STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION
AND
OFFICE OF ADMINISTRATIVE HEARINGS

In the Matter of the Application of Benton Solar, LLC for a Site Permit for the 100 MW Solar Energy Generating System, a Site Permit for the 100 MW Battery Energy Storage System, and a Route Permit for the Benton 115-kV Transmission Line for the Benton Solar Project in Benton County, Minnesota.	)))))))	MPUC Docket No. IP7115/GS-23-423; IP7115/ESS-24-283; IP7115/TL-23-425 OAH Docket No. 28-2500-40508

REBUTTAL TESTIMONY OF

Adam Gracia

On Behalf of

BENTON SOLAR, LLC

August 6, 2025

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Schedules

I. INTRODUCTION

Q. Please state your name and title.

A. My name is Adam Gracia. I am employed by NextEra Energy Resources, LLC ("NEER") as a project director, including directing project development for Benton Solar, LLC ("Benton Solar"), a wholly owned indirect subsidiary of NEER.

Q. Have you previously provided testimony in this proceeding?

A. Yes.

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my testimony is to provide responses to the direct testimony of Laborers' International Union of North America Minnesota and North Dakota ("LiUNA") witnesses, Lucas Franco and Steve Cortina. In particular, my rebuttal testimony responds to assertions and conclusions in Dr. Franco's and Mr. Cortina's testimony regarding the economic benefits to the local community associated with utilizing local workers, NEER's utilization of local labor in Minnesota and North Dakota, and the availability of local laborers for the construction of the Benton Solar project.

II. RESPONSE REGARDING THE ECONOMIC BENEFITS OF LOCAL LABOR

Q. LiUNA witnesses Dr. Lucas Franco and Mr. Steve Cortina generally assert that there are economic benefits to the local economy when renewable energy projects utilize "local" labor. (Franco Direct at 2-3 and App. A and Cortina Direct at 3-6). Do you agree with their conclusion?

A. Generally, I agree that there are benefits to the local economy when renewable energy projects are built by local workers, although as discussed in this testimony, the extent of positive impact depends on several variables, including the definition of "local."

Q. What is the basis for your conclusion that local labor could be beneficial to the local economy?

A. Benton Solar commissioned Dr. King Banaian, a professor of economics and director of the Center for Policy Research and Community Engagement at St. Cloud State University, to research the likely economic effects of Benton Solar's use of local labor. The results of that study informed my conclusion about the economic impacts of local labor and are attached as Schedule 1.

Q. What were the results of the study?

A. Generally, the study evaluated direct benefits from wages, as well as indirect or induced benefits, and concluded that the construction and operation of the Benton Solar project would have significant benefits for the local community. In particular, Dr. Banaian concluded that construction of the project would result in approximately $20 million in direct benefits from labor income and would contribute over $48 million to local gross domestic product ("GDP"). Dr. Banaian also found indirect and induced economic benefits of the project would include about $37 million in labor income and a $77 million contribution to GDP.

According to Dr. Banaian's study, once operational, Benton Solar annually would provide approximately $320,000 in labor wages, a $2.6 million contribution to GDP, and a significant amount of tax revenue for local governments. In particular, Dr. Banaian's report concludes that Benton Solar's operation would result in over $50,000 in tax revenue for Minden Township and over $200,000 in tax revenue for Benton County.

Q. Dr. Franco's direct testimony includes Appendix A, which contains a case study on the benefits of local construction hiring. (Franco Direct, App. A). What is your response to this study?

A. While Dr. Franco's study and conclusions are directionally consistent with Benton Solar's expectations based on the research conducted by Dr. Banaian, Dr. Franco's study does not accurately or fully capture the potential benefits from the Benton Solar project. First, the report utilizes a methodology for calculating the benefits of local workers that is not representative of Minnesota or the energy industry. Specifically, his methodology relies on 2006 data from construction projects in Florida but does not show how 20-year-old data from a different state can be equally applied here.

Second, because the Benton Solar project is a large investment delivering continued benefits throughout its operational life, Dr. Franco's analysis of the direct benefits of wages does not fully capture the larger universe of potential benefits from the Benton Solar project. As noted above, in addition to the direct benefits from wages during construction, there are also indirect and induced benefits associated with construction activities as well as tax revenue and economic benefits associated with the operation of the project.

Third, Dr. Franco's report does not define which workers or communities qualify as "local," although by implication it includes workers that "maintain a permanent residence within a daily commuting distance of the project" and the communities in which they live. Without a clear definition of "local," it is not productive to directly compare Dr. Franco's results with those from Dr. Banaian's study. Benton Solar is seeking clarity on

LiUNA's definition of "local" in order to facilitate a more accurate conversation about benefits of utilizing local labor.[1]

Finally, Dr. Franco's report consistently relies on wind projects and related studies as the bases for its assertions and conclusions without explaining whether and how those same projects and studies apply to the permitting and construction of a solar facility like Benton Solar. Although solar and wind projects share certain common elements, construction methods and workforces vary widely between them.

III. RESPONSE REGARDING THE USE AND AVAILABILITY OF LOCAL LABOR IN MINNESOTA

Q. Can you summarize LiUNA's testimony regarding the use and availability of local labor in Minnesota?

A. Yes. LiUNA presents a good news story on the historic use of local labor on Minnesota renewable projects. For instance, recent NEER wind projects have achieved upwards of 76% (Mower Wind) and 78% (Walleye Wind) local labor utilization. (Franco Direct, App. A at 9**)**. With respect to the availability of local labor for the Benton Solar project, Benton Solar is committed to undertaking commercially reasonable efforts to achieve utilization of 60% local workers in the construction of Benton Solar. As explained below, however, it is not possible to guarantee that such a percentage of local workers will be available at the time the workers are required, and LiUNA has presented no evidence or commitment

[1] As of the date of this testimony, Benton Solar is awaiting LiUNA's response to an information request seeking clarification of LiUNA's definition of "local." Dr. Banaian's study was limited to the St. Cloud, MN MSA region, which includes all of Benton and Stearns Counties. For purposes of this testimony, when not in reference to Dr. Banaian's report, Benton Solar defines "local" as workers that reside within Minnesota or within 150 miles of the project.

to allay these concerns. Benton Solar is currently awaiting responses to information requests regarding this issue.

Q. Mr. Franco testifies that he is "confident that Benton Solar can be built using local workers" with a "majority" or "60%" "local" "experienced construction workers in central Minnesota." (Franco Direct at 4). Do you agree with his conclusion that Benton Solar can be built with "majority" or "60%" "local" labor from "central Minnesota"?

A. While Benton Solar and NEER firmly believe in and support utilizing local labor, I cannot agree with Mr. Franco's "confid[ence]" in the specific percentage of local labor to be used for Benton Solar because of the complexities and uncertainties associated with hiring for any construction project.

For the Engineering, Procurement, and Construction ("EPC") contractors responsible for hiring, assessing residence and determining percentages of local workers is not a straightforward process. Setting aside the practical hurdles of tracking residences, EPCs also must address issues associated with filling specialized jobs and competing with other construction projects. For instance, some of the construction jobs for renewable energy projects require specialized skills that may not be present in the local labor market. The number of available local laborers may also fluctuate depending upon the number of other construction projects within the same region. If any other renewable energy or similar technical projects are being constructed during the same time frame, there may not be a large, local labor pool available from which to draw. Finally, projects that are constructed with union workers through a project labor agreement are dependent on the efforts and practices of local union halls. Taken together, there are several factors beyond Benton

Solar's control and a great deal of uncertainty about how many local workers can be hired for any given project.

Q. How should the Commission view NEER's past performance in Minnesota with respect to local hiring?

A. NEER's history in Minnesota—through its indirect, wholly owned subsidiary renewable projects—demonstrates NEER's continued and consistent efforts to hire local labor, as recognized by Mr. Cortina, but also the variability associated with staffing construction projects with local workers. (*See* Cortina Direct at 8). For example:

- Buffalo Ridge Wind, LLC (2023) – had a workforce that was between 31 and 50% workers who were Minnesota residents or who lived within 150 miles of the project site;
- Walleye Wind, LLC (2022) – had a workforce that was between 63 and 76% workers who were Minnesota residents or workers who lived within 150 miles of the project site;
- FPL Energy Mower County Wind, LLC (2020) – had a workforce that was between 65 and 88% workers who were Minnesota residents or who lived within 150 miles of the project site; and
- Lake Benton Power Partners II, LLC (2019) – had a workforce that was between 27 and 32% workers who were residents or workers who lived within 150 miles of the project site.

Although Benton Solar cannot accurately predict the percentage of local workers that will be employed to build the project, it has committed to hiring an EPC that will utilize union labor and will enter into a project labor agreement. (Gracia Direct at 8:21 – 9:9 &

Attachment 1). Benton Solar will then depend upon the EPC and the local union halls to staff the construction jobs. The EPC contractor's use of union labor and a project labor agreement will give the local union halls significant control over staffing for the construction of Benton Solar. Because the use of union labor often results in a large number of local laborers, it is very likely that Benton Solar will also have a large number of local laborers. (*See* Franco Direct, App. A at 9-10). However, Benton Solar cannot guarantee a certain percentage of local labor given the labor market factors beyond its control and the autonomy the unions will have in making staffing decisions.

IV. RESPONSE REGARDING THE USE OF LOCAL LABOR IN OTHER STATES

Q. Did LiUNA's testimony comment on the use of local labor in other states?

A. Yes, but with a nearly singular focus on North Dakota. In fact, most of LiUNA's testimony focused on claims regarding its experiences in North Dakota rather than in Minnesota.

Q. What is your overall response to LiUNA's testimony regarding North Dakota?

A. LiUNA's emphasis on North Dakota is misplaced given that the Benton Solar project will be sited in Minnesota and subject to a completely different legal framework. As explained above, NEER's successful utilization of union and local labor in Minnesota aligns with the state's and Commission's focus on these issues. Below I clarify that NEER's subsidiary in North Dakota has fulfilled its commitments there, and I strongly reject any claims of impropriety or a "bait-and-switch." LiUNA's attempts to view North Dakota through a Minnesota regulatory lens and impose requirements that do not exist are improper and should be rejected.

Q. Mr. Cortina's direct testimony includes a discussion of his conclusion about NEER subsidiary employment practices in North Dakota. (Cortina Direct at 6-8). Do you

agree with his conclusion that NEER companies have inadequately utilized local labor for the construction of its North Dakota renewable energy projects?

A. No. NEER subsidiaries have utilized appropriate employment practices and recruitment efforts in North Dakota. To the extent NEER's employment practices and recruitment efforts have yielded different results in North Dakota compared to Minnesota, the variance is due to differences between (1) the specific labor markets in those two states, including, as noted by Mr. Cortina, the significant mining and coal plant employment opportunities in North Dakota (*See* Cortina Direct at 6) and (2) the regulatory and statutory requirements in those two states. On the second point, the Commission historically has required reporting as to local employment numbers for permitted projects, and Minn. Stat. § 216I.05, subd. 12(d) requires payment of prevailing wage to workers, which often has the effect of bolstering local hiring. In contrast, North Dakota law does not require prevailing wages on wind projects.

Q. Mr. Cortina described NEER as making "zero efforts" and engaging in "zero publicity" about employment opportunities for the Oliver IV project in North Dakota. (Cortina Direct at 7). Do you agree with his characterization of Oliver IV's recruitment efforts in North Dakota?

A. No. EPC contractors for Oliver IV engaged in recruiting events in the region.[2] For instance, NEER's EPC contractor for the wind project, Blattner Energy Inc., generally attends local

[2] NEER does not collect or maintain information about recruitment because hiring and recruitment is the responsibility of the EPC contractor or contractors for the various portions of the construction activities. However, Benton Solar voluntarily and in good faith communicated with the relevant EPCs to obtain information about the recruitment efforts for Oliver IV and other North Dakota projects. My testimony summarizes responses that Benton Solar received from the EPCs, and I cannot ensure its accuracy.

job fairs (including at least one job fair in April 2024 in Bismarck), contacts unemployment offices, and advertises locally.

Brink Constructors, Inc., the EPC contractor for the substation and the transