

Appendix C: Economic and Fiscal Impact Study

Economic and Fiscal Impact of Seneca Wind

Seneca County, Ohio

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**Prepared for
Seneca Wind LLC**

Prepared by



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Introduction

Seneca Wind LLC (Seneca Wind) is proposing to develop the Seneca Wind project (the Project) in Seneca County, Ohio. The Project is a new 212-megawatt (MW)¹ wind-energy facility consisting of up to 85 wind turbine generators. The Project will be located on private lands within an area of approximately 56,900 acres in Seneca County (the Project Area). Land use within the Project Area is primarily agricultural. The Project will require significant capital investment, with construction expected to take place from the second quarter through the fourth quarter of 2019.

This report, prepared on behalf of Seneca Wind, assesses the economic and fiscal impact of the Project. Regional economic impacts are assessed using the National Renewable Energy Laboratory's (NREL's) Jobs and Economic Development Impact (JEDI) Land-based Wind Model (JEDI Wind Model) and presented in terms of employment, income, and economic output. Impacts are estimated separately at the state (Ohio) and local (Seneca County) levels. The fiscal impact analysis provides an estimate of tax revenues that would be expected to accrue as a result of Project construction and operation.

The results presented in this report are indicative, preliminary estimates based on a certain set of assumptions and estimated model inputs. These assumptions and inputs are based on the best data and information available at this stage in the Project development process. These assumptions and inputs could differ from actual conditions due to unexpected events or other Project-related developments, resulting in different economic and fiscal impacts. However, this analysis is anticipated to generally reflect the order of magnitude of expected impacts.

State and Local Context

Demographic Overview

Seneca County is located in north-central Ohio. The county encompasses 552 square miles, the majority of which (about 80 percent) is pasture land (WSOS Community Action Group 2011). With a total estimated population of 55,243 in 2017, Seneca County ranked 47 of 88 counties in Ohio in terms of population, with an average population density of 100.3 persons per square mile (persons/square mile) compared to a statewide average of 285.3 persons/square mile (U.S. Census Bureau 2018a, 2018b).

There are eight incorporated communities in Seneca County: the cities of Tiffin and Fostoria (part) and the villages of Attica, Bettsville, Bloomville, Green Springs (part), New Riegel, and Republic. These eight communities together account for about two-thirds of total county population. Tiffin, located west of the Project area is the county seat and the largest of the eight communities, with an estimated population of 17,701, followed by Fostoria (13,397) and Green Springs (1,637). The villages of Attica and Bloomville, with respective estimated populations of 1,018 and 915, are located within the boundaries of the Project Area (U.S. Census Bureau 2018c).²

Total population in Seneca County peaked in 1980 and has been declining since. The total population identified in the last decennial census (2010) was 56,745, roughly equal to the county's population in 1955. Total population dropped by 1,938 residents or 3.3 percent from 2000 to 2010, falling by a further 1,502 residents from 2010 to 2017, a 2.6 percent decrease (U.S. Census Bureau 2018b, WSOS Community Action Group 2011). The net loss of people from 2010 to 2017 was primarily the result of net out-migration

¹ The installed (nameplate) capacity would be 212 MW; however, a maximum of 200 MW would be generated per the interconnection agreement.

² The most recent population estimates for cities and towns with populations of less than 20,000 are 5-year estimates from the 2012-2016 American Community Survey (U.S. Census Bureau 2017c). Estimates are annual totals based on 5 years of data.

(more people left than moved to the county), with the county experiencing a very modest gain (20 people) through natural increase (more births than deaths) (U.S. Census Bureau 2018d).

The State of Ohio had a total estimated population of 11.66 million in 2017. Unlike Seneca County, the statewide population has been slowly growing, increasing by about 1.6 percent from 2000 to 2010, and by a further 1.1 percent from 2010 to 2017 (U.S. Census Bureau 2018a, 2018e).

