

Harvey Solar I, LLC

Harvey Solar

Exhibit F

Socioeconomic Report

Case No. 21-0164-EL-BGN

The Economic Benefit of the Harvey Solar Project

in Hartford and Bennington Townships

Licking County, OH



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EXECUTIVE SUMMARY

The construction of the Harvey Solar Project in Hartford and Bennington Townships in Licking County, Ohio will provide jobs, earnings, and spending in the local and state economy. The total economic benefit includes the direct spending of the project as well as the multiplier effect as the economic activity spreads through the industry interconnections in the economy and from the additional household spending from income earned. Locally, Licking County will receive an estimated \$161 million in spending during the construction phase increasing local residents' income to by \$59 million and providing 1,092 full-time equivalent jobs from the direct, indirect, and induced economic effects. Although, the economic impact will be centered in Hartford and Bennington Townships in Licking County, its neighboring counties will also benefit economically from this project as the economic activity spreads. In total, construction of the Harvey Solar Project will provide between \$282 and \$615 million in increased economic activity within the state of Ohio. It will provide between 1,371 and 3,775 full-time equivalent jobs in the state while increasing Ohio residents' incomes by between \$91 and \$239 million.

Beyond the construction phase, operation of the Harvey Solar facility will provide economic benefits annually throughout its 40-year life. Economic spending will increase by \$3.7 in the local area and an estimated \$4.7 million in total for the state of Ohio. The project will provide 4 jobs in the local area and approximately 10 jobs in the state resulting in \$418,000 and \$880,000 in additional earnings yearly to the local area and the state of Ohio, respectively.

The Harvey Solar project will also have a substantive fiscal impact on state and local government revenues. The construction of the solar facility will increase tax revenue for Ohio by between \$8.1 and \$13.4 million while local municipalities and county tax revenue throughout the state will increase by a combined \$7.3 and \$11.1 million. Through Ohio's Payment in Lieu of Taxes (PILOT) program, Licking County will receive a fixed amount, \$7,000 per MW, or \$2,450,000 each year of operation that will go to the townships and other local taxing jurisdictions as well as \$2,000 per MW or \$700,000 each year of operation to go to the county's general fund. The operation of the solar facility will provide an additional \$3.38 million in tax revenue yearly across the State of Ohio while local tax revenue in local region and its local municipalities and will increase by \$3.3 million

“The Harvey Solar Project in Licking County, Ohio will provide jobs, earnings, and spending in the local and state economy.”

Table 1: The Local and State Economic Impact of the Harvey Solar Project

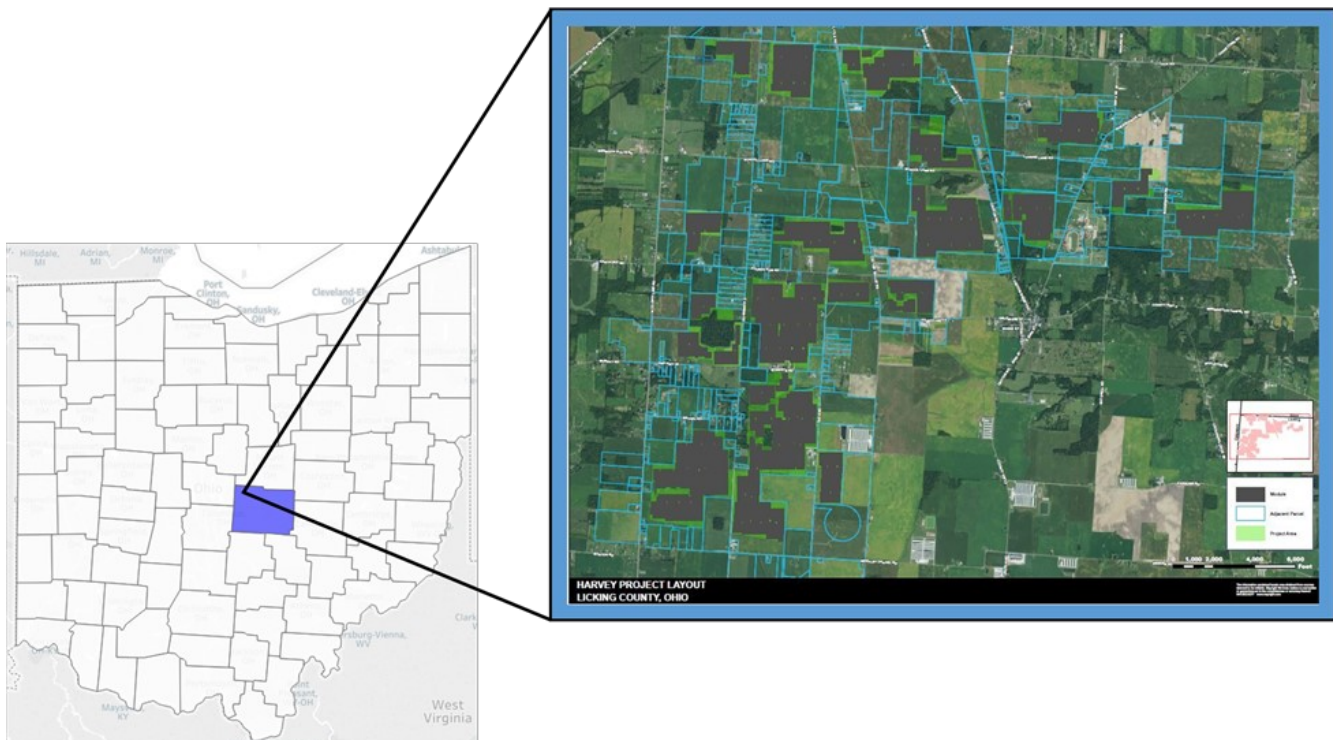
Local Area					Ohio			
Construction Impact	Jobs	Labor Income (millions)	Total Output (millions)	County Fiscal Impact	Jobs	Labor Income (millions)	Total Output (millions)	State Fiscal Impact (millions)
Direct	762	\$42.6	\$109.3	\$849,701	696 - 2,170	\$52 - \$150	\$152 - \$332	\$4 - \$4.5
Indirect	160	\$9.3	\$27.5	\$756,102	260 - 515	\$18 - \$35	\$65 - \$110	\$2.2 - \$3.7
Induced	169	\$7.0	\$24.6	\$694,467	415 - 1,091	\$21 - \$54	\$66 - \$173	\$2 - \$5.2
Total	1,091	\$58.9	\$161.4	\$2,300,271	1,371 - 3,775	\$91 - \$239	\$282 - \$615	\$8.1 - \$13
Operation Impact	Jobs	Labor Income	Total Output	County Fiscal Impact	Jobs	Labor Income	Total Output	State Fiscal Impact
Direct	2	\$260,306	\$2,686,334	\$104,639	2	\$386,222	\$2,686,334	\$163,046
Indirect	1	\$114,167	\$901,579	\$44,207	4	\$295,369	\$1,371,723	\$52,025
Induced	1	\$44,296	\$156,198	\$4,431	4	\$197,757	\$629,645	\$19,012
PILOT	-	-	-	\$3,150,000	-	-	-	\$3,150,000
Total	4	\$418,769	\$3,744,111	\$3,303,277	10	\$879,348	\$4,687,702	\$3,384,083

All dollar amounts are in 2021 dollars.

