Union Ridge Solar

Exhibit H

Socioeconomic Report (Redacted)

Case No. 20-1757-EL-BGN

Socioeconomic Report

REDACTED

Union Ridge Solar Project

Harrison Township, Licking County, Ohio

Prepared for:

Leeward Renewable Energy, LLC
6688 North Central Expressway, Suite 500
Dallas, Texas 75206
Contact: Kelly Pacifico, Senior Development Associate
Tel: 941.735.0776

Prepared by:

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000
Syracuse, New York 13202
P: 315.471.0688
F: 315.471.1061
www.edrdpc.com

December 2020

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

EXECUTIVE SUMMARY

On behalf of Leeward Renewable Energy, LLC (Applicant), Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR) has prepared this socioeconomic report for the proposed Union Ridge Solar Project, an up to 107.7 megawatt of alternating current (MW_{AC}), or 150 megawatt of direct current (MW_{DC}), solar power generating facility (Facility) located in Harrison Township in Licking County, Ohio. The materials contained herein are developed in support of the Applicant's submittal (Application) for a Certificate of Environmental Compatibility and Public Need (Certificate).

The Facility will be located approximately 0.5 mile east of the City of Pataskala, 2 miles northwest of the Village of Kirkersville, and 6 miles northeast of the City of Pickerington. The closest metropolitan area is Columbus, Ohio, located approximately 7 miles west of the Facility (see Figure 2: Regional Facility Location). The proposed Facility will include photovoltaic (PV) solar modules, a facility of fence, belowground electrical collection lines, inverters, access roads, a substation, an operations and maintenance (O&M) building, weather stations, and temporary laydown yards. The Facility is scheduled to begin construction as early as 2022.

The focus of this report is to assess the potential socioeconomic impacts of the proposed Facility on the one village, two cities, nine townships, and two counties that are within a 5-mile radius from the Facility (Study Area; see Figure 1). It reviews relevant conditions throughout the area and interprets trends and patterns of change as represented by several demographic and economic indicators. Potential impacts to employment, earnings, and the overall economic output resulting from the Facility, are then assessed considering the current socioeconomic conditions within the Study Area.[1]

The construction and operation of the Facility will have positive impacts throughout the local and statewide economy. Businesses involved in on-site Facility construction and operations, as well as those associated throughout the industrial supply chain, are expected to see a measurable increase in the demand for their services. In addition, the earnings by workers during construction and operation of the Facility are expected to generate additional spending, creating a "ripple effect" throughout the economy. The employment and economic impacts of the Facility were assessed using the Jobs and Economic Development Impact (JEDI) photovoltaics model (version PV12.23.16), a model established by the National Renewable Energy Laboratory (NREL), with results shown in Table ES-1. The JEDI model results show that Facility construction could increase on-site and off-site employment by an estimated 513 full-time equivalent (FTE) jobs statewide, with total earnings of approximately $33.6 million. The operation and maintenance of the installed Facility is estimated to increase on-site and off-site employment demand by an additional 10 FTE jobs statewide annually, with total annual earnings of approximately $0.8 million. The total value of on-site and off-site

[1] Economic data used within this report reflect pre-COVID-19 conditions, and therefore may not represent current economic conditions.

industrial production and induced benefits in the statewide economy associated with Facility construction is estimated at $65 million and at $1.7 million annually during operation.

Table ES-1. Summary of Estimated Results of Statewide Jobs and Economic Impact Analysis

	Jobs (FTE)	Earnings (Millions)	Output (Millions)
Construction			
Project Development and On-site Labor Total	279	$19.6	$21.3
Construction & Installation Labor	223	$16.2	-
Construction and Installation Related Services	56	$3.4	-
Module & Supply Chain Impacts	126	$8.2	$25.7
Induced Impacts	108	$5.8	$17.9
Total Impacts	513	$33.6	$65.0
Annual Operation			
On-site Labor Impacts	2	$0.3	$0.3
Local Revenue & Supply Chain Impacts	3	$0.2	$0.5
Induced Impacts	5	$0.3	$0.8
Total Impacts	10	$0.8	$1.7

Source: NREL JEDI model (version PV12.23.16) (USDOE NREL, 2016). Cost values verified by the Applicant in June 2020.
Notes: Earnings and Output values are millions of dollars in 2020 dollars. Construction and operating period jobs are full-time equivalent for one year (1 FTE = 2,080 hours). Impact totals and subtotals are independently rounded, and therefore may not add up directly to the integers shown in this table.

Furthermore, the Facility is anticipated to have a positive impact on local taxing jurisdictions, likely through a payment-in-lieu of tax agreement (PILOT) and other payments. Taxing jurisdictions located within the Study Area that would receive various forms of payments related to the Facility include, but are not limited to, Harrison Township, Licking County Fund, and the Southwest Licking Local School District. Assuming that a PILOT is implemented, it will be a positive revenue stream to local taxing jurisdictions. The PILOT amount is anticipated to total $753,900 each year and will continue annually for the lifespan of the Facility. The Facility will not impose significant additional burdens on municipal and school district services and thus will not increase the costs to the communities in the region.

This assessment shows that the construction and operation of the Facility will have a positive economic impact on the communities within the Study Area. Through lease payments to private landowners, short- and long-term job creation, and increased payments to the taxing jurisdictions, the Facility will supply a revenue stream to the community without requiring significant services or expenditures on the community's behalf.

INTRODUCTION

This report reviews relevant socioeconomic conditions in the Study Area and interprets trends and patterns of change as represented by several demographic and economic indicators. Potential impacts to employment, earnings, and overall economic output from the Facility are then assessed considering the current socioeconomic conditions within the Study Area. When such comparison is informative, state and federal demographic and economic data also are included. Unless noted otherwise, the Study Area for this report includes the following communities, all of which are found wholly or partially within the Study Area: Liberty, Walnut, and Violet townships in Fairfield County and Etna, Harrison, Union, Jersey, St. Albans, and Granville townships, the Village of Kirkersville, and the cities of Pataskala and Reynoldsburg in Licking County.

Part I of this report presents a socioeconomic profile of the Study Area and the State of Ohio, including a demographic profile with specific data on population trends, projected population growth, and civilian labor force data. Part II reviews the types of potential impacts that could be experienced throughout the state and region, including increased housing demand, commercial and industrial employment, and transportation networks. Part III describes the methods of analysis of potential economic benefits provided within this report, including an overview of the JEDI model. The results of the JEDI model are presented in Part IV, which describes the jobs created by the construction and operation of the Facility, as well as a summary of payments to landowners as a result of land leases. Part V reviews the potential impacts of the Facility on local taxing jurisdictions.

PART I: SOCIOECONOMIC PROFILE

1. Population trends

As shown in Figure 1, the majority of the 5-mile Study Area is within Licking County with the southern portion in Fairfield County. The Facility is located approximately 7 miles east of the Columbus metropolitan area. As indicated in Table 1, the populations of the counties within the region have grown slightly in recent years. At a local level, eleven of the twelve communities within the 5-mile Study Area have increased their population in the past 18 years with one jurisdiction demonstrating a decrease in population. County populations are expected to continue the overall trend of an annual population increase ranging from 1.0% and 1.4% (see Table 1).