Employment and the Economy

An estimated 27,294 people were employed in Seneca County in 2016 (Table 1). Employment was concentrated in the manufacturing sector, which accounted for 16 percent of total employment compared to just 10 percent statewide. Viewed in terms of number of establishments, fabricated metal products, machinery, and transportation equipment were the main clusters of manufacturing industries in 2009 (WSOS Community Action Group 2011). Employment in Seneca County is also relatively concentrated in education, which made up 6 percent of total employment in 2016, three times the state average (Table 1). The relative importance of education reflects the presence of two universities, a career/vocational school, and several school districts within the county. Employment in Seneca County in 2016 also included a total of 1,554 construction jobs (Table 1).

Table 1. Employment by Economic Sector, 2016

Economic Sector	Seneca County		State of Ohio	
	Number of Jobs ¹	Percent of Total	Number of Jobs ¹	Percent of Total
Agriculture	1,120	4	87,949	1
Forestry, Fishing, and Related	(D)	na	14,314	0
Mining	176	1	34,124	0
Utilities	115	0	20,576	0
Construction	1,554	6	326,254	5
Manufacturing	4,392	16	714,829	10
Wholesale Trade	971	4	269,484	4
Retail Trade	2,929	11	698,917	10
Transportation and Warehousing	1,141	4	258,303	4
Information	280	1	86,785	1
Finance and Insurance	863	3	334,294	5
Real Estate	1,061	4	274,701	4
Professional, Scientific, and Technical Services	(D)	na	394,559	6
Management of Companies	(D)	na	145,440	2
Administrative, Waste Management, Remediation	728	3	418,477	6
Arts, Entertainment, and Recreation	295	1	137,780	2
Accommodation and Food Services	2,075	8	505,339	7
Education	1,650	6	156,783	2

Table 1. Employment by Economic Sector, 2016

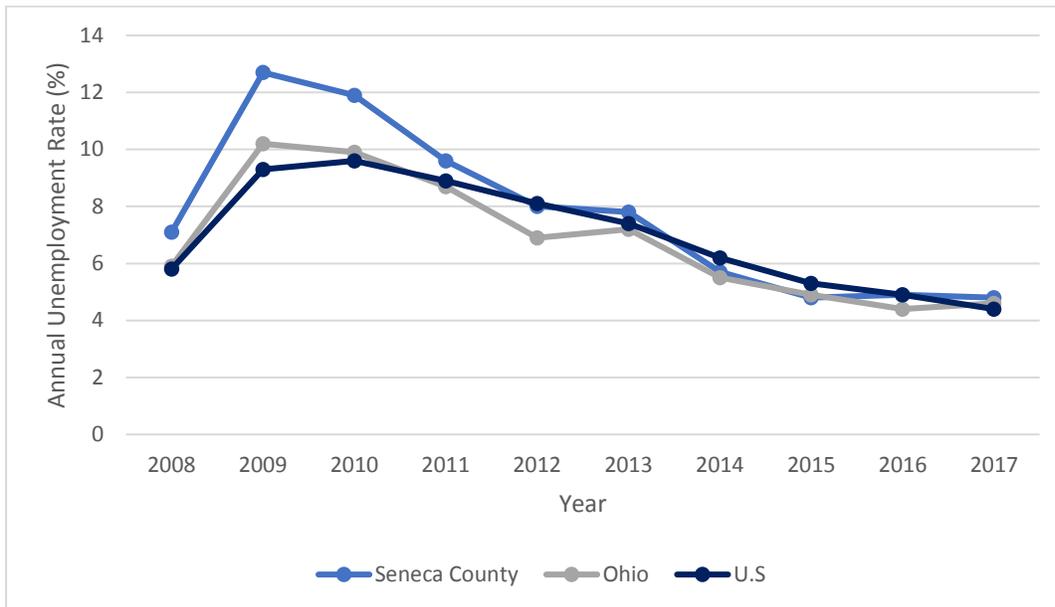
Economic Sector	Seneca County		State of Ohio	
	Number of Jobs ¹	Percent of Total	Number of Jobs ¹	Percent of Total
Health Care and Social Assistance	2,639	10	898,978	13
Other Services	1,619	6	377,953	5
Government	2,754	10	801,699	12
Total Employment	27,294	100	6,957,538	100
Notes: na – not applicable (D) Not shown to avoid disclosure of confidential information; estimates for this item are, however, included in the totals. ¹ Employment estimates include self-employed individuals. Employment data are by place of work, not place of residence, and, therefore, include people who work in the area but do not live there. Employment is measured as the average annual number of jobs, both full- and part-time, with each job counted at full weight. Source: U.S. Bureau of Economic Analysis 2018				

The largest private employers in the county include Mercy Tiffin Hospital and Ameriwood Industries, each with more than 500 employees. A number of other businesses employ between 200 and 499 workers, including Church & Dwight, Mennel Milling, and National Machinery, among other manufacturing companies, and Heidelberg University and Tiffin University in the education sector (Seneca Industrial and Economic Development Corp 2018).