I. INTRODUCTION

Harvey Solar is a proposed solar generation facility in northwest Licking County, OH being developed by Open Road Renewables. Open Road is a renewable energy company focused on development of utility-scale clean energy projects in the United States. The Harvey Solar facility will have up to 350MW alternating current nameplate capacity from equipment located mostly in Hartford Township in Licking County (with a small portion in Bennington Township). Construction is expected to begin in 2023. The facility will have ground-mounted photovoltaic (PV) modules and supporting structures including a substation, inverters and access roads and will operate for 40 years.

Figure 1: The Harvey Solar Project layout in Licking County



The construction and operation of the Harvey Solar project will provide significant economic and fiscal benefits locally for the two townships and Licking County and its neighboring counties as well as for the state of Ohio. The total economic impact includes the direct impact of construction and operation as well as the multiplier effect as the economic activity spreads through the industry interconnections in the economy and from the additional household spending from income earned.

Throughout this report, produced jointly by University of Akron and Kent State University, we analyze the economic and fiscal benefits of the Harvey Solar generation facility separately for the local area centered on Licking County and the state of Ohio. A challenge to measuring economic and fiscal impacts of solar facilities is determining beforehand what percentage of the key components -- solar panels, PV modules, and racking -- will be sourced in the state of Ohio. Therefore, we present estimates of the impacts if the key equipment is sourced in Ohio (called High Ohio Sourcing Scenario) and not sourced in Ohio (called Base Case Ohio Sourcing).

“The economic activity spreads through the industry interconnections in the economy”

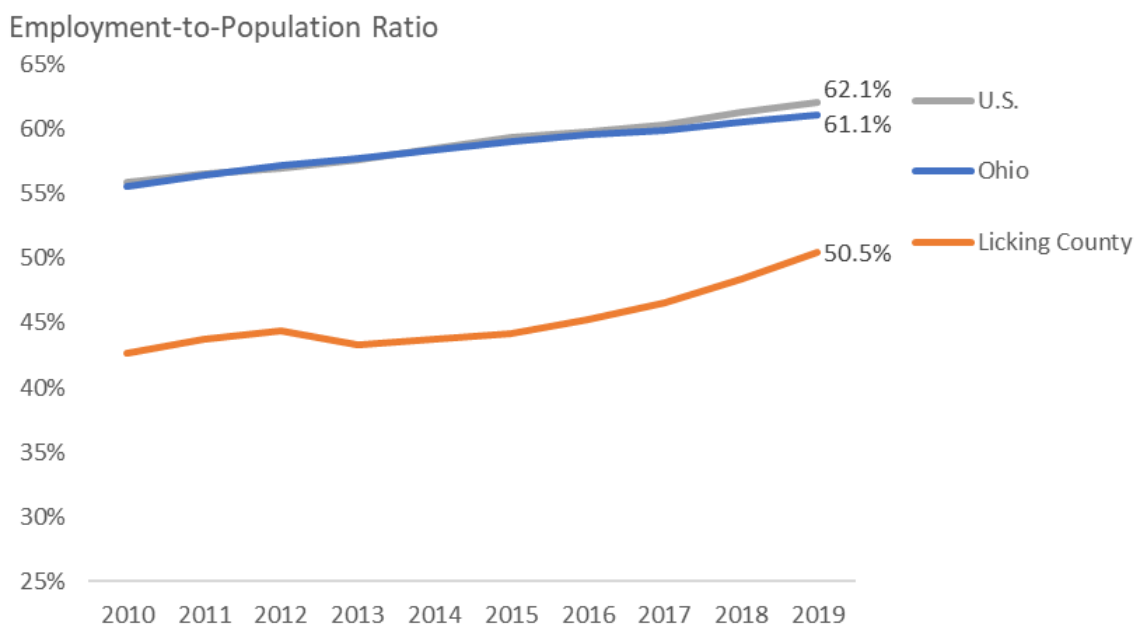
We use IMPLAN (Impact Analysis for Planning) to measure the direct economic impact as well as the indirect impact through higher demand for inputs, and the induced effects from higher demand for local goods and services from the associated increase in labor income resulting from both construction and the operation and maintenance of the solar facility. IMPLAN uses an input-output methodology to model the economic links between industry sectors of the local economy.¹ One limitation of this method is that it does not account for interactions that are external to the current market structure. For example, the economic benefits we find for the Harvey Solar project, though significant, are actually conservative because they do not capture the economic benefits associated with lower carbon emissions, better air quality, more competitive energy markets, energy independence, economic security, etc.



II. BACKGROUND

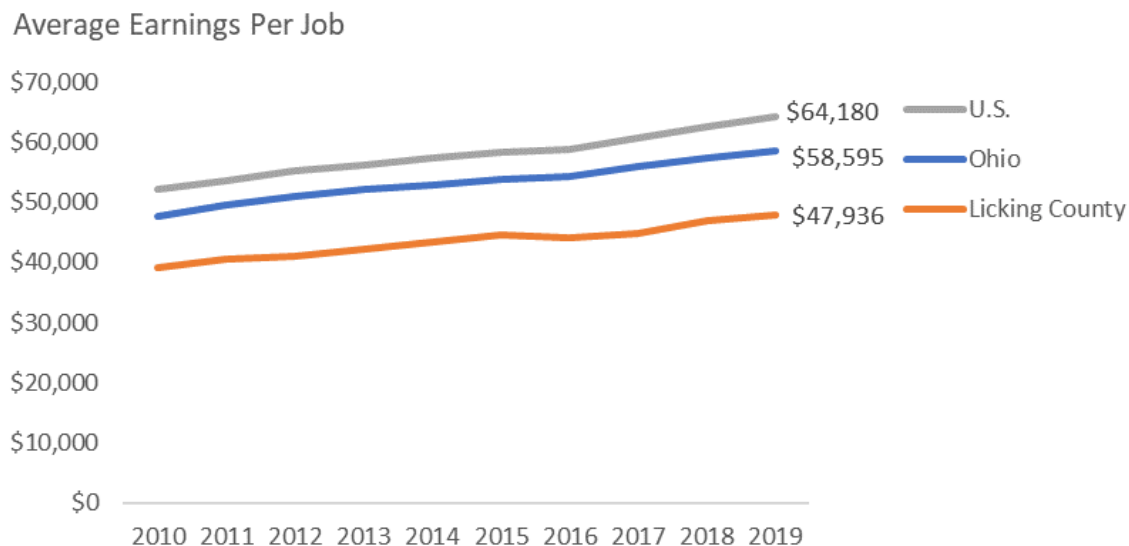
Since 2010, Licking County's population has grown to nearly 177,000 (in 2019). Within Licking County, Hartford Township and Bennington Township have populations of about 1,500 and 1,700, respectively. In 2019, the employment level in Licking County was just over 89,000 with an employment-to-population ratio of just over 50 percent in the county (compared with 61 percent in Ohio and 62 percent in the nation – see Figure 2). Despite recent growth in population and employment, Licking County lags Ohio (and the nation) in terms of both its employment-to-population ratio (a measure of the labor force and of unemployment) and average earnings per job (Figure 3).

Figure 2: The employment-to-population ratio in Ohio and Licking County lag the nation



Source: U.S. BEA

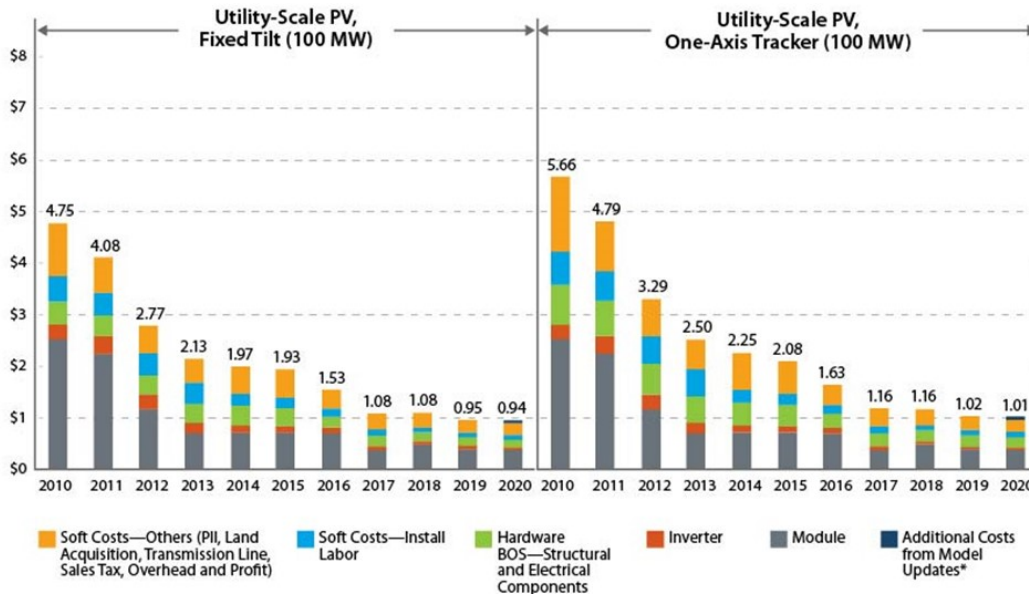
Figure 3: Despite growth, average earnings in Ohio and Licking County lag the nation



Source: U.S. BEA

The Harvey Solar project will increase employment and wages in the two townships, county, its neighboring counties, and state. Over the last decade, the cost of solar has been cut to about one-fifth of the cost in 2010 (Figure 4). The installed solar PV capacity in the U.S. in 2020 was more than 22 times greater than in 2010. In 2020, over 230,000 Americans worked in the solar industry, an increase of nearly 150%.² These solar jobs pay hourly wages about 28% above the median.³

Figure 4: Declining solar prices in the last decade



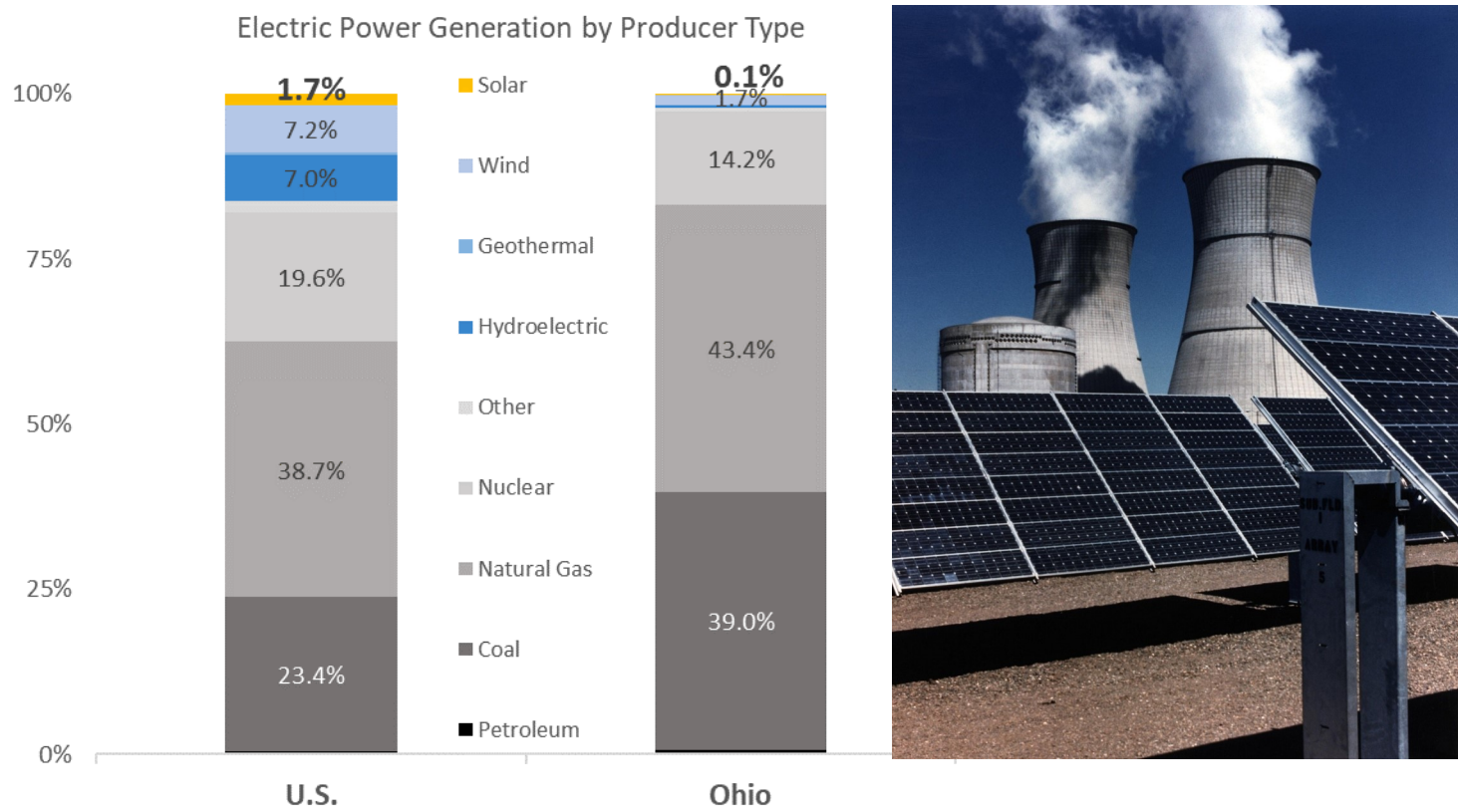
“As the price of solar has declined, new solar projects have been built and the solar capacity across the nation has grown adding well-paid solar jobs.”

Source: NREL, 2021

As the nation has increased its solar capacity utilizing its solar resources, it has diversified its energy portfolio and increased its energy independence. The share of electric power generated from solar in the U.S. (at 1.7 percent) is 17 times higher than Ohio (at 0.1 percent of electric power generation -Figure 5). The Harvey Solar project will increase Ohio’s installed solar capacity by 350MW or 66% moving Ohio closer to a more diverse energy portfolio while increasing employment and wages in the county and state. Additionally, landowner income from the solar farm may be significantly higher than agricultural rental income. Thus, both landowners and their communities benefit from utility-scale solar projects like the Harvey Solar project.

The increase in employment and wages will also increase the state and local tax revenue (as well as federal tax revenue). Additionally, through Ohio’s Payment in Lieu of Taxes (PILOT) program, Licking County will receive a fixed amount, \$7,000 per MW, or \$2,450,000 each year of operation that will go to two townships and other local taxing jurisdictions (for example, schools and emergency services) as well as \$2,000 per MW or \$700,000 each year of operation to go to the county’s general fund. This study focuses on estimating the direct, indirect, and induced economic effects (employment, wages, and fiscal impact) associated with the construction and operation of the Harvey Solar project.

Figure 5: Electric power generation energy portfolio for the U.S. and Ohio



Source: U.S. EIA, 2019



III. ECONOMIC IMPACT ANALYSIS

A. Methodology

This section describes in detail the methodology used to calculate the economic impact figures for the Harvey Solar Project. The full economic benefit of a project is not realized in the initial functions of that project. To truly measure the effects that may be incurred, all the interactions in an economy must be considered. For every dollar spent, an effect is created that allows for a portion of that dollar to reenter the economy. This effect is the multiplier effect created by some level of spending. By spending money to construct a local solar facility, a portion of that money will be given to a local worker in the form of wages who will in turn spend a portion of that money at a local business, for example, at local restaurants and grocery stores. Thus, the initial spending creates secondary and even tertiary spending in the local economy.

We use IMPLAN to measure the direct effect of the Harvey Solar project as well as the indirect effect (resulting from the increase in demand for required inputs) and induced effects (that stems from the increase in income resulting in an increase in demand for local goods and services) from both construction and the operation and maintenance of the solar facility. IMPLAN uses an input-output methodology to model the economic links between industry sectors of the local economy. With data provided by Open Road Renewables on the size of the planned solar project, we use IMPLAN to estimate the economic impacts throughout the economy of the state of Ohio and locally in the two townships, Licking County and its surrounding counties. The input-output method utilizes the linkages across industries to estimate the additional inputs required across industries in response to an increase in outputs in one industry (a solar facility, for example). Using IMPLAN allows us to capture localized effects at the county level as well as the statewide effects.



“The initial spending creates secondary and even tertiary spending in the local economy.”

B. IMPACT ON OHIO

We present estimates of the economic benefits if the key equipment (solar panels, PV modules, and racking, etc.) is sourced in Ohio (called High Ohio Sourcing Scenario) and not sourced in Ohio (called Base Case Ohio Sourcing).

High Ohio Sourcing Scenario – Construction Phase

The high Ohio sourcing scenario assumes that panels, PV modules, trackers and all of the financing costs are sourced from within Ohio. Table 2 shows the impacts on Ohio during the construction phase of the project using the above assumptions. Of the more than \$373 million in direct costs for this project, about \$332 million will take place in Ohio, adding almost \$207 million of value to the economy. The direct costs increase activity throughout the solar supply chain in Ohio for effects of \$110 million, adding \$58 million of value. These direct and indirect effects will lead to about \$173 million of induced spending, which will increase the added value to the economy by almost \$100 million. Total value added, additional Gross Domestic Product (GDP), to Ohio's economy is more than \$364 million.

More than 2,000 employment positions will be directly created or supported by the Harvey Solar project construction phase, with average annual earnings for those workers at \$69,057. Indirectly, the project will support about 515 jobs, for total labor income valued at about \$35 million annually for those workers. Of the 3,775 full and part-time positions supported by this project, about 1,091 are induced, with average annual earnings of \$49,780. Total income for all workers per year totals almost \$239 million.

“Under the high Ohio sourcing scenario, more than 2,000 employees will be directly created or supported by the Harvey Solar project construction phase, with average annual earnings for those workers of \$69,057.”

Table 2: Construction Impacts on Ohio: High Ohio Sourcing Scenario

Impact	Output	Value Added	Labor Income	Employment
Direct	\$331,912,726	\$206,661,355	\$149,865,383	2,170
Indirect	\$110,432,255	\$58,208,307	\$34,758,494	515
Induced	\$172,672,601	\$99,453,167	\$54,290,021	1,090
Total	\$615,017,582	\$364,322,829	\$238,913,899	3,775

Base Case Ohio Sourcing Scenario – Construction Phase

In the base-case sourcing scenario, it is assumed that panels, PV modules, trackers and half of the financing costs are sourced from outside of Ohio. In this case, a little less than \$152 million will be directly spent in Ohio, adding \$88 million in value or GDP to the state's economy. This direct spending will cause almost \$65 million and \$66 million in indirect and induced spending, respectively. Indirectly, value added in the base-case scenario is more than \$33 million. The induced spending creates an almost additional \$38 million in GDP, for a total of \$159.6 million of value added to the state's economy.