Table 1: Population

Jurisdiction within a 5-Mile Radius of Facility	2000 Population	2018 Population	Annual Growth Rate (2000-2018)	Projected 2030 Population	Projected Total Growth (2018-2030)	2018 Population Density (people per square mile)
Licking County	145,491	172,293	1.0%	194,685	13.0%	251
Fairfield County	122,759	152,910	1.4%	179,915	17.7%	301
Etna Township	5,410	16,880	11.8%	64,221	280.5%	721
City of Reynoldsburg	32,069	37,644	1.0%	42,246	12.2%	3432
Harrison Township	6,494	7,885	1.2%	9,088	15.3%	263
Village of Kirkersville	520	405	-1.2%	349	-13.8%	214
Union Township	8,339	9,060	0.5%	9,596	5.9%	204
City of Pataskala	10,249	15,465	2.8%	21,610	39.7%	547
Jersey Township	2,841	2,881	0.1%	2,908	0.9%	106
St. Albans Township	2,060	2,513	1.2%	2,907	15.7%	95
Granville Township	8,994	10,017	0.6%	10,804	7.9%	359
Liberty Township	7,265	8,137	0.7%	8,813	8.3%	162
Walnut Township	6,436	6,979	0.5%	7,382	5.8%	138
Violet Township	26,914	41,117	2.9%	58,159	41.4%	950

Source: U.S. Census Bureau Decennial Census (2000), ACS 5-Year Estimates (2014-2018), population projections based on respective 2000-2018 growth rates.

Although employment related to the construction of the Facility will be substantial, this employment is relatively short-term and is not expected to result in the permanent relocation of construction workers to the area; therefore, the Facility is not anticipated to generate significant population growth within the Study Area. The number of potential short- and long-term employment opportunities associated with the construction and operation of the Facility is discussed in further detail Part IV.

2. Employment statistics

Table 2 illustrates the unemployment rates in counties within 5 miles of the proposed Facility, as well as the broader State of Ohio. Annual average unemployment rates have decreased both state-wide and county-wide from 2016 to 2018. Tables 3 illustrates statewide employment broken down by sector for 2018, indicating the statewide number of employees, payroll, and number of operations in construction, administration, and accommodation industries, along with other sectors.

Table 2: Local Labor Force and Unemployment

County	Annual Unemployment Rate		
	2016	2017	2018
Licking County	6.6%	5.9%	4.9%
Fairfield County	6.0%	5.1%	4.4%
State of Ohio	7.2%	6.5%	5.8%

Note: Not Seasonally Adjusted, Source: U.S. Census Bureau, American Community Survey 5-Year Estimates 2016, 2017, and 2018.

Table 3: Employment and Payroll by NAICS Sector in Ohio

NAICS code description	Number of full and part-time employees	Annual payroll ($1,000)	Total establishments
Total for all sectors	4,878,062	236,239,178	251,937
Agriculture, forestry, fishing and hunting	1,237	44,310	298
Mining, quarrying, oil and gas extraction	11,103	821,035	692
Utilities	24,823	2,632,581	713
Construction	200,028	12,766,242	20,011
Manufacturing	683,660	39,419,978	13,888
Wholesale trade	233,741	15,097,713	13,483
Retail trade	557,095	15,001,013	34,906
Transportation and warehousing	191,804	9,816,586	7,835
Information	100,197	6,699,447	4,298
Finance and insurance	262,686	21,204,571	17,147
Real estate and rental and leasing	62,899	3,089,671	10,751
Professional, scientific, technical	257,936	18,599,123	23,777
Management of companies and enterprises	152,558	15,507,405	2,211
Administrative and support and waste management and remediation services	407,148	14,509,576	13,460
Educational services	114,420	3,487,279	3,093
Health care and social assistance	857,995	41,060,503	29,748
Arts, entertainment, and recreation	78,735	2,963,293	3,910
Accommodation and food services	478,811	7,661,289	24,324
Other services (except public admin.)	200,881	5,851,182	27,179
Industries not classified	305	6,381	213

Source: U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages 2018.

Anticipated employment impacts of the Facility are outlined in Table ES-1. Employment related to the construction of the Facility will be relatively short-term and is not expected to result in permanent impacts to statewide or regional

industrial sectors. Operations and maintenance of the Facility will include permanent on-site labor and indirect jobs created through local revenue, supply chains, and induced impacts. While these permanent positions will have positive impacts throughout the statewide economy, the scale of job creation is not anticipated to be significant when compared with current statewide employment and payroll by industry sector (e.g., administrative services or accommodation/food services demonstrated in Table 3). Therefore, the Facility is not anticipated to have a significant impact on statewide industrial sectors during construction or operation. The short- and long-term employment opportunities associated with the construction and operation of the Facility are discussed in further detail Part IV.

PART II: REGIONAL DEVELOPMENT IMPACTS

The regional economy surrounding the Study Area is shaped in large part by both the rural economy of Licking and Fairfield counties and the manufacturing economy of the greater Columbus metropolitan region. As a primarily agricultural economy in close proximity to one of the strongest manufacturing hubs in the U.S., this area has made substantial progress toward stabilization and growth as it continued to emerge from the recession in the 2010s.[2] The regional context for the development of this Facility is discussed in further detail below in terms of three primary components: housing, commercial and industrial development, and transportation. In addition, this study reviews the compatibility of the proposed Facility with regional developmental goals and plans.

1. Housing

Table 4 summarizes housing characteristics in the State of Ohio and the communities within the Study Area.

[2] It is noted, however, that economic data used within this report reflect pre-COVID-19 conditions and therefore may not represent current economic conditions.

Table 4: Study Area Housing Characteristics

Jurisdiction	Total housing units	Occupied units	Vacant units	Vacancy rate (%)		Median value (owner-occupied)	Median gross rent
				Home-owner	Rental		
State of Ohio	5,188,270	4,653,075	534,195	1.6	5.6	$140,000	$788
Fairfield County	60,573	55,748	4,825	1.4	5.8	$173,600	$866
Licking County	70,647	64,016	6,631	1.9	7.4	$164,100	$832
Etna Township	6,190	5,844	346	0.5	8.9	$182,200	$1,240
City of Reynoldsburg	15,258	14,291	967	1.8	7.2	$153,100	$1,016
Harrison Township	2,991	2,898	93	0.1	0.0	$209,100	$1,140
Village of Kirkersville	180	165	15	1.5	0.0	$114,600	$675
Union Township	4,132	3,410	722	0.6	3.5	$160,000	$683
City of Pataskala	5,748	5,434	314	1.2	5.5	$172,700	$953
Jersey Township	1,314	1,163	151	0.0	0.0	$259,100	$1,149
St. Albans Township	1,138	1,024	114	3.4	0.0	$190,000	$1,139
Granville Township	3,070	2,802	268	2.6	0.0	$295,800	$1,049
Liberty Township	3,144	2,930	214	0.0	8.4	$190,400	$950
Walnut Township	3,494	2,758	736	2.4	8.3	$157,100	$928
Violet Township	15,049	14,260	789	1.4	6.0	$221,900	$1,178

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates 2014-2018.