Almost 7 million people were employed in the state of Ohio in 2016. Health care and social assistance was the largest economic sector based on employment, accounting for 13 percent of total employment, followed by the government (12 percent), manufacturing (10 percent), and retail trade (10 percent) sectors (Table 1).

Annual unemployment rates for Seneca County, the State of Ohio, and the United States are presented in Figure 1. Unemployment in Seneca County peaked at the height of the recession in 2009, with an annual unemployment rate of 12.7 percent, substantially higher than the corresponding statewide (10.2 percent) and national averages (9.3 percent). Unemployment rates have declined in all three areas since 2010, with annual rates ranging from 4.4 percent (U.S.) to 4.8 percent (Seneca County) in 2017 (Figure 1). The drop in the annual unemployment rate in Seneca County has been accompanied by a drop in the number of workers in the labor force, with fewer people employed in the county in 2017 than 8 years earlier in 2009 (26,000 jobs in 2017 compared to 26,600 jobs in 2009) (Ohio Department of Job and Family Services 2018).

Figure 1. Annual Unemployment Rates, 2008 to 2017



Source: Ohio Department of Job and Family Services 2018

Tax Revenues

In Ohio, local government entities are allowed to levy *ad valorem* property taxes on real and personal property within their jurisdictions. Real property tax rates are levied locally and vary by taxing authority. The total tax rate for a parcel includes all applicable levies for the taxing jurisdictions that the parcel falls within. Taxing jurisdictions include school districts, counties, municipalities, townships, and special service districts, with each unique combination of these jurisdictions creating a separate taxing district. Assessed values are established by the County Auditor at 35 percent of appraised market value, with all property required to be reevaluated every 6 years. Seneca County is a primarily rural county with a significant agricultural and durable goods manufacturing base. The 2016 Annual Financial Report for Seneca County noted that the county's \$1.19 billion assessed real property tax base for that year increased by 27 percent over the preceding 6 years, mainly due to residential real estate construction and reevaluations of property within Seneca County (Auditor of State 2017). A total of \$58.4 million was collected in property tax revenues in Seneca County in 2017 (Ohio Department of Taxation 2017). This total includes revenues for all taxing jurisdictions within the county, including school districts, municipalities, townships, and special service districts, as well as the county itself.

Methodology

Economic Impact Analysis

The economic impact of the Project will occur in two phases: 1) the initial construction phase; and 2) following construction, the operations and maintenance (O&M) phase. This report assesses both phases using the JEDI Wind Model, with a separate analysis prepared for each phase. Impacts are assessed at the state (Ohio) and county (Seneca County) levels, resulting in four separate analyses. Construction and operation of the Project will generate economic benefits in local economies through direct expenditures for materials and services in the local area, and new payroll income. Benefits will also result from payments to landowners.

Wind energy projects in the State of Ohio can be exempted from tangible personal property and real property tax payments if they meet certain conditions. The following analysis assumes that Seneca Wind

will meet these conditions and will instead make annual payments in lieu of taxes (PILOT) payments to the Seneca County Treasurer. These payments will also result in economic benefits.

The JEDI Model

The JEDI Wind model is a spreadsheet tool that applies standard input–output multipliers and consumption patterns using multiplier data derived from the IMPLAN (**IMP**act Analysis for **PLAN**ning) model. IMPLAN is a commercially available economic modeling package widely used to assess the economic impacts of renewable energy and many other types of projects.