A total of almost 1,371 jobs will be created from the Harvey Solar project in Ohio. Of those, 697 will be directly involved in the construction phase of the project, and 260 full and part-time jobs will be created due to supply chain effects. Those direct and indirect jobs will induce 415 new jobs in Ohio. Total earnings from the construction phase of this project are about \$91 million, with the average yearly wage for direct, indirect, and induced jobs being \$75,211, \$69,256, and \$49,782, in that order.

Table 3: Construction Impacts on Ohio: Base-Case Ohio Sourcing Scenario

Impact	Output	Value Added	Labor Income	Employment
Direct	\$151,698,420	\$88,327,889	\$52,386,863	697
Indirect	\$64,735,093	\$33,419,993	\$17,979,526	260
Induced	\$65,676,062	\$37,828,744	\$20,643,628	415
Total	\$282,109,575	\$159,576,626	\$91,010,017	1,372

Operations and Maintenance Phase

Only one scenario is produced for the operations phase of the project, which assumes that all maintenance work is sourced from within Ohio. Directly, almost \$2.7 million will be spent annually in Ohio, adding \$1.5 million to Ohio's GDP. The operations phase of this project will provide an annual total wage of \$166,475 on average for those 2 employees who will be directly maintaining the solar plant. Indirect annual spending from this project will total almost \$1.4 million, adding almost \$700,000 of value to the state's economy. Around 4 new jobs will be indirectly created from this project, with total yearly wages equaling \$295,369. Of the \$4.7 million in spending from this project, \$629,645 is induced, creating a value of \$362,717 for the economy. Induced employment will result in approximately 4 additional workers, and an additional total annual wage of \$197,757. Total yearly income sums to \$879,348 for 10 workers.

Table 4: Operation and Maintenance Impacts on Ohio

Impact	Output	Value Added	Labor Income	Employment
Direct	\$2,686,334	\$1,534,564	\$386,222	2
Indirect	\$1,371,723	\$693,448	\$295,369	4
Induced	\$629,645	\$362,717	\$197,757	4
Total	\$4,687,702	\$2,590,729	\$879,348	10



C. IMPACT ON THE LOCAL AREA

Construction Phase

Unlike for the state impact, we can estimate the local impact more precisely making it unnecessary to distinguish between a high and base scenario. A total of almost \$162 million will be spent in the local area during the construction phase of project, as shown in Table 5. Of the \$162 million, \$109 million will be spent directly on the construction of the solar project (including, for example, \$42 million in labor). Nearly \$28 million will be spent within the supply chain from construction costs in the local area, increasing the county's GDP by \$14.7 million. That \$136.8 million in direct and indirect output expenditures will induce almost \$25 million in spending (on restaurants, groceries, etc.) during the construction phase of this project in the local area. Total value added in GDP from the direct, indirect, and induced spending sums to over \$86 million.

Nearly 1,100 full and part-time positions will be created during the construction phase of this project in the local area, supplying these workers with wages of almost \$59 million. There will be 762 direct hires from the local region during this phase, with an average annual wage of \$55,955. About 160 indirect jobs will be added in the local area as a result of the solar project, giving an average annual wage of \$57,924. During the construction phase, wages totaling almost \$7 million will be distributed to create or support 169 workers (the induced effect).

“Nearly 1,100 full and part-time positions will be created or supported during the construction phase of the Harvey Solar project in Licking County, supplying these workers with wages of almost \$59 million.”

Table 5: Construction Impacts on the Local Area

Impact	Output	Value Added	Labor Income	Employment
Direct	\$109,263,157	\$57,498,933	\$42,639,365	762
Indirect	\$27,513,939	\$14,689,294	\$9,295,698	160
Induced	\$24,599,622	\$13,994,317	\$6,980,408	169
Total	\$161,376,718	\$86,182,544	\$58,915,471	1,091

Operations Phase

During the operations phase of the Harvey Solar project, expenditures will equate to just over \$3.7 million, summing to over \$1.6 million in added value to the local area. Table 6 breaks those values down into direct, indirect, and induced economic impacts to the local region. Directly, spending will be about \$2.7 million, creating \$1.1 million in additional GDP for the local economy. Of the total expenditures, \$901,579 will be indirect and \$156,198 will be induced, creating additional value of \$422,967 and \$88,890 to the local area, respectively.

For the operation and maintenance phase, a total of 4 jobs will be sourced through the local area, for wages totaling \$418,769. Two of those jobs will be directly working on the upkeep of the solar plant, with average wages equaling \$130,807 for those 2 workers. A job will be created by both indirect means and by induced means locally, with an average salary of \$144,167 and \$44,296, respectively. Given that the facility will be located in the NW corner of Licking County, it is possible for the workers who are employed in Licking County to reside elsewhere.

Table 6: Operation and Maintenance Impacts on the Local Area

Impact	Output	Value Added	Labor Income	Employment
Direct	\$2,686,334	\$1,136,643	\$260,306	2
Indirect	\$901,579	\$422,967	\$114,167	1
Induced	\$156,198	\$88,890	\$44,296	1
Total	\$3,744,111	\$1,648,499	\$418,769	4

D. FISCAL IMPACTS

Not only will Harvey Solar provide economic benefits but it will provide fiscal benefits to the state of Ohio, Licking County, particularly Hartford and Bennington Townships, and its neighboring counties. These fiscal impacts will increase tax revenue at all levels of government: federal, state, county and sub-county governments such as municipalities and townships. These fiscal effects will come from increases in property tax revenue, income taxes, sales taxes as well as revenue from fees. We provide a breakdown of the fiscal benefits by different levels of government both for the construction of Harvey Solar I as well as its yearly impact from operating and maintaining the facility.

Fiscal Impacts across the State of Ohio: High Ohio Sourcing Scenario

Table 7 displays the fiscal impacts from the construction phase of the solar project under the high Ohio sourcing scenario, defined by the following being completely sourced from within the state: panels, PV modules, trackers and financing costs. This table, as all tables in this section, distributes taxes into 5 levels: federal, state, county, sub county general and sub county special districts. Cities and townships compose sub county general areas and public schools districts compose sub county special areas. Taxes are further divided by the type of effect: direct, indirect or induced.

In this high Ohio sourcing case, taxes from the project total \$70,390,026 for the construction of the project. The federal government will collect over \$45 million from the project, with the majority being a result directly from the construction phase. Ohio will receive a total of \$13.4 million in taxes, of which \$4.5 million are direct, \$3.7 million are indirect and \$5.2 million are induced. The local area will gather \$391,390 directly from purchases of the construction phase, \$750,264 from supply chain effects, and about \$1 million from induced effects. Sub county general jurisdictions, which include cities and townships in Ohio will see increased revenues from taxes during the construction phase of the solar project totaling \$3.6 million, with the highest amount of taxes being collected directly, and the lowest amount of taxes being collected by induced means. Sub county special districts, which includes fire and public-school districts, will receive \$5.4 million in increased tax revenue from the project, with the largest impact coming from the induced effects. Almost \$35 million in revenues will be created directly from the project.