Within the Study Area, both counties have relatively similar median housing values as well as median gross rent values, both which are notably higher than the State of Ohio. At a local scale, Violet, Jersey, Harrison, and Granville townships have the highest median housing values, exceeding $200,000, much higher than that of the State of Ohio. A little over half the jurisdictions also had rent which exceeded $1,000, surpassing the median gross rent in both counties and the State of Ohio. Within the counties, 11,456 housing units were reported to be vacant, 4,729 of which occur within the Study Area communities. While the Facility development may not represent a widespread boom for rental property owners, it is worth noting that the availability of vacant rental housing throughout the Study Area indicates that the Facility should not have a destabilizing effect on current renters. Given these figures, it is not expected that the development of the Facility will have a significant impact on the regional housing market.

2. Commercial and Industrial Development

The diversification of Ohio's energy generation portfolio into renewables will have significant and positive economic impacts. At both regional and national levels, the state is noted to have a relatively high capacity for both distributed and utility-scale solar photovoltaic systems. During the third quarter of 2020, the Solar Energy Industries Association

(SEIA) reported that Ohio had 360 MW of installed solar capacity, with $815.3 million of total solar investment and $100.75 million of that invested in 2019 alone. At a national level, Ohio ranked 28th in the U.S. for installed solar capacity (Solar Energy Industries Association 2020). Furthermore, there is tremendous capacity for growth due to an established manufacturing base and trained workforce, central location and reliable transportation infrastructure, and a diverse array of research centers and technical advisory services (Environmental Law & Policy Center 2016). SEIA projects that Ohio's installed solar capacity will grow to 1,904 MW by 2025.

SEIA estimated that the State of Ohio is currently home to 268 companies providing jobs in the solar industry, 105 of which are solar supply chain businesses including component and equipment manufacturers (Solar Energy Industries Association, 2020). Many of the state's plastic and glass manufacturers have taken advantage of the growing demand for solar by becoming suppliers for these components and equipment (Environmental Law & Policy Center, 2016). The 2019 Solar Jobs Census reports that Ohio ranks in the top seven states for solar jobs, with 7,282 workers in the solar industry (a 1.7% increase over 2018). Most of these jobs (57%) were for installation, while the remainder were for manufacturing (28%), wholesale trade distribution (10%), operations and maintenance (3%), and other fields (3%). Since 2018, jobs in the field of installation and operations have increased, while jobs in the manufacturing and distribution fields have decreased slightly (The Solar Foundation 2019). Although the rate of job growth in Ohio's solar industry is beginning to plateau (solar jobs increased by 21.2% in 2016, 11.8% in 2017, 10.5% in 2018, and 1.7% in 2019), the steady and continued solar industry growth reflects the industry's stable foothold in the state. Given the pandemic-led economic disruption underway at the time of submission of this Application, additional employment in the solar industry sector may be especially beneficial.

The State of Ohio has developed a specific renewable energy portfolio requirement, that applies to all utilities/entities that provide electricity to consumers in the state (see Section 4928.64 of the Ohio Revised Code). The requirement calls for annual increases in the percentage of renewable energy that contributes to the overall statewide generation. The requirement lays out a goal of 8.5% renewable energy by 2026, and the development of the proposed Facility is compatible with that goal. According to the US Energy Information Administration, rooftop and utility scale solar generation accounted for one-tenth of Ohio's total renewable energy portfolio in 2019. Utility scale solar made up about half of the total solar generation (U.S. Energy Information Administration 2021). Specific short- and long-term economic impacts of this Facility on commercial and industrial development throughout the region are described in further detail in Part V of this report.

3. Transportation

The region surrounding the Facility features U.S. and Ohio highways, county and local roadway networks, and rail lines. These facilities are described in more detail below.

The primary transportation routes near the Facility are U.S. Route (US) 40 and Interstate (I) 70, which run east-west approximately one mile and two miles, respectively, from the southern edge of the Facility. A series of county and local roads intersect and surround the Facility. Delivery routes have not yet been finalized, but it is likely that US 40 will be used as the primary avenue for Facility components deliveries. Once at the Facility, county and township roads will be utilized for transportation. The proposed Facility is not expected to cause any substantial disruption to major transportation corridors serving the Study Area, as most solar photovoltaic components and equipment are relatively small and require only relatively low impact means of transport. For more information about roads, see the Route Evaluation Study, included with the Application.

One freight rail line operated by the Columbus and Ohio River Railroad Company runs through the Study Area. The Columbus and Ohio River Railroad (CUOH) runs east-west and bisects the Study Area, through the City of Pataskala and approximately 1,000 feet north of the Facility. The Facility is not anticipated to impact the Columbus and Ohio River Railroad Company and the rail system is not anticipated be used for the transportation of any Facility components.

4. Local and Regional Plans

The proposed site for the Facility is in Harrison Township, Licking County, Ohio. The surrounding 5-mile Study Area is comprised of two counties (Licking and Fairfield), nine townships (Violet, Liberty, Walnut, Union, Harrison, Etna, Jersey, St. Albans, and Granville), two cities (Reynoldsburg and Pataskala), and one village (Kirkersville). Six out of nine townships, both cities, and one of the two counties (Fairfield County) have existing land use plans. No plans were available for Walnut and Liberty townships located in Fairfield County, nor were they available for the Village of Kirkersville. Descriptions of existing identified plans from the above-mentioned jurisdictions within the 5-mile Study Area and their compatibility with the Facility are described as follows.

- 1993 Harrison Township Comprehensive Plan:

  The plan focuses on existing and proposed land uses for Harrison Township. The plan is guided towards land use and growth management under the concept of "preserving the land and the rural character of the community" (pg. 5). The land underlying the Facility is expected to remain intact, be maintained, and eventually decommissioned and allowed to return to prior agricultural use. Therefore, the Facility supports this goal by preventing urban sprawl or permanent development. Additionally, this Facility is compatible with the overall rural character of the area by providing supplemental income for existing landowners to encourage and continue existing agricultural practices.
- 1995 St. Albans Township Comprehensive Plan with 2007 Addendum:

  The Comprehensive Plan for St. Albans Township and the Village of Alexandria was adopted in 1995. In 2007, an Addendum was approved by the St. Albans Township Board of Trustees. Land use goals encourage agricultural uses balanced with orderly development. The plan seeks to maintain current farming and agricultural activities as the township's main commercial/industrial activity. The proposed Facility is not located

in St. Albans Township and therefore is not anticipated to impact land use or development patterns within the township.

- 1998 Union Township Comprehensive Plan:

  The plan's goals encourage the protection of agricultural activities and preservation of land uses to maintain the township's rural character. The Facility is located outside the limits of Union Township, therefore is not anticipated to impact land use within the township.

- 2005 Violet Township Land Use and Transportation Plan:

  The 2005 Violet Land Use and Transportation Plan, an update to the 1998 Violet Township Development Plan, addresses recent local growth patterns. The plan's established vision accommodates growth (residential, commercial, and industrial) and enhances the quality of life. This continuous growth is expected due to encroachment from the City of Columbus and along highway corridors (Interstate 70 and State Route 33). The proposed Facility is not located in the Township but is compatible with the plan's land use goals.

- 2010 Jersey Township Comprehensive Plan:

  In this plan, housing, commercial, and industrial development are balanced with the goal to preserve the Township's rural and small-town characteristics. Agricultural goals discussed in the plan aim to protect and preserve farmland, particularly from urban sprawl and development. The proposed Facility is not located in Jersey Township and therefore is not anticipated to impact land use, or development patterns within the township.