The IMPLAN model divides the economy into 536 sectors including government, households, farms, and various industries, and models the linkages between the various sectors. The linkages are modeled through input-output tables that account for all dollar flows between different sectors of the economy. Using national industry and county-level economic data derived from the U.S. Bureau of Economic Analysis, U.S. Census, and other government sources, IMPLAN models how spending in one sector of the economy is spent and re-spent in other sectors of the economy. By tracing these linkages, the model approximates the flows of initial project spending through the local economy based on the supply lines connecting the various economic sectors. These linkages vary by sector and also through regional differences in spending and employment patterns. The amount spent locally decreases with each successive transaction away from the initial expenditure due to the effects of savings, taxes, or other activities that happen outside the local economy, known as leakages.

The economic relationships modeled by IMPLAN are embedded in the multipliers used by the JEDI Wind Model, which allows the user to estimate the overall change in the economy that would result from construction and operation of a wind generating facility. The dollars spent on a project’s construction and operation within a state or county are analyzed to determine the total economic impact within the local area. The direct investments in project construction and operation trigger successive rounds of spending that result in an overall increase in employment, income, and output in the local economy. Construction-related impacts are assessed as one-time impacts; O&M-related impacts are modeled as annual impacts.

The JEDI Wind Model combines user inputs and industry-average values to develop overall project costs and allocate expenditures among different sectors of the economy. NREL developed the industry average values used in the model from extensive interviews with power generation project developers, state tax representatives, and others in the appropriate industries. The model allows the user to modify the default average values to incorporate project-specific data, including construction material and labor costs, estimated payments to landowners, and local tax payments, as well as the shares of specific expenditures expected to occur within the analysis area.

The standard JEDI model assesses potential impacts at the state level, using corresponding state-level multipliers derived from IMPLAN. Using Project-specific inputs, this version of the model was used to estimate impacts at the state level for Ohio. In addition, a county-specific version of the model was developed using 2016 IMPLAN data for Seneca County and the JEDI Wind Model’s User Add-in Location feature. This model was used to assess economic impacts at the county level for Seneca County.

Impact Types

Total economic impacts reported by the JEDI Wind Model consist of three components.³ These components are reported separately for the construction and operation phases of the Project.

³ These categories were re-labeled in more recent versions of the JEDI Wind model “to reflect a more accurate description of these impacts and facilitate user interpretation of model results” (NREL 2017). Project Development and On-Site Labor Impacts were previously labeled Direct Impacts. Turbine/Local Revenue and Supply Chain Impacts were identified as Indirect Impacts. The original naming conventions are more consistent with IMPLAN and other input-

Construction Impact Types:

- **Project Development and On-Site Labor Impacts:** This component consists of expenditures on labor (wages and salaries and associated impacts) for workers engaged in on-site construction and people providing professional services in support of the Project. Typical on-site workers include road builders, concrete-pouring companies, construction companies, tower erection crews, and crane operators. Typical professional services include Project developers, and environmental and permitting consultants.
- **Turbine and Supply Chain Impacts:** This component includes the materials and equipment necessary for the Project (e.g., turbines, blades, and towers), and the smaller components that make up the balance of the system (e.g., wiring, inverters, mountings, and transformers), as well as the supply chain of inputs required to produce these materials.
- **Induced Impacts:** These impacts result from the spending of households associated either directly or indirectly with the Project. Workers employed during construction, for example, will use their income to purchase groceries and other household goods and services. Workers at businesses that supply the Project during construction will do the same. Induced effects are sometimes referred to as “consumption-driven” impacts.

Operation Impact Types:

- **On-Site Labor Impacts:** This component consists of expenditures on labor (wages and salaries and associated impacts) for workers engaged in on-site operation of the Project, including site technicians, administration, and management.
- **Local Revenue and Supply Chain Impacts:** This component includes expenditures on goods and services by suppliers who provide goods and services to the Project, as well as payments related to landowner leases and property tax or PILOT contributions.
- **Induced Impacts:** These impacts result from the spending of households associated either directly or indirectly with the Project.

Impact Measures

Impacts are assessed using the following measures as reported by the JEDI Wind Model:

- **Employment:** Jobs are expressed in the JEDI Wind Model as FTEs, or 2,080-hour units of labor (one job equates to one full-time job for one year). Part-time or temporary jobs constitute a fraction of a job. For example, if an engineer works just 3 months on a wind project, that would be considered one-quarter of a job by the JEDI Wind Model.
- **Earnings (or labor income):** Earnings are expressed as the sum of employee compensation and proprietary income.
- **Output:** Output represents the total value of goods and services produced as a result of the Project, and serves as a broad measure of economic activity.

output models. The first category presented here does, however, differ from the typical Direct Impacts reported by IMPLAN and other input-output models because it is based on labor expenditures only and does not include direct expenditures on materials, which are included as part of the second category reported by the JEDI Wind Model.

