0
Mining	\$0
Construction	\$0
Manufacturing	\$1,907
Fabricated Metals	\$0
Machinery	\$0
Electrical Equipment	\$0
Transportation, Communication and Utilities	\$79
Wholesale Trade	\$1,429
Retail Trade	\$0
Finance, Insurance, and Real Estate	\$36,385
Miscellaneous Services	\$0
Professional Services	\$0
Government	\$368,199
Total	\$407,999

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

The largest expenditures during the O&M phase of the transmission line will be related to government, with a projected \$368,199 of the total \$407,999 spent locally (90 percent). This category represents taxes and governmental fees.

As with the construction phase, the JEDI Transmission Line Model uses IMPLAN’s multipliers to forecast industry-level information on the transmission line’s impacts in terms jobs, payroll, and output that result from the spending presented in Table 27-18 above.

Table 27-19 summarizes, by industry, the direct impacts on the economy resulting from the transmission line’s expenditures during the O&M phase of the transmission line as forecasted by the JEDI Transmission Line Model.

Table 27-19. Direct Local Impacts by Industry during Operation and Maintenance of Transmission Line

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.00	\$0.000	\$0.000
Mining	0.00	\$0.000	\$0.000
Construction	0.00	\$0.000	\$0.000
Manufacturing	0.00	\$0.000	\$0.004
Fabricated Metals	0.00	\$0.000	\$0.000
Machinery	0.00	\$0.000	\$0.000
Electrical Equipment	0.00	\$0.000	\$0.000
Transportation, Communication and Utilities	0.00	\$0.000	\$0.003
Wholesale Trade	0.00	\$0.001	\$0.005
Retail Trade	0.00	\$0.000	\$0.007
Finance, Insurance, and Real Estate	0.10	\$0.013	\$0.085
Miscellaneous Services	0.00	\$0.000	\$0.047
Professional Services	0.00	\$0.000	\$0.001
Government	0.00	\$0.000	\$0.001
Plant Employees	1.75	\$0.112	\$0.000
Total	1.86	\$0.126	\$0.153

Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.

The JEDI Transmission Line Model estimates that during the O&M phase there will be a minimal direct impact on the local economy, with a total of 1.86 FTE jobs, with payroll of \$0.1 million and total output of \$0.2 million directly generated during the O&M phase of the transmission line.

27(e) Secondary Operation and Maintenance Impacts

Using IMPLAN’s multipliers, the JEDI Models estimate indirect and induced impacts at the industry level.

Eight Point Wind Energy Center

Table 27-20 below presents the indirect impacts on the local economy during O&M of the Project, with Table 27-21 presenting the induced impacts.

Table 27-20. Indirect Local Impacts by Industry during Operation and Maintenance of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.00	\$0.000	\$0.000
Mining	0.00	\$0.000	\$0.000
Construction	0.00	\$0.000	\$0.000
Manufacturing	0.04	\$0.003	\$0.009
Fabricated Metals	0.00	\$0.000	\$0.000
Machinery	0.00	\$0.000	\$0.000
Electrical Equipment	0.01	\$0.000	\$0.001
Transportation, Communication and Utilities	0.14	\$0.011	\$0.031
Wholesale Trade	0.29	\$0.027	\$0.066
Retail Trade	0.21	\$0.018	\$0.046
Finance, Insurance, and Real Estate	0.46	\$0.044	\$0.114
Miscellaneous Services	0.61	\$0.061	\$0.141
Professional Services	0.01	\$0.001	\$0.002
Government	0.36	\$0.034	\$0.087
Total	2.14	\$0.199	\$0.498

*Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.*

Indirect local impacts during the O&M phase are forecast to be 2.1 FTE jobs, payroll of \$0.2 million, and output of \$0.5 million.

Table 27-21. Induced Local Impacts by Industry during Operation and Maintenance of the Project

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.00	\$0.000	\$0.000
Mining	0.00	\$0.000	\$0.000
Construction	0.00	\$0.000	\$0.000
Manufacturing	0.03	\$0.002	\$0.006
Fabricated Metals	0.00	\$0.000	\$0.000
Machinery	0.00	\$0.000	\$0.000
Electrical Equipment	0.00	\$0.000	\$0.001
Transportation, Communication and Utilities	0.11	\$0.008	\$0.020
Wholesale Trade	0.32	\$0.026	\$0.064
Retail Trade	0.29	\$0.021	\$0.053
Finance, Insurance, and Real Estate	0.73	\$0.051	\$0.129
Miscellaneous Services	1.00	\$0.078	\$0.195
Professional Services	0.01	\$0.001	\$0.002
Government	2.25	\$0.182	\$0.455
Total	4.76	\$0.370	\$0.942

Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.