- 2011 Etna Township Comprehensive Plan:

  The Etna Township Comprehensive Plan's purpose is to guide future growth and development for the next 20 years. Given development encroaching from the Columbus metropolitan area, it is the community's desire to maintain a rural and agricultural atmosphere balanced with economic development and new job opportunities. Preservation of farmland and the promotion of environmentally friendly energy enterprise development are considered as strategies to implement natural resource and economic development goals. The Facility is compatible with the Township's vision for economic development, green energy, and farmland preservation by developing infrastructure that provides renewable energy to the region.

- 2012 Granville Township/Village Comprehensive Plan Update:

  This comprehensive plan aims to guide decision making for up to 10 years within the township and Village of Granville. Considering the ongoing development pressures from the Columbus metropolitan area and the potential loss of the rural character of the township, the plan presents goals of farmland preservation, green development, and conservation designs. The proposed Facility is to be located well outside the Township's boundary; however, the Facility does not affect adversely the plan's goals.

- 2017 Fairfield County Land Use Plan:

This plan's purpose is to guide future growth, preservation, and revitalization efforts within Fairfield County. Farmland preservation programs and other tools are identified as strategies to prevent farmland loss to growth and development. The proposed Facility will not be located in Fairfield County; however, the Facility does not affect adversely the plan's goals.

- 2018 City of Reynoldsburg Comprehensive Plan:
  The goals discussed within this plan aim to improve the residents' quality of life by expanding housing options, supporting economic development, and diversifying transportation networks. The majority of the City of Reynoldsburg lies outside the 5-mile Study Area; therefore, the Facility does not affect adversely the plan's vision for the City.
- 2019 City of Pataskala Comprehensive Plan (Draft):
  This comprehensive plan promotes the use of renewable energy. Outlined in the plan are many strategies incorporating renewable energy/energy efficiency, including revisions to development guidelines, zoning code allowed uses, and financing tools for individuals who wish to invest in energy efficient improvements. Additionally, the plan encourages the conservation of existing agricultural lands and the small-town character of the city. The Facility is to be located outside the City of Pataskala; however, the Facility aligns with the plan's initiative to encourage renewable energy practices.

5. Concurrent or Secondary Uses

The Applicant has no plans for concurrent or secondary use of the Facility. The public will be prohibited from entering the Facility, which will be enclosed by perimeter fencing. These prohibitions against entry, as well as warnings regarding the dangers of high-voltage equipment, will be displayed on appropriate signage throughout the Facility. It is possible that on occasion, guided tours of the Facility by qualified personnel may allow designated members of the public to enter the facility for limited periods of time.

PART III: MEASURING ECONOMIC IMPACTS

1. Calculating Economic Benefits

Quantifying the economic impacts of the proposed Union Ridge Solar Project is essential to understanding the potential benefits that the Facility could have on the statewide (i.e., local) economy. Solar facility development, like other commercial development projects, can expand the local economy through both direct and indirect means. Income generated from direct employment during the construction and operation of the Facility will subsequently be used to purchase local goods and services, creating a ripple effect throughout the local economy. This report analyzes three levels of impact that the proposed Facility may have on the statewide economy:

- On-site labor impacts: These are the direct impacts experienced by the companies and individuals residing in Ohio engaged in the construction and operation of the Facility. This value estimates the dollars spent on

labor and professional services by project developers, consultants, and construction contractors, as well as operation and maintenance (O&M) personnel. On-site labor impacts do not reflect material expenditures.

- Module and supply chain impacts: These impacts measure the estimated increase in demand for goods and services in industry sectors that supply or otherwise support the companies engaged in construction and operation (also known as "backward-linked" industries). These measures account for the demand for goods and services such as project components, project analysis, legal services, financing, and insurance.
- Induced impacts: Induced impacts measure the estimated effect of increased household income resulting from the Facility. Induced impacts reflect the reinvestment of earned wages, as measured throughout the first two levels of economic impact. This reinvestment can occur throughout the economy in a variety of sectors, such as on household goods, entertainment, food, clothing, and transportation.

Each of these three categories can be measured in terms of three indicators: jobs (as expressed through the increase in employment demand), the amount of money earned through those jobs, and the overall economic output associated with each level of economic impact. These indicators are described in further detail below:

- Jobs: Jobs refer to the increase in employment demand as a result of the development of the Facility. These positions are measured across each level of impact, such that they capture the estimated number of jobs on site, in supporting industries, and in the businesses that benefit from household spending. For the purposes of this analysis, this term refers to the total number of year-long full-time equivalent (FTE) positions created by the Facility. Persons employed for less than full time or less than a full year are included in this total, each representing a fraction of an FTE position (e.g., a half-time, year-round position is 0.5 FTE). Figures in this analysis are rounded to the nearest whole number.
- Earnings: This measures the wages and salary compensation paid to the employees described above.
- Output: Output refers to the value of industry production in the state or local economy, across all appropriate sectors, associated with each level of impact. For the manufacturing sector, output is calculated by total sales plus or minus changes in inventory. For the retail sector, output is equal to gross profit margin. For the service sector, it is equal to sales volume. For example, output would include the profits incurred by those businesses that sell electrical transmission cable or motor vehicle fuel for use in the Facility.

2. Methodology

The employment and economic impacts of the Facility were assessed using the Jobs and Economic Development Impact (JEDI) photovoltaics model (version PV12.23.16). The JEDI model was created by the National Renewable Energy Laboratory (NREL)—a government-owned, contractor-operated laboratory funded by the U.S. Department of Energy (USDOE)—to assess the economic impacts of proposed solar energy generation facilities during both the construction and operation phases (USDOE NREL, 2020). This model allows users to estimate jobs, earnings, and

economic output by impact level (described below) using Facility-specific data provided by the Applicant (such as anticipated year of construction, size of project, module type, and location) and geographically defined multipliers. These multipliers are produced by IMPLAN Group, LLC using a software/database system called IMPLAN (IMpact analysis for PLANning), a widely-used and widely-accepted general input-output modeling software and data system that tracks each unique industry group in every level of the regional data (IMPLAN Group, 2019). The most currently available IMPLAN multipliers (2018) for the State of Ohio were used during the time of analysis (September 2020).

Using the JEDI model to calculate the number of jobs and economic output from a proposed facility is a two-step process. The first step requires Facility-specific data inputs. For purposes of the JEDI model, the Applicant has assumed the following Facility-specific inputs:

- Project Location: State of Ohio
- Anticipated Year of Construction: 2022
- System Application: Utility-Scale
- Capacity: 150 MW_{DC}, 108 MW_{AC}
- Module Material: Crystalline Silicon
- System Tracking: Single Axis Tracking
- Base Installed System Cost: <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>
- Annual direct Operations and Maintenance Cost: <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>
- Money Value (Dollar Year): 2020

Using this Facility-specific data, the JEDI model then creates a list of default values, which include project cost values, default tax values, default lease payment values, and default local share of spending values. These default values are derived from 10 years of research by NREL, and stem from various sources, including interviews and surveys of leading project owners, developers, engineering and design firms, and construction firms active in the solar energy sector.

The second step of the JEDI model methodology requires the review, and if warranted, the customization of default project cost values to more reasonable estimates. The Applicant reviewed the default project cost values and statewide shares subtotaled by each of the following categories in the JEDI model: Materials and Equipment, Construction Labor, Construction Other Costs (e.g., permitting and overhead during construction), Labor during Operation & Maintenance (O&M), Materials and Services during Operation & Maintenance, Debt Financing, Tax Parameters, Payroll Parameters. The Applicant's team then made specific adjustments to improve accuracy (see Table 5).

<BEGIN CONFIDENTIAL INFORMATION>

Table 5: Adjustments Made to JEDI Model Cost Inputs

Facility Expenditure Categories	JEDI Default Value	Adjusted Value	Change
Construction Materials & Equipment Costs	$57,232,913	[redacted]	[redacted]
Construction Labor Total Costs	$9,655,624	[redacted]	[redacted]
Construction - Other Costs	$57,611,464	[redacted]	[redacted]
Construction Materials and Equipment Sales Tax	$0	[redacted]	[redacted]
Operating/Maintenance Labor Costs	$1,845,000	[redacted]	[redacted]
Operating/Maintenance Materials and Services	$1,230,000	[redacted]	[redacted]
Operating/Maintenance Materials/Equip. Sales Tax	$0	[redacted]	[redacted]
Local Property Tax Payments	$0	[redacted]	[redacted]
Payroll Parameters Construction Worker Hourly Wage	$21.39	[redacted]	[redacted]
Payroll Parameters O&M Technician Hourly Wage	$21.39	[redacted]	[redacted]
Payroll Parameters Construction Worker Employer Overhead	45.6%	[redacted]	[redacted]
Payroll Parameters O&M Technician Employer Overhead	45.6%	[redacted]	[redacted]

Source: Jobs and Economic Development Impact model (USDOE NREL, 2017); Cost values reviewed by the Applicant in June 2020.

<END CONFIDENTIAL INFORMATION>

a. Capital and Intangible Costs

In addition to the aforementioned construction costs specified as inputs for the JEDI analysis, the Applicant is presenting additional capital and intangible cost details for the purposes of responding to the Application requirements.

i. Estimated Capital and Intangible Costs by Alternative

The total estimated capital and intangible costs of the Facility are <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>. As described in Section 4906-4-04 of the Application, the Applicant has not proposed alternative project areas. Therefore, no cost comparison between alternatives is available.

ii. Cost Comparison with Similar Facilities

Installed project costs compiled by the U.S. Department of Energy's Lawrence Berkeley National Laboratory (Berkeley Laboratory) in December 2019 indicate that the capital costs of the Facility are lower than recent industry trends. The Berkeley Laboratory compilation shows that capacity weighted average installed costs in 2018 averaged roughly $\$1,640/kW_{AC}$ (Bolinger, Seel, & Robson, 2019).

By way of further comparison, solar facilities installed in 2018 with capacities from 100 to 200 MW had a median cost of around $\$1,400/kW_{AC}$ (Bolinger, Seel, & Robson, 2019). These costs are higher than the cost estimated for the Facility, which could be attributed to locational and system size differences. The estimated cost of the Facility is not anticipated to substantially differ from other Facilities completed by the Applicant.

iii. Present Worth and Annualized Capital Costs

Capital costs will include development costs, construction design and planning, equipment costs, and construction costs. The costs will be incurred within a year or two of start of construction. Therefore, a present worth analysis is essentially the same as the costs presented above <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>. As alternative project areas and facilities were not considered in this Application, the capital cost information in this section is limited to the proposed Facility.

b. Operation and Maintenance Expenses

In addition to the aforementioned operation and maintenance costs specified as inputs for the JEDI analysis, the Applicant is presenting additional O&M cost details for the purposes of responding to the Application requirements.

i. Estimated Annual Operation and Maintenance Expenses

For the first two years of commercial operation, staffing is estimated to be <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>. O&M costs are estimated at <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>, including staffing costs.

ii. Operation and Maintenance Cost Comparisons

O&M costs are a significant component of the overall cost of solar projects but can vary widely between facilities. The Berkeley Laboratory has compiled O&M cost data for 48 installed utility scale[3] solar power projects in the United States, totaling 900 MW_{AC} of capacity, with commercial operation dates of 2011 through 2018. In general, facilities installed more recently have incurred lower O&M costs than those installed in 2011. Specifically, capacity weighted average O&M costs for projects constructed in 2011 was approximately \$32/kW_{AC}-year, and then decreased to \$19/kW_{AC}-year for projects constructed in 2018 (Bolinger, Seel, & Robson, 2019). According to the Berkeley Laboratory, this decrease could be the result of utility companies capturing economies of scale as their solar operations grow over time.

The O&M costs for the Facility are estimated to be approximately <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>, depending on the maturity of the project each year of its life cycle. These estimated O&M costs exclude all other ongoing expenses related to environmental monitoring, property taxes, land royalties, reverse power, and insurance. The O&M costs for the Facility are not anticipated to be significantly different from other facilities the Applicant operates.

[3] The authors of this report considered "utility scale" to be any project above 5 MW_{ac}

iii. Present Worth and Annualized Operation and Maintenance

The annual O&M costs will be subject to inflationary increases. Therefore, these costs are expected to increase with inflation after the first two years. The net present value of the O&M costs, assuming a 35-year term, an inflation rate of 2%, and a 7% discount rate, is approximately <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>. As alternative project areas and facilities were not considered in this Application, the O&M cost information in this section is limited to the Facility.

c. Cost of Delays

Hypothetical monthly delay costs would depend on various factors. If a delay was to occur in the permitting stage, the losses would be associated with the time value of money resulting from a delay in the timing of revenue payments. While these values are subject to negotiation with potential counterparties and power purchase agreement discussions, this is estimated to be approximately <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>. If the delay were to occur during construction, costs would include lost construction schedule days and those associated with idle crews and equipment. This is estimated to be approximately <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>.

There could also be penalties associated with failing to meet a delivery deadline under a potential power purchase agreement. In addition, significant losses would be incurred if the delays prevented the Facility from meeting deadlines to qualify for the existing federal Investment Tax Credit. Prorating these one-time delay costs monthly would not be meaningful, as the lost opportunity is triggered at a single deadline and does not accrue over time.

PART IV: ECONOMIC IMPACT ON THE LOCAL ECONOMY

The results of the socioeconomic analysis are illustrated in Table 6 below and summarized in the narrative that follows. The results shown in Table 6 describe the potential impact of the Facility on industries throughout the state, including the direct labor impacts that occur specifically within the local economy.

Table 6: Local Economic Impacts

	Jobs (FTE)	Earnings (Millions)	Output (Millions)
Construction			
Project Development and On-site Labor Total	279	$19.6	$21.3
Construction & Installation Labor	223	$16.2	-
Construction and Installation Related Services	56	$3.4	-
Module & Supply Chain Impacts	126	$8.2	$25.7
Induced Impacts	108	$5.8	$17.9
Total Impacts	513	$33.6	$65.0
Annual Operation			
On-site Labor Impacts	2	$0.3	$0.3
Local Revenue & Supply Chain Impacts	3	$0.2	$0.5
Induced Impacts	5	$0.3	$0.8
Total Impacts	10	$0.8	$1.7

Source: NREL JEDI model (version PV12.23.16) (USDOE NREL, 2016). Cost values verified by the Applicant in June 2020
Notes: Earnings and Output values are millions of dollars in 2020 dollars. Construction and operating period jobs are full-time equivalent for one year (1 FTE = 2,080 hours). Impact totals and subtotals are independently rounded, and therefore may not add up directly to the integers shown in this table.