“In the high Ohio sourcing case, Ohio will receive a total of \$13.4 million in taxes”

Table 7: Fiscal Impacts on Ohio from Construction: High Ohio Sourcing Scenario

Impact	Federal	State	County	Sub County	Sub County	Total
Direct	\$27,016,052	\$4,471,331	\$391,390	\$1,685,878	\$1,054,217	\$34,618,868
Indirect	\$7,209,081	\$3,717,304	\$750,264	\$765,081	\$1,839,905	\$14,281,635
Induced	\$11,637,673	\$5,205,579	\$1,021,856	\$1,113,877	\$2,510,538	\$21,489,523
Total	\$45,862,806	\$13,394,214	\$2,163,510	\$3,564,836	\$5,404,660	\$70,390,026

Fiscal Impacts across the State of Ohio: Base-Case Ohio Sourcing Scenario

The base case scenario assumes that no panels, PV modules nor trackers, and only 50% of financing costs are sourced from within Ohio. Table 8 shows this scenario for the construction phase of the solar project. As compared to the high Ohio sourcing scenario, the base case sourcing scenario supplies the economy with only half the amount of taxes. Each region sees a decline in fiscal impacts, as goods are sourced from outside the

region. Ohio receives almost \$4 million directly in taxes, \$2.2 million indirectly, and almost \$2 million by induced means, totaling \$8.2 million. The local area collects \$1.6 million in revenues, with the largest portion coming directly from construction of the solar plant. Cities and townships in the area will see an additional \$1.8 million in taxes, with just over half of this amount coming directly from construction. Sub-county special districts (public schools and fire) will gain \$3.9 million in taxes, with direct, indirect, and induced impacts equating to \$1.8, \$1.1 and \$1.0 million. Of the \$61 million in revenue to governments, the solar project directly provides \$34 million in the construction phase. Supply chain taxes will total \$11.5 million. Taxes from workers spending money in the economy will equal about \$15 million.

Table 8: Fiscal Impacts on Ohio from Construction: Base-Case Ohio Sourcing Scenario

Impact	Federal	State	County	Sub County	Sub County	Total
Direct	\$27,016,052	\$3,998,220	\$737,938	\$939,760	\$1,822,881	\$34,514,851
Indirect	\$7,209,081	\$2,214,520	\$460,337	\$439,718	\$1,126,555	\$11,450,210
Induced	\$11,637,673	\$1,980,735	\$388,886	\$423,747	\$955,420	\$15,386,462
Total	\$45,862,806	\$8,193,476	\$1,587,161	\$1,803,226	\$3,904,856	\$61,351,524

The operations and maintenance phase is the same for both the high Ohio sourcing scenario and the base-case Ohio sourcing scenario. This phase of the lifespan of the project will produce significantly less revenues than the construction phase, totaling to \$689,465. Of that amount, \$441,487 is collected directly from maintenance of the solar facility, \$169,582 is collected indirectly through the supply chain, and \$78,395 is collected from companies that exist due to the solar plant. The federal government collects about \$232,000 in taxes, with the majority coming from the maintenance of the plant. Ohio receives almost the same as the federal government, \$234,083, and collects more directly. A total of \$53,616 will be gathered by the local area, with \$38,444, \$11,437 and \$3,735 coming from direct, indirect and induced routes during the operation phase of the solar project. Sub county general districts will gain almost \$40,000 in taxes and sub county special districts will gain over \$130,000 in benefits during the operation phase. Importantly, Ohio's Payment in Lieu of Taxes (PILOT) program will provide the county with \$700,000 in revenue for their general fund while sub-county jurisdictions will receive \$2.45 million yearly for a total of \$3.15 million. Overall, county and sub-county jurisdictions across the state of Ohio will receive \$3.38 million in additional tax revenue.

Table 9: Fiscal Impacts on Ohio from Operations and Maintenance

Impact	Federal	State	County	Sub County General	Sub County Special	Total
Direct	\$120,408	\$163,046	\$38,444	\$26,298	\$93,297	\$441,487
Indirect	\$68,673	\$52,025	\$11,437	\$9,563	\$27,883	\$169,582
Induced	\$42,410	\$19,012	\$3,735	\$4,065	\$9,175	\$78,395
PILOT	-	-	\$700,000	\$2,450,000	-	3,150,000
Total	\$231,491	\$234,083	\$753,616	\$2,489,920	\$130,355	\$3,839,465

Fiscal Impacts on the Local Area

Table 10 shows the fiscal impacts to the local area centered in Licking County from the construction phase. A little over \$16 million will be collected in taxes across the federal, state, county, sub county general districts and sub county special districts governments from the money spent on construction in the local area. The largest portion of that \$16 million is collected by the federal government directly from parts for the solar

project. Ohio will receive just under \$3.3 million, which is seen as \$1.4 million directly, almost \$1 million indirectly, and nearly \$900,000 from induced businesses. The local area is estimated to benefit from \$427,307 in revenues, collecting the most from supply chain businesses. General areas in the county, such as cities and townships, will see a little more in revenue than the county, with more than half of their benefits coming directly from the solar construction. Almost equal parts from the 3 impacts will be received in taxes for sub county special districts, with their benefits totaling \$1.4 million. Summing the county and sub county total, Licking County will receive \$2.3 million in taxes from the construction of the Harvey Solar project.

Table 10: Fiscal Impacts on the Local Area from Construction

Impact	Federal	State	County	Sub County General	Sub County Special Dis-	Total
Direct	\$7,275,267	\$1,385,939	\$124,245	\$258,590	\$466,866	\$9,510,907
Indirect	\$1,785,999	\$989,662	\$157,047	\$115,243	\$483,812	\$3,531,764
Induced	\$1,450,065	\$892,587	\$146,015	\$102,239	\$446,213	\$3,037,119
Total	\$10,511,332	\$3,268,188	\$427,307	\$476,073	\$1,396,892	\$16,079,790

Fiscal impacts on the local area for the operations phase are shown in Table 11. \$460,296 in taxes are expected to be collected from money spent in the local area during the operations and maintenance phase, with \$311,084 of those coming directly from the solar plant. Federally, close to \$120,000 will be collected across the 3 types of impacts. Ohio will experience an increase of about \$187,000 in benefits, with direct effects totaling \$127,128. The local area is expected to gain \$23,128, \$9,769 and \$932 by direct, indirect and induced means, respectively. Cities and townships will gain close to \$19,000 during one year of the operation of the solar plant. Special districts within counties are estimated to benefit from over \$100,000 in total impacts during this phase. The PILOT project will bring \$700,000 to general county funds and \$2.45 million to sub-county jurisdictions for the local area. Overall, local jurisdictions in the area will receive \$3.3 million in additional revenue.