As a result of economic activity associated with the Project, induced local impacts are projected to be 4.8 FTE jobs, payroll of \$0.4 million, and output totaling \$0.9 million. The government is expected to experience the largest impact, with 2.3 jobs and \$0.2 million in payroll. These jobs would be associated with the additional spending, in terms of taxes, associated with the Project, rather than an indication of an additional burden being placed on local services as a result of the Project.

Transmission Line

Table 27-22 below presents the indirect impacts on the local economy during O&M of the transmission line, with Table 27-23 presenting the induced impacts.

Table 27-22. Indirect Local Impacts by Industry during Operation and Maintenance of Transmission Line

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.00	\$0.000	\$0.000
Mining	0.00	\$0.000	\$0.000
Construction	0.00	\$0.000	\$0.000
Manufacturing	0.01	\$0.000	\$0.001
Fabricated Metals	0.00	\$0.000	\$0.000
Machinery	0.00	\$0.000	\$0.000
Electrical Equipment	0.00	\$0.000	\$0.000
Transportation, Communication and Utilities	0.01	\$0.000	\$0.001
Wholesale Trade	0.01	\$0.001	\$0.002
Retail Trade	0.01	\$0.001	\$0.002
Finance, Insurance, and Real Estate	0.10	\$0.009	\$0.024
Miscellaneous Services	0.07	\$0.007	\$0.017
Professional Services	0.00	\$0.000	\$0.000
Government	0.16	\$0.015	\$0.040
Total	0.36	\$0.035	\$0.088

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

Construction is anticipated to take place in 2019.

Indirect local impacts during the O&M of the transmission line are forecast to be 0.36 FTE jobs, payroll of \$35,000, and output of \$88,000.

Table 27-23. Induced Local Impacts by Industry during Operation and Maintenance of Transmission Line

Industry	Labor Impacts (Jobs)	Earning Impacts (Millions 2017\$)	Output Impacts (Millions 2017\$)
Agriculture	0.00	\$0.000	\$0.000
Mining	0.00	\$0.000	\$0.000
Construction	0.00	\$0.000	\$0.000
Manufacturing	0.00	\$0.000	\$0.001
Fabricated Metals	0.00	\$0.000	\$0.000
Machinery	0.00	\$0.000	\$0.000
Electrical Equipment	0.00	\$0.000	\$0.000
Transportation, Communication and Utilities	0.00	\$0.000	\$0.001
Wholesale Trade	0.01	\$0.001	\$0.002
Retail Trade	0.02	\$0.001	\$0.003
Finance, Insurance, and Real Estate	0.15	\$0.011	\$0.027
Miscellaneous Services	0.12	\$0.009	\$0.023
Professional Services	0.00	\$0.000	\$0.000
Government	1.04	\$0.084	\$0.210
Total	1.34	\$0.106	\$0.266

Note: Numbers shown may not sum to totals because of rounding.
Construction is anticipated to take place in 2019.

As a result of economic activity associated with the transmission line, induced local impacts are projected to be 1.34 FTE jobs, payroll of \$106,000, and output totaling \$266,000.

Other Impacts

Neither the Project nor the transmission will result in the cancellation of new power projects. Additionally, as described in Exhibit 8, ICF used PROMOD to evaluate potential impacts on the price of electricity that would be attributable to the Project. In NYISO Zone C, where the Project would be located, the average annual price in with Project is expected to be \$38.36 \$/MWh; without Project the average annual price is expected to be \$38.51 \$/MWh. The Project is, therefore, anticipated to reduce the average zonal prices by approximately \$0.15 \$/MWh in 2019.