1. New Jobs in the Local Economy

Demand for new jobs associated with the Union Ridge Solar, LLC Project will be created during both construction and operation. The money injected into the statewide economy through the creation of these jobs will have long-term, positive impacts on individuals and businesses in Ohio as it ripples through the economy.

2. Local Economic Impact: Construction Phase

Based upon JEDI model computations, it is anticipated that construction of the proposed Facility could directly generate employment of an estimated 279 on-site construction and project development personnel FTE positions with an average wage rate of $24 per hour and 45.6% employer payroll overhead. Module and supply chain industries could in turn generate an additional 126 jobs over the course of Facility construction. In addition, Facility construction could induce demand for 108 jobs through the spending of additional household income. The total impact of 513 new job equivalents could result in up to approximately $33.6 million in earnings, assuming a 2022 construction start and wage rates consistent with statewide and nationwide averages. Nationally, the estimated national wage rate for solar photovoltaic installers is $22.12 per hour and statewide, labor wages range from approximately $22 per hour for all installation, maintenance, and repair operations to approximately $50 per hour for construction management occupations (Bureau of Labor Statistics, 2019). Local employment could primarily benefit those in the construction

trades, including laborers and electricians. Facility construction will also require workers with specialized skills, such as panel assemblers, specialized excavators, and skilled utility electricians. It is anticipated that many of the highly specialized workers will come from outside the immediate area, but will still be local to OH, and will remain only for the duration of construction.

In addition to jobs and earnings, the construction of the Facility is expected to have a positive impact on economic output, a measurement of the value of goods and services produced and sold by backward-linked industries. As described in the definition above, output provides a general measurement of the amount of industry sector production connected to a given project. The value of economic output associated with construction of the Facility is estimated to be $65.0 million. Between workers' additional household income and industries' increased production, the impacts associated with the Facility are likely to be experienced throughout many different sectors of the statewide economy.

3. Local Economic Impact: Operations and Management Phase

Based upon JEDI model computations, the O&M of the proposed Facility is estimated to generate two direct FTE jobs with estimated annual earnings of approximately $0.3 million. Wage rates for the direct operational employees are projected to be $48.55 per hour with 45.6% employer payroll overhead. This is higher than the Ohio state averages, which are estimated to be approximately $22 per hour for installation, maintenance, and repair occupations (Bureau of Labor Statistics, 2019).

Operations and maintenance of the Facility also should generate new jobs in other sectors of the economy through supply chain impacts and the expenditure of new and/or increased household earnings. Increased employment demand throughout the supply chain is estimated to result in approximately three jobs with annual earnings of approximately $0.2 million. In addition, it is estimated that five jobs with associated annual earnings of $0.3 million will be induced through the increased household spending associated with earnings related to Facility operations. These impacts may include restaurant, hospitality, and other tourism-derived local spending from employees and visitors to the Facility. In total, while in operation, the Facility is estimated to generate demand for 10 FTE jobs with annual earnings of approximately $0.8 million. Total annual economic output is estimated to increase by $1.7 million as a result of Facility operations and maintenance.

4. Land Lease Payments

Operation of the Facility will result in payment to local landowners in association with the lease agreements executed to host Facility components. These annual lease and easement payments will offer direct benefits to participating landowners, which will be in addition to any income generated from the surrounding land use (e.g., agricultural production). The Applicant estimates that these payments will total approximately <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>. These lease payments will have a positive impact on the region, to the extent that landowners will spend their revenue locally.

PART V: LOCAL TAX REVENUES

1. Legislative Context

Solar energy projects in the State of Ohio can be exempted from tangible personal property and real property tax payments if they meet certain conditions. These conditions are enumerated in Section 5727.75 of the Ohio Revised Code (ORC). Operators of these exempted projects, known as qualified energy projects (QEP), are instead required to make annual payments in lieu of taxes (PILOT). To be certified as a QEP by the State, a project must meet all of the following criteria:

- an application for certification of the energy project as a QEP that complies with the requirements under Section 5727.75 of the ORC and Chapter 122:23-1 of the Ohio Administrative Code (OAC) must be submitted to the director of the Ohio Development Services Agency (ODSA) on or before December 31, 2022;
- an application under Section 4906.20 of the ORC must be submitted to the Ohio Power Siting Board (OPSB) on or before December 31, 2022;
- the county commissioners of the county in which property of the project is located must have adopted a resolution approving the application submitted to ODSA or the county commissioners must pass a resolution declaring the county an alternative energy zone (AEZ);
- construction (defined as either the date the application for a certificate is filed with OPSB or the date the contract for construction or installation is entered, whichever is earlier) must begin by December 31, 2022.

If an applicant is granted exemption from taxation for any of the tax years 2011 through 2023, the QEP will be exempt from taxation for tax year 2024 and all ensuing years, as long as the property is placed into service before January 1, 2024. The amount of PILOT to be paid annually to the county treasurer is assessed per megawatt (MW) of nameplate capacity, with a suggested rate of $7,000/MW. County commissioners may require an additional service payment, if the total of the additional payment and the PILOT do not exceed $9,000/MW.

2. Estimated Payments In Lieu Of Taxes

For the purpose of modeling revenue to taxing districts, it was assumed that the Applicant would execute a PILOT agreement, which would require annual PILOT payments to Licking County. These funds would then be apportioned to the Southwest Licking Local School District, Harrison Township, and other jurisdictions in Licking County. The minimum payment of $7,000/MW was assumed. Based on the maximum Facility capacity of 107.7 MW_{AC}, the PILOT amount will total approximately $753,900 annually for the lifespan of the Facility. The Facility is expected to achieve commercial operations as early as 2022 and have a lifespan of approximately 35 years.

CONCLUSION

The socioeconomic effects of the Facility, when assessed considering state economic trends, will have a positive impact on the communities within the Study Area. Lease payments, short- and long-term job creation, and PILOT revenues will benefit private landowners, businesses, and taxing jurisdictions. The Facility is not expected to generate significant expenditures on behalf of these beneficiaries; therefore, it will have a positive impact on the social and economic conditions of these communities, as summarized below.

1. Total Local Economic Benefit: The construction of the Facility is expected to produce an estimated $33.6 million in employment earnings and $65 million in total economic output. Subsequently, each year the Facility is operational it is expected to generate approximately $0.8 million in earnings and $1.7 million in total economic output.
2. Local Employment Benefits: During the construction period, the Facility is expected to support demand for a total estimate of 513 on-site, supply chain, and induced employment positions. It is expected to support an estimated total of 10 positions during each year of its operation.
3. Land Lease Revenues: The development of the Facility will result in approximately <BEGIN CONFIDENTIAL INFORMATION> [redacted] <END CONFIDENTIAL INFORMATION>.
4. Property Tax Revenues: Construction of the proposed Facility will increase local government revenues. PILOT revenues could amount to approximately $753,900 per year to be distributed to local taxing jurisdictions.

REFERENCES

Bolinger, M., Seel, J., & Robson, D. (2019, December). Utility Scale Solar: Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States - 2019 Edition. Retrieved June 2020, from Berkeley Lab: https://eta-publications.lbl.gov/sites/default/files/lbnl_utility_scale_solar_2019_edition_final.pdf

City of Pataskala. 2019. Comprehensive Plan (Draft). Available at: http://www.cityofpataskalaohio.gov/city-departments/planning-zoning/comprehensive-plan/ (Accessed October 2020).