“Licking County will receive \$2.3 million in taxes from the construction of the Harvey Solar project.”

Table 11: Fiscal Impacts on the Local Area from Operations and Maintenance

Impact	Federal	State	County	Sub County General	Sub County Special Dis-	Total
Direct	\$79,096	\$127,350	\$23,128	\$12,616	\$68,894	\$311,084
Indirect	\$31,782	\$53,893	\$9,769	\$5,315	\$29,123	\$129,882
Induced	\$9,206	\$5,693	\$932	\$651	\$2,848	\$19,330
PILOT	-	-	\$700,000	\$2,450,000	-	\$3,150,000
Total	\$120,083	\$186,936	\$733,829	\$2468,583	\$100,865	\$3,610,296

Supply Chain Analysis

While nearly all industries will be impacted by the circulation of money from the solar project, Table 12 highlights the top 30 industries most affected by its construction, using the assumptions from the base-case scenario. Unsurprisingly, solar power generation sees the highest percentage growth in Ohio at 48.92%. This is a potential increase in output from \$86.9 million to over \$129 million. New power and communication structures will need to be constructed from the new solar facility, which will increase the output of

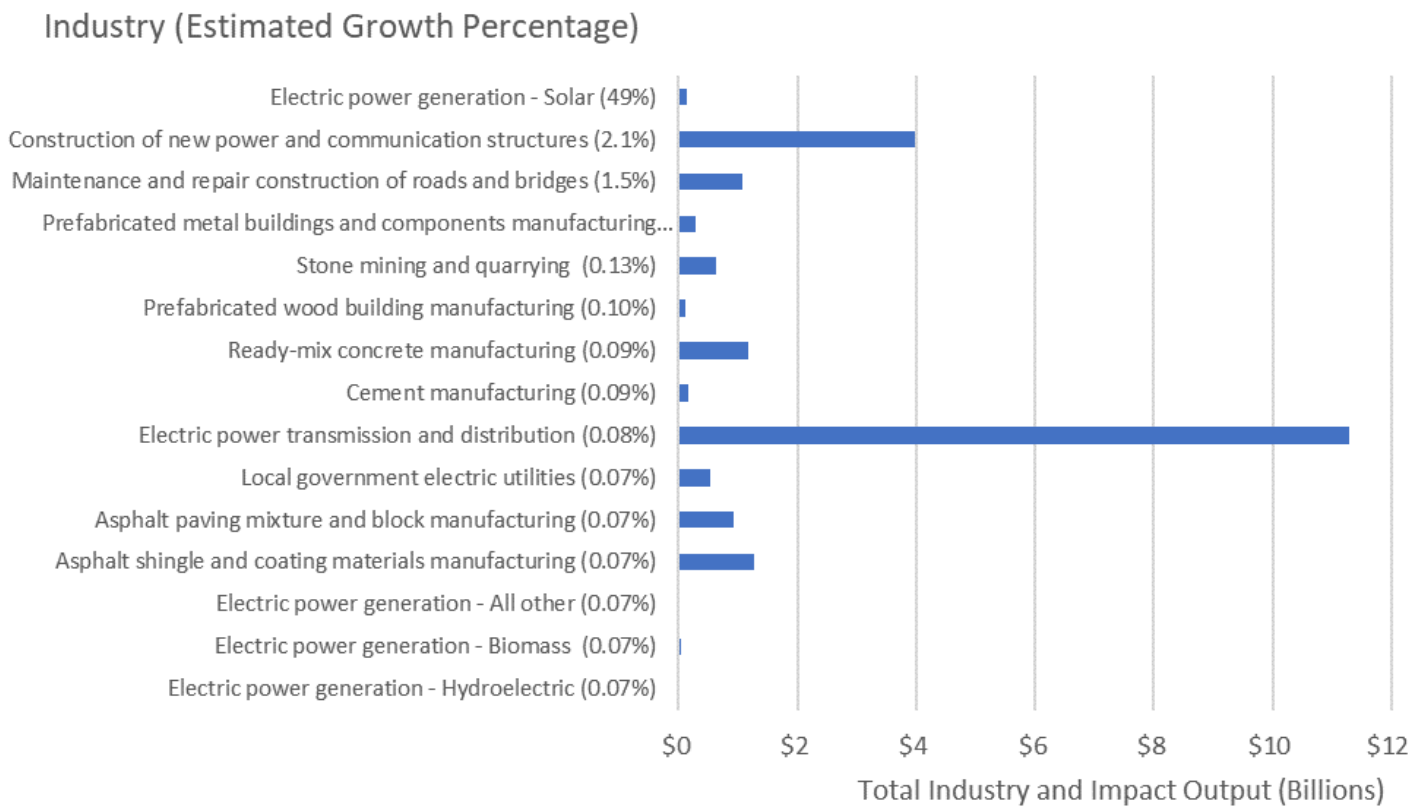
that industry by over \$83 million. Although experiencing only a 0.05% growth, insurance agencies, brokerages, and related activities will be needed in Ohio to keep up with demands of regional workers.

Table 12: Supply Chain Analysis on Ohio from Construction: Base-Case Ohio Sourcing Scenario