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

The Project is located within the Canisteo-Greenwood and the Whitesville Central School Districts, while the transmission line is located in Canisteo-Greenwood Central School District only. 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, the June 2017 estimate of the county's unemployment level shows that 5.3 percent of the labor force (persons) are unemployed (see Table 27-1). Therefore, it is reasonable to expect 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 districts, therefore, are anticipated during the construction phase of the Project or the transmission line.

During the O&M phase of the Project and the transmission line, combined total impacts associated with employment are forecast to be less than 12 FTE jobs. Long term population impacts in the school districts are anticipated to be minimal during the O&M phase of the Project. Tax payments and PILOT will be made to the local school districts during the O&M phase of the Project and the transmission line.

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 and the transmission line are expected to be minimal. In addition, the cost of any services required by Project or transmission line employees living within the local municipalities would be offset by property taxes and utility fees. Further, the Project and the transmission line construction and operation are not anticipated to place any burdens on local services, but will generate PILOT and property tax revenue, respectively, for the taxing jurisdictions.

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

The Project includes property within five taxing jurisdictions that will receive Payments in Lieu of Taxes (PILOT), Host Community Agreement (HCA) payments and/or tax revenues. The jurisdictions are:

- Steuben County
- Towns of Greenwood and West Union
- Canisteo-Greenwood Central School District and Whitesville Central School District

These jurisdictions will benefit from PILOT, HCAs, and/or property taxes 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.

The transmission line includes property within five taxing jurisdictions that will receive tax revenue. The jurisdictions are:

- Steuben County
- Towns of Greenwood, Hartsville, and Hornellsville
- Canisteo-Greenwood Central School District

These jurisdictions will benefit from property taxes as described in the following section, and from additional economic activity in the vicinity of the transmission line. New York State is also anticipated to benefit from additional tax revenue generated by the construction and O&M of the transmission line.

27(i) Incremental Amount of Annual Taxes and PILOT

The Applicant anticipates executing a PILOT agreement with Steuben County, the Town of Greenwood, the Town of West Union, the Canisteo-Greenwood Central School District, and the Whitesville Central School District, requiring annual PILOT payments for the next 20 years. Additionally, HCAs are expected to be executed with the Town of Greenwood and the Town of West Union. While the specific terms of the PILOT agreement and HCAs have not yet been finalized, these agreements are anticipated to increase the revenues of the local taxing jurisdictions, and will represent a significant portion of their total tax levy. Annual PILOT and HCA payments in the first year of operation are anticipated to be over \$743,000 for the Project.⁷ Total PILOT and HCA payments over the 20-year agreement period are expected to total approximately \$18 million for the Project. Table 27-24 below details the anticipated PILOT and HCA payments to each taxing jurisdiction.

Table 27-24. Anticipated Annual and Cumulative PILOT and Host Community Agreement Payments for the Project

Taxing Jurisdiction	First Year Payment (000's)	Cumulative (20-year) Payment (000's)
Steuben County	\$97	\$2,360
Greenwood Town	\$149	\$3,619
West Union Town	\$206	\$4,998
Canisteo-Greenwood Central School District	\$122	\$2,973
Whitesville Central School District	\$169	\$4,106
Total	\$743	\$18,056

Notes:

Payments related to the Project are anticipated to increase over time by 2% per year.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

The Whitesville Central School District and the Town of West Union are anticipated to receive the largest payments, with 20-year totals of \$4.1 million and \$5.0 million respectively. Greenwood is expected to receive \$3.6 million over the 20-year period, with the Canisteo-Greenwood Central School District receiving \$2.9 million. Steuben County's 20-year cumulative PILOT payment is anticipated to total \$2.4 million.

PILOT agreements and HCAs are not currently planned for the transmission line. Instead, personal property tax payments are expected to be made on the tax basis of the transmission line structures themselves. These payments will diminish over time as the assets depreciate. Annual tax payments in 2020 are anticipated to be approximately \$366,000. Total tax payments over a 20-year period from 2020 through 2039 are expected to total approximately \$5 million. Table 27-25 below details the anticipated property tax payments to each taxing jurisdiction.

⁷ Payments related to the Project are anticipated to increase over time by 2% per year.