City of Reynoldsburg. 2018. Reynoldsburg Comprehensive Plan. Available at: https://ci.reynoldsburg.oh.us/departments/development/comp-plan.aspx (Accessed October 2020).

Environmental Law & Policy Center (ELPC). 2016. Ohio Solar and Wind Power Supply Chain Businesses. Available at: http://elpc.org/newsroom/publications/ (Accessed May, 2020).

Environment Ohio Research & Policy Center (Environment Ohio). 2014. Star Power: The Growing Role of Solar Energy in Ohio. Available at http://www.environmentohio.org/sites/environment/files/reports/OH_Star_Power_v5_screen.pdf (Accessed May 2020).

Etna Township. 2001. Etna Township-Planning For Our Future. Available at: http://www.etnatownship.com/zoning.php (Accessed October 2020).

Fairfield County. 2017. Fairfield County Comprehensive Land Use Plan. Available at https://www.co.fairfield.oh.us/rpc/pdf/Fairfield-County-Land-Use-Plan-2018.pdf (Accessed October 2020).

Granville Township and the Village of Granville. 2012. Comprehensive Plan Update. Available at: https://lickingcounty.gov/civicax/filebank/blobdload.aspx?BlobID=49344 (Accessed October 2020).

Harrison Township. 1993. Land Use Study and Future Development Use Map, Comprehensive Plan. Available at: https://lickingcounty.gov/civicax/filebank/blobdload.aspx?BlobID=49347 (Accessed October 2020).

Jersey Township. 2010. Jersey Township Comprehensive Plan 2030. Available at: https://lickingcounty.gov/depts/planning/zoninginfo/stalbans.htm (Accessed October 2020).

IMPLAN Group. 2019. Understanding Multipliers. Available at https://implanhelp.zendesk.com/hc/en-us/articles/115009505707-Understanding-Multipliers (Accessed January 2020).

St. Albans Township. 1995. Comprehensive Plan Looking Ahead to 2015. Available at: https://lickingcounty.gov/depts/planning/zoninginfo/stalbans.htm (Accessed October 2020).

Solar Energy Industries Association. 2020. State Solar Spotlight Ohio. Available at https://www.seia.org/state-solar-policy/ohio-solar (Accessed January 5, 2021)

The Solar Foundation. 2019. Ohio Solar Jobs Census 2019. Available https://www.solarstates.org/#state/ohio/counties/solar-jobs/2019 (Accessed May 2020)

Union Township. 1998. Union Township Comprehensive Plan. Available at: https://lickingcounty.gov/civicax/filebank/blobdload.aspx?BlobID=49381 (Accessed October 2020).

U.S. Bureau of Labor Statistics. 2018. Quarterly Census of Employment and Wages. Available at: https://www.bls.gov/cew/downloadable-data-files.htm. (Accessed November 2020).

U.S Bureau of Labor Statistics. 2019. May 2019 State Occupational Employment and Wage Estimates

Ohio. Available at: https://www.bls.gov/oes/current/oes_oh.htm (Accessed January 2021)

U.S. Census Bureau. 2014-2018. American Community Survey County – Household & Population (web database portal). Available at: https://data.census.gov/cedsci/table?q=DP03&g=0400000US39&tid=ACSDP5Y2018.DP03&hidePreview=false (Accessed August 2020).

U.S. Census Bureau. 2016-2018. American Community Survey 5-year Estimates Selected Economic Characteristics (web database portal). Available at: https://data.census.gov/cedsci/table?q=DP03&g=0400000US39_0500000US39047,39071,39141&tid=ACSDP5Y2018.DP03&hidePreview=true (Accessed August 2020).

U.S. Census Bureau, 2000. Decennial Census, General Population Data. Available at: https://data.census.gov/cedsci/table?t=Populations%20and%20People&g=0400000US39&y=2000&tid=DECENNIALSF12000.P001&hidePreview=false (Accessed August 2020).

U.S. Department of Energy (USDOE) National Renewable Energy Laboratory (NREL). 2016. Jobs and Economic Development Impact (JEDI) model release PV12.23.16. (Accessed from NREL in November 2017).

U.S. Department of Energy (USDOE) National Renewable Energy Laboratory (NREL). 2020. About JEDI. Available at: https://www.nrel.gov/analysis/jedi/about.html (Accessed September 2020).

U.S. Department of Labor (USDOL) Bureau of Labor Statistics. 2016, 2017, and 2018. Local Area Unemployment Statistics. Available at: http://www.bls.gov/lau/data.html (Accessed August 2020).

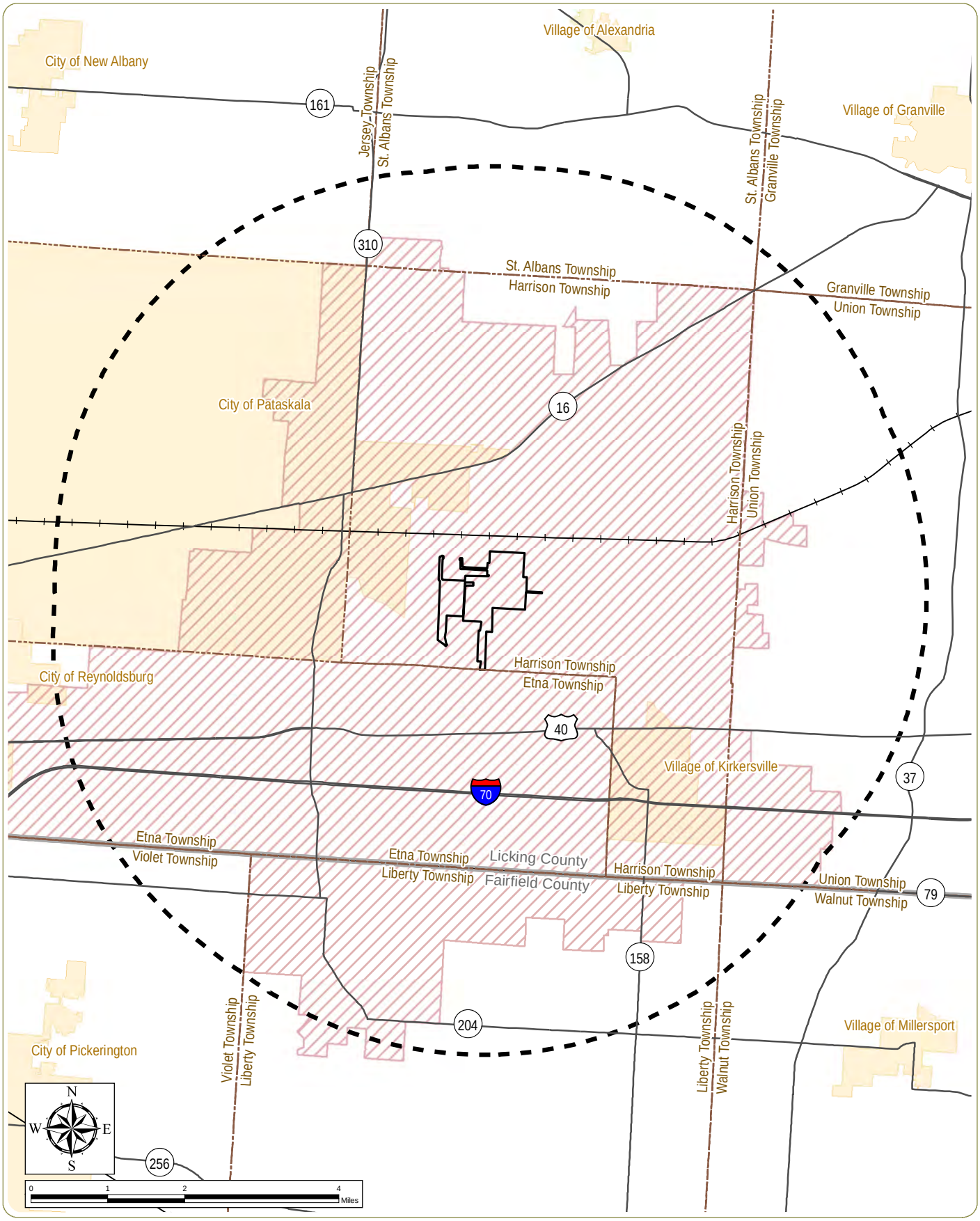
U.S. Department of Labor (USDOL) Bureau of Labor Statistics. 2019. May 2019 State Occupational Employment and Wage Estimates Ohio. Available at https://www.bls.gov/oes/current/oes_oh.htm#47-0000 (Accessed May, 2020).