Impact Sources

Construction

Project construction is expected to take place in 2019, with construction activities expected to extend from the second quarter through the fourth quarter. Based on similar project experience, Seneca Wind estimates that Project construction will directly employ from 175 to 250 workers on-site, including construction workers, engineers, electricians, equipment operators, and a number of other contractors and service providers.

Construction costs for this analysis were provided by Seneca Wind. These cost estimates were used in conjunction with more detailed industry-average values provided by the JEDI Wind Model to adjust the average model input values to more accurately reflect the proposed Project. The largest share of the overall construction cost is the purchase and transportation of the equipment (turbines, blades, and towers) to the Project site. The JEDI Wind Model default settings assume that this component accounts for approximately 75 percent of the total construction costs. The Project-specific estimates developed by Seneca Wind indicated that this component would comprise a smaller, but still substantial share of the total Project costs. Expenditures related to this construction component are expected to occur outside the State of Ohio.

Balance-of-plant activities make up a second broad category of costs. Balance-of-plant activities assessed in the model include materials, labor, and development and other costs. The materials portion includes concrete, rebar and other construction materials as well as the electrical components and cabling required to prepare the site and connect the turbines. The labor component includes the site work, foundations, electrical, erection, and other associated labor needed to construct the Project. Development and other costs include legal fees, engineering, site certificates, and other miscellaneous expenditures. The shares of these expenditures expected to be made locally (either in-state or in Seneca County) are estimated by the JEDI Wind Model. These estimates were reviewed with adjustments made to reflect local conditions and Project-specific information.

Operation

Once the construction phase is complete, O&M of the Project will continue to contribute to the local economy. The Project will provide direct O&M-related employment, and Project-related O&M expenditures will generate economic benefits in the local economy. Typical local O&M-related expenditures include vehicle-related expenditures, such as fuel costs, site maintenance, replacement parts and equipment, and miscellaneous supplies. Project-specific O&M costs developed by Seneca Wind were used for this analysis.

Lease payments to landowners will also generate annual benefits to the local economy over the life of the Project. In most cases these payments represent a net increase in income for the landowner. Each turbine occupies a relatively small footprint when compared to the site as a whole and landowners can usually continue farming and livestock operations on their property. Seneca Wind estimates that landowner payments will total more than \$20 million over the life of the Project. These estimated payments were used to modify the default values estimated by the JEDI Wind Model. The impact of these payments is assessed by the model as an increase in household income.

Wind energy projects in the State of Ohio may be exempted from tangible personal property and real property tax payments if they meet certain conditions. This analysis assumes that Seneca Wind will meet these conditions and will instead make an annual PILOT payment of \$9,000 per MW (as discussed below).

Economic Impacts

Construction and operation related impacts are presented below for Ohio and Seneca County in turn. It should be noted that impacts estimated for Seneca County are substantially lower than those modeled for the state as a whole because there are greater leakages of expenditures at the county level, resulting in

larger benefits at the state level. Further, the state-level evaluation also captures Project-related spending elsewhere in Ohio (i.e., outside Seneca County).

Construction Phase Impacts in the State of Ohio

Estimated construction phase impacts for the State of Ohio are summarized in Table 2. These estimates are one-time impacts developed using the JEDI Wind Model for Ohio. Job estimates are presented in FTEs, with each identified job representing 12 months (2,080 hours) of employment. Construction of the Project is expected to involve 99 on-site FTE jobs that would be filled by Ohio residents. Additional on-site positions that would be filled by out-of-state workers are not included in these estimates. Spending by out-of-state workers is, however, captured in the induced impact estimates. On-site jobs expected to be filled by Ohio workers include those associated with site work, foundations, electrical work, tower erection, and other associated labor needed to construct the plant. In addition, an estimated 22 construction-related service positions would be filled by Ohio workers. Jobs falling under the category of construction-related services include civil and electrical engineers, attorneys, and permitting specialists. Workers with more specialized skills, such as turbine assemblers, crane operators, and high voltage electrical workers are expected to come from outside the state, remaining only for the duration of their employment.