Display	Industry Description	Industry Total	Impact Output	Estimated Growth
42	Electric power generation - Solar	\$86,862,802.33	\$42,491,940.82	48.92%
52	Construction of new power and communica-	\$3,897,629,155.96	\$83,161,862.48	2.13%
62	Maintenance and repair construction of high-	\$1,050,797,242.45	\$15,832,224.30	1.51%
235	Prefabricated metal buildings and compo-	\$275,025,723.59	\$434,139.41	0.16%
28	Stone mining and quarrying	\$639,859,015.62	\$809,325.08	0.13%
142	Prefabricated wood building manufacturing	\$115,370,682.21	\$114,172.04	0.10%
204	Ready-mix concrete manufacturing	\$1,166,034,390.89	\$1,064,003.66	0.09%
203	Cement manufacturing	\$163,063,994.65	\$142,617.12	0.09%
47	Electric power transmission and distribution	\$11,284,548,853.53	\$8,690,456.03	0.08%
533	Local government electric utilities	\$518,997,342.54	\$387,360.09	0.07%
155	Asphalt paving mixture and block manufactur-	\$926,123,891.14	\$675,473.31	0.07%
156	Asphalt shingle and coating materials manu-	\$1,269,275,635.81	\$846,894.09	0.07%
46	Electric power generation - All other	\$13,761,278.17	\$8,979.29	0.07%
45	Electric power generation - Biomass	\$27,611,367.16	\$18,016.53	0.07%
39	Electric power generation - Hydroelectric	\$22,346,597.99	\$14,581.25	0.07%
43	Electric power generation - Wind	\$88,133,135.46	\$57,507.24	0.07%
41	Electric power generation - Nuclear	\$1,500,586,196.57	\$979,138.82	0.07%
40	Electric power generation - Fossil fuel	\$4,453,929,201.55	\$2,906,207.58	0.07%
453	Commercial and industrial machinery and	\$3,008,292,998.82	\$1,958,851.11	0.07%
405	Retail - Building material and garden equip-	\$6,022,228,304.80	\$3,740,204.36	0.06%
457	Architectural, engineering, and related ser-	\$9,976,252,991.63	\$6,176,673.26	0.06%
29	Sand and gravel mining	\$397,131,489.09	\$243,710.93	0.06%
531	Other state government enterprises	\$151,840,160.87	\$83,928.43	0.06%
445	Insurance agencies, brokerages, and related	\$14,786,250,455.22	\$7,350,611.12	0.05%
206	Concrete pipe manufacturing	\$17,021,765.99	\$8,227.25	0.05%
49	Water, sewage and other systems	\$383,319,612.82	\$166,714.26	0.04%
207	Other concrete product manufacturing	\$388,905,714.03	\$157,713.55	0.04%
419	Pipeline transportation	\$1,992,412,161.36	\$779,760.20	0.04%
133	Wood preservation	\$109,723,184.92	\$38,138.26	0.03%
439	Nondepository credit intermediation and re- lated activities	\$8,847,878,988.81	\$2,671,402.78	0.03%

Figure 6 presents this analysis in graphical form, showing the top 15 industries that have the highest estimated growth due to the solar plant. The x-axis is the summation of the industry total output and the impact output.

Figure 6: Supply Chain Analysis on Ohio from Construction: Base-Case Ohio Sourcing Scenario



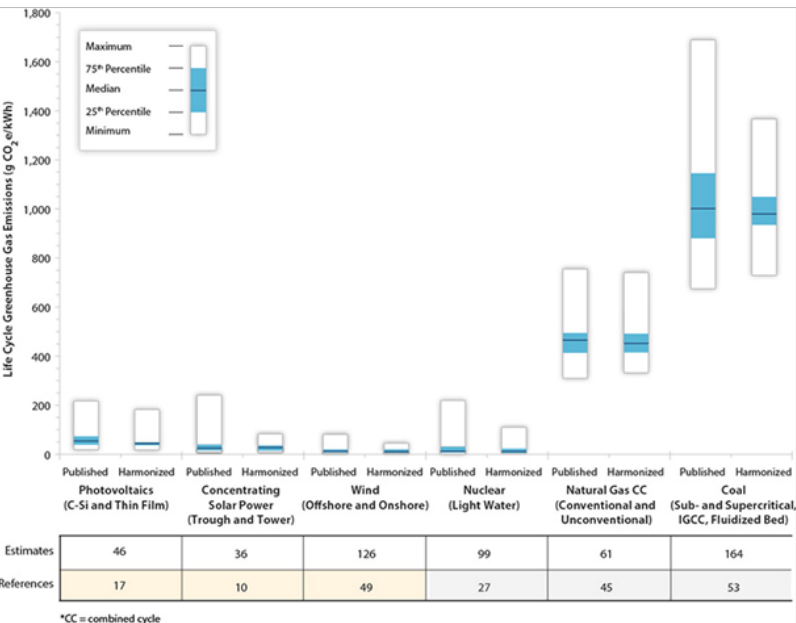
IV. CONCLUSION

The Harvey Solar project in Hartford and Bennington Townships in Licking County is an important step towards expanding Ohio’s renewable energy sector. Throughout *construction* the Harvey Solar project will create and support 1,092 jobs in the local area and between 1,371 and 3,775 jobs in the state of Ohio (depending on how much of the solar supply chain is sourced within the state). Total output will increase by approximately \$161 million in the local area and between \$282 and \$615 million in total output including the *direct, indirect, and induced* economic effects from the construction of the project. The fiscal impact of the construction will total \$2.3 million for the local area and between \$8.1 and \$13 million for the state of Ohio. The yearly operation of the facility will also provide \$3.3 million in revenue to county and sub-county jurisdictions in the area and \$3.38 million in revenue to county and sub-county jurisdictions across the state of Ohio. Much of the fiscal benefit is due to Ohio’s Payment in Lieu of Taxes (PILOT) program revenue which provides \$2,450,000 each year of operation that will go to local jurisdictions as well as \$2,000 per MW or \$700,000 each year of operation to go to the county’s general fund.

“The economic impact of the Harvey Solar project goes beyond our estimates.”

In addition to the economic stimulus that can be directly estimated using the IMPLAN methodology and data, the Harvey Solar project provides further economic benefits that are not captured by our estimates. For example, it does not capture the additional economic benefits that accrue from increased energy independence and a more diverse and competitive energy portfolio for the state of Ohio. Because the IMPLAN methodology estimated economic effects based on existing linkages in markets, our estimates are conservative because they do not capture economic benefits external to the market. For example, our analysis does not capture the economic benefit associated with the transition to a lower greenhouse gas emission energy source (Figure 7). Nobel prize winner of economics, William Nordhaus estimates the cost of each metric ton of carbon emissions (or the benefit of reducing carbon emissions) at about \$47 per metric ton and other models as high as \$84 , a reflection the economic costs of damages associated with higher carbon emissions.⁴ Thus, the economic impact of the Harvey solar project goes beyond our estimates here.

Figure 7: Lifecycle greenhouse gas emissions reduction from solar PV



V. Endnotes

1. IMPLAN Group, LLC. IMPLAN [April 2021 Year]. Huntersville, NC. IMPLAN.com.
2. Solar Energy Industries Association. "Solar Industry Research Data." <https://www.seia.org/solar-industry-research-data>
3. BW Research. (2020). "Clean Jobs, Better Jobs: An examination of clean energy job wages and benefits." <https://e2.org/wp-content/uploads/2020/10/Clean-Jobs-Better-Jobs.-October-2020.-E2-ACORE-CELI.pdf>
4. Metcalf, Gilbert E. (2020). "How to Set a Price on Carbon Pollution." *Scientific American*. <https://www.scientificamerican.com/article/how-to-set-a-price-on-carbon-pollution/>

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Summary: Application - 8 of 27 (Exhibit F - Socioeconomic Report) electronically filed by Christine M.T. Pirik on behalf of Harvey Solar I, LLC