U.S. Energy Information Administration (EIA). 2021. Ohio Renewables Data. Available at https://www.eia.gov/beta/states/states/oh/overview (Accessed January 2021)

Violet Township. 2005. Violet Township Land Use and Transportation Plan. Available at: https://www.violet.oh.us/Documents/Departments/Zoning%20Forms%20And%20Permits/Violet%20Land%20Use%20Plan.pdf (Accessed November 2020).

Violet Township. 2008. Violet Township Thoroughfare Plan. Available at: https://www.violet.oh.us/departments/engineer_and_roads/road___engineering_documents.php (Accessed October 2020).

FIGURES



Union Ridge Solar

Harrison Township, Licking County, Ohio

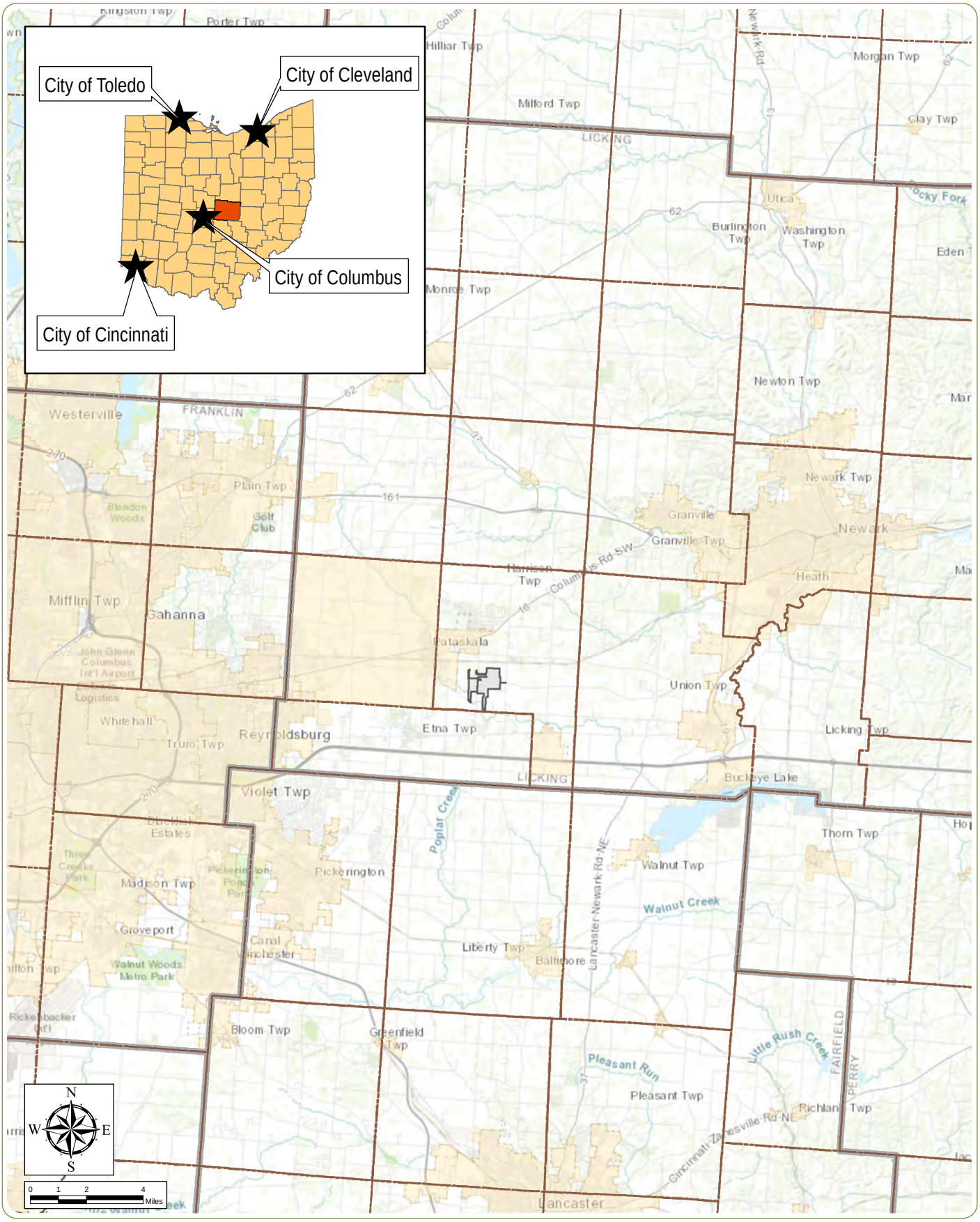
Figure 1: 5-Mile Study Area

Notes: 1. Basemap: Esri StreetMap North America, 2008. 2. This map was generated in ArcMap on January 12, 2021. 3. Project area provided by Leeward Renewable Energy, LLC. 4. Map created by Environmental Design and Research on behalf of Leeward Renewable Energy, LLC. 5. This is a color graphic. Reproduction in grayscale may misrepresent the data. 6. Map Scale: 1:110,000.

- Railroad
- Major Roads
- Project Area
- 5-Mile Study Area
- City/Village Boundary
- Township Boundary
- County Boundary
- Southwest Licking Local School District

edr

www.edrdpc.com



Union Ridge Solar

Harrison Township, Licking County, Ohio

Figure 2: Regional Facility Location

Notes: 1. Basemap: Esri StreetMap North America, 2008. 2. This map was generated in ArcMap on January 8, 2021. 3. Project area provided by Leeward Renewable Energy, LLC. 4. Map created by Environmental Design and Research on behalf of Leeward Renewable Energy, LLC. 5. This is a color graphic. Reproduction in grayscale may misrepresent the data. 6. Map Scale: 1:300,000.

- Project Area
- City/Village Boundary
- Township Boundary
- County Boundary

edr

www.edrdpc.com

APPENDIX A: COST CUSTOMIZATION LOG – JEDI MODEL INPUTS

<BEGIN CONFIDENTIAL INFORMATION>

<END CONFIDENTIAL INFORMATION>