Table 2. Construction Phase Impacts in Ohio

Impact Type/Measure	Jobs ¹	Earnings (\$ million) ²	Output (\$ million) ²
Project Development and Onsite Labor Impacts	121	\$8.89	\$10.72
Construction and Interconnection Labor	99	\$7.74	--
Construction Related Services	22	\$1.15	--
Turbine and Supply Chain Impacts	479	\$27.23	\$90.75
Induced Impacts	195	\$10.59	\$31.15
Total Impacts	795	\$46.71	\$132.62
Notes:			
¹ Jobs are FTE for a period of one year (1 FTE = 2,080 hours). Project development and onsite labor jobs and earnings include only those positions that would be filled by Ohio residents. Positions filled by out-of-state workers are not included in these estimates. Spending by out-of-state workers is, however, captured in the induced impact estimates.			
² Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

Construction of the Project would also support employment, income, and output elsewhere in the state, with turbine and supply chain impacts expected to support 479 jobs in Ohio and induced impacts expected to support 195 jobs (Table 2). A majority of the estimated 479 turbine and supply chain jobs are expected to occur in the construction sector as a result of in-state expenditures on materials, specifically concrete and rebar, equipment, roads, and site preparation. The total also includes jobs in the retail, professional services, and manufacturing sectors, based on expenditures on materials, as well as estimated in-state expenditures on balance-of-plant labor (for example, foundation and electrical work, hauling, and tractor operation). Overall, construction of the Project is expected to support 795 total jobs in Ohio and approximately \$46.7 million in earnings, with total output of approximately \$132.6 million.

Annual Operation Phase Impacts in the State of Ohio

Estimated operation phase impacts for the State of Ohio are summarized in Table 3. These estimates are annual average impacts developed using the JEDI Wind Model for Ohio. Operation of the Project is expected to provide direct employment for 11 workers, all of whom would reside in Ohio. Operation and maintenance of the Project would also support employment, earnings, and output elsewhere in the state, with local revenue and supply chain impacts expected to support 14 jobs in Ohio and induced impacts expected to support an additional 14 jobs (Table 3). Overall, operation of the Project is expected to support 39 total jobs in Ohio and approximately \$2.4 million in earnings, with total output of approximately \$7.8 million. These annual average impacts are expected to occur over the life of Project operation.

Table 3. Annual Operation Phase Impacts in Ohio

Impact Type/Measure	Jobs ¹	Earnings (\$ million) ²	Output (\$ million) ²
Onsite Labor Impacts	11	\$0.60	\$0.60
Local Revenue and Supply Chain Impacts	14	\$0.94	\$4.73
Induced Impacts	14	\$0.82	\$2.42
Total Impacts	39	\$2.36	\$7.75
Notes:			
¹ Jobs are FTE for a period of one year (1 FTE = 2,080 hours).			
² Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

Construction Phase Impacts in Seneca County, Ohio

The Project's estimated construction phase impacts for Seneca County are summarized in Table 4. These estimates are one-time impacts estimated using a county-specific version of the JEDI Wind Model that was developed using 2016 IMPLAN data for Seneca County and the JEDI Wind Model's User Add-in Location feature. Construction of the Project is expected to directly employ approximately 10 workers from Seneca County on-site during the construction period. Positions filled by workers from elsewhere in Ohio and out-of-state are not included in these estimates. Spending by non-resident workers in Seneca County is, however, captured in the induced impact estimates.

The construction and interconnection labor estimates presented in Table 4 are conservative estimates and assume that only a small share of the construction workers estimated to be hired in-state (i.e., workers normally resident in Ohio) would be hired from within Seneca County. These estimates are likely conservative because an estimated annual average of 1,554 construction jobs were identified in Seneca County in 2016 (Table 1), which suggests that a sizeable construction workforce exists within the county. These workers likely have the necessary skills to fill on-site jobs associated with tasks, such as site work, foundations, and general electrical work. In addition, data from the IMPLAN model indicates that an estimated 141 workers were employed in the Construction of new power and communication structures sector (the IMPLAN sector that includes construction of power plants and electric and communication transmission lines) in Seneca County in 2016. This suggests that more specialized workers may also be available for hire within the county.