Table 27-25. Anticipated Annual and Cumulative Personal Property Tax Payments for Transmission Line

Taxing Jurisdiction	First Year Payment (000's)	Cumulative (20-year) Payment (000's)
Steuben County	\$77	\$1,053
Greenwood Town	\$46	\$635
Hartsville Town	\$34	\$464
Hornellsville Town	\$6	\$79
Canisteo-Greenwood Central School District	\$204	\$2,791
Total	\$366	\$5,022

Notes:

Payments related to the transmission line are estimated based on personal property taxes and decline with depreciation over time.

Numbers shown may not sum to totals because of rounding.

Construction is anticipated to take place in 2019.

The Canisteo-Greenwood Central School District is expected to receive the greatest tax payment, with approximately \$204,000 in 2020 and \$2.8 million over the 20-year period from 2020 through 2039. Tax payments to other jurisdictions in 2020 range from approximately \$6,000 to \$77,000. The tax payments vary directly with the acreage associated with the transmission line.

Comparison of Fiscal Costs and Benefits to each Jurisdiction

As discussed previously, neither the Project nor the transmission line are anticipated to impose fiscal costs related 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 Project and transmission line are relatively small. With the expected payment of PILOT, HCA and/or property taxes, the Project and transmission line should result in positive fiscal impacts for the local jurisdictions.

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 (including a fire emergency or a hazardous substance incident) is found in the Emergency Action Plan (Appendix 18-1). The Emergency Action Plan includes information on the closest medical facilities from the Operations and Maintenance Building, 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 Emergency Action Plan. This may include potential evacuation and contacting emergency services.

The Emergency Action Plan and the Health and Safety Plan 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 and police as described in the Public Involvement Plan meeting log and additional discussions will occur prior to construction and prior to the start of operations. The Applicant will have fire extinguishers, high-angle rescue equipment, automated external defibrillators, first aid kits and spill kits on site, and all site personnel will be trained annually on equipment use and first aid procedures. The Applicant will work with local emergency responders to coordinate any training that may be necessary. It is the responsibility of the site personnel and the Applicant to conduct high angle rescues as necessary during an emergency situation. Local emergency response personnel would only be requested to assist once an injured party is brought to ground level. Consequently, 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 Public 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 existing energy infrastructure by creating an economically viable, wind-powered electrical-generating facility that provides renewable energy to the New York State power grid. The Project’s 31 wind turbines will generate approximately 102 MW of renewable energy to the New York State grid. The Project will use the existing power grid for the distribution of electricity to end users. 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 power grid 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 wind power projects requires a large land area. As such, wind projects, such as this, are incompatible with municipal centers. Therefore, compliance with this criterion is impractical.

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

Wind projects are incompatible with infill development and waterfront revitalization. The proposed Project is not located in a designated brownfield area. Therefore, compliance with this criterion is impractical.

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 17, 20, 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 minimized impacts to the relevant resources to the maximum extent practicable (based on the layout as currently proposed). Any remaining impacts are outweighed by the benefit provided by the Project's generation of up to 102 MW of renewable energy, 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 sites are in the rural communities of Greenwood and West Union (see Table 27-1). The area is not conducive to 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 wind project requires significant open space and, thus, is incompatible with downtown revitalization. The proposed location is not in a brownfield. Compliance with this criterion is impracticable.

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 Public Involvement Program (PIP) plan prepared specifically for the Project. The stakeholder list in Appendix 2-4 of this Application provides a list of identified host community, adjacent community, county, and agency stakeholders. Appendix 2-3 provides information on the public outreach efforts, including meetings with local community and governmental representatives.

Criterion 8: To participate in community based planning and collaboration

As described above, 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.eightpointwind.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 Steuben County or in the towns of Greenwood and West Union.

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

Wind 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, SO₂ and CO₂ emissions from the power sector in New York. In 2019, the Project is expected to reduce the annual statewide emissions by 10 tons of SO₂, 70 tons of NO_x and 92,119 tons of CO₂.

The Project will help the state achieve the goal of having 50 percent of energy generation produced from renewable energy sources and a 40 percent reduction in greenhouse gas emissions from the 1990 level (New York State Energy Planning Board, 2015). 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 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 GHGs (greenhouse gas) 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 2017). Wind power, as a zero-emission, renewable energy source, not only expands available power generation capabilities without increasing greenhouse gas emissions, the addition of a wind power project will result in a decrease in existing greenhouse gas emission levels, as wind 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.

References

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