Construction of the Project would also support employment, income, and output elsewhere in the county, with turbine and supply chain impacts expected to support 31 jobs in Seneca County and induced impacts expected to support an additional 9 jobs (Table 4). Similar to the construction and interconnection labor estimates, the turbine and supply chain impacts in Table 4 are likely conservative estimates because they assume that only a small share of the expenditures on materials estimated to occur in-state would occur in

Seneca County. Materials estimated to be purchased in-state include concrete and rebar, and equipment, as well as materials related to roads and site preparation. Overall, construction of the Project is expected to support 49 total jobs in Seneca County and approximately \$2.4 million in earnings, with total output of approximately \$7.6 million.

Table 4. Construction Phase Impacts in Seneca County, Ohio

Impact Type/Measure	Jobs ¹	Earnings (\$ million) ²	Output (\$ million) ²
Project Development and Onsite Labor	10	\$0.77	\$0.77
Construction and Interconnection Labor	10	\$0.77	--
Construction Related Services	0	\$0.00	--
Turbine and Supply Chain Impacts	31	\$1.31	\$5.69
Induced Impacts	9	\$0.29	\$1.08
Total Impacts	49	\$2.36	\$7.54
Notes:			
¹ Jobs are FTE for a period of one year (1 FTE = 2,080 hours). Project development and onsite labor jobs and earnings include only those positions that would be filled by Ohio residents. Positions filled by workers from elsewhere in Ohio and out-of-state are not included in these estimates. Spending by non-resident workers in Seneca County is, however, captured in the induced impact estimates.			
² Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

Annual Operation Phase Impacts in Seneca County, Ohio

Estimated operation phase impacts for Seneca County are summarized in Table 5. These estimates are annual average impacts developed using the JEDI Wind Model for Seneca County. Operation of the Project is expected to provide direct employment for 11 workers, all of whom would reside in Seneca County. Project O&M would also support employment, earnings, and output elsewhere in the county, with local revenue and supply chain impacts expected to support 13 jobs in Seneca County and induced impacts expected to support an additional 4 jobs (Table 5). Estimated annual impacts include the effects of lease payments to landowners, which Seneca Wind estimates will total more than \$20 million over the life of the Project. Overall, operation of the Project is expected to support 27 total jobs in Seneca County and approximately \$1.2 million in earnings, with total output of approximately \$4.6 million. These annual average impacts are expected to occur over the life of Project operation.

Table 5. Annual Operation Phase Impacts in Seneca County, Ohio

Impact Type/Measure	Jobs ¹	Earnings (\$ million) ²	Output (\$ million) ²
Onsite Labor Impacts	11	\$0.59	\$0.59
Local Revenue and Supply Chain Impacts	13	\$0.45	\$3.60
Induced Impacts	4	\$0.11	\$0.43
Total Impacts	27	\$1.16	\$4.63
Notes:			
¹ Jobs are FTE for a period of one year (1 FTE = 2,080 hours).			
² Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

Tax Revenues

Wind energy projects in the State of Ohio may be exempted from tangible personal property and real property tax payments if they meet certain conditions as provided in Ohio Revised Code (ORC) Section 5727.75. Qualified energy projects that receive this exemption are instead required to make annual PILOT payments. Annual PILOT payments are determined based on the size of the Project and the share of the construction workforce normally resident in the State of Ohio.

According to ORC 5727.75, tangible personal property of a qualified energy project using renewable energy resources is exempt from taxation for tax years 2011 through 2021 if all of the following conditions are satisfied:

- An application is filed for certification of the energy project as a qualified energy project with the director of the Ohio Development Services Agency on or before December 31, 2020.
- An application is filed with the Ohio Power Siting Board (OPSB) for a certificate under ORC section 4906.20.
- The county commissioners of a county in which the energy project is located either adopt a resolution approving the application submitted to the Ohio Development Services Agency or pass a resolution declaring the county an alternative energy zone (AEZ).
- Construction is initiated by January 1, 2021, with construction defined as either the date the application is filed with the OPSB or the date the contract for construction or installation is entered into, whichever is earlier.

If the applicant is granted an exemption from taxation from any of the tax years 2011 through 2021, the qualified energy project is also exempt from taxation for tax year 2022 and all following years.

Estimated PILOT “base” payments range from \$6,000 per MW of nameplate capacity for projects where the majority (75 percent or more) of total construction jobs (measured in FTEs) are filled by workers normally resident in Ohio to \$8,000 per MW for projects where Ohio residents account for a smaller share (50 to 60 percent) of total employment. PILOT payments are \$7,000 per MW of nameplate capacity for projects where 60 to 75 percent of the construction workforce consists of Ohio residents. Under ORC 5727.75, county commissioners may also require an additional service payment, with a combined service and PILOT (“base”) payment not to exceed \$9,000 per MW.

The Board of Seneca County Commissioners adopted a resolution designating Seneca County as an AEZ in October 2011, with an annual service payment required in addition to the annual “base” payment of \$6,000 to \$8,000 per MW (Seneca County Commissioners’ Office 2011). The amount of each service payment shall be the difference between \$9,000 and the “base” payment per MW required under ORC 5727.75. The funds derived from the “base” payment will be distributed to taxing districts in accordance with the applicable millage in the respective taxing districts, with the additional service payments dispersed as decided by the Board of County Commissioners (Seneca County Commissioners’ Office 2011).

Seneca Wind anticipates that it will make payments in lieu of real and personal property taxes in accordance with the applicable statute (ORC 5727.75) and the Board of Seneca County Commissioners’ 2011 resolution (Seneca County Commissioners’ Office 2011). For the Project, with a nameplate capacity of 212 MW, the combined “base” and service payment of \$9,000 per MW will result in annual payments of \$1.91 million during its first year of operation, and each year thereafter. This estimated total of \$1.91 million is equivalent to 3.3 percent of total property tax revenues for all taxing jurisdictions in Seneca County, which were 58.4 million in 2017 (Ohio Department of Taxation 2017).

Conclusion

The preceding analysis estimates the economic and fiscal impacts associated with construction and operation of the proposed Project at the local (Seneca County) and state levels. Impacts were estimated for each geographic area, state and county, using separate JEDI Wind Models. The results of this analysis indicate that construction and operation of the Project would provide direct employment for residents in Seneca County and elsewhere in-state, as well as support economic activity elsewhere in the local and state economies.

Overall, construction of the Project is estimated to support 795 total (Project Development and On-Site, Turbine and Supply Chain, and Induced) jobs in the State of Ohio, and approximately \$46.7 million in labor income, with total economic output of approximately \$132.6 million. In Seneca County, Project construction is estimated to support approximately 49 total jobs and approximately \$2.4 million in labor income, with total economic output of approximately \$7.6 million. Construction impacts would be one-time impacts that would occur only during construction.

Operation of the Project is estimated to support approximately 39 total (direct, indirect, and induced) jobs in the State of Ohio and approximately \$2.4 million in labor income, with total economic output of approximately \$7.8 million. In Seneca County, Project operation is estimated to support approximately 27 full-time jobs and approximately \$1.2 million in labor income, with total economic output of approximately \$4.6 million. These annual average impacts are expected to occur over the life of Project operation.

Seneca Wind anticipates that it will make payments in lieu of real and personal property taxes in accordance with the applicable statute (ORC 5727.75) and the Board of Seneca County Commissioners' 2011 resolution (Seneca County Commissioners' Office 2011), with the Project estimated to generate \$1.91 million in PILOT payments during its first year of operation, and each year thereafter. Seneca Wind also estimates that lease payments to landowners will total more than \$20 million over the life of the Project.

Qualifications of the Preparer

This report was prepared by Matt Dadswell of Tetra Tech, with inputs provided by Seneca Wind LLC, as referenced in the report. Mr. Dadswell has a first class, joint honors, bachelor's degree in Economics and Geography from Portsmouth Polytechnic in England; a master's degree in Geography from the University of Cincinnati; and completed two years of doctoral study in Geography at the University of Washington. Mr. Dadswell has 24 years of experience preparing economic and social analyses for energy projects throughout the United States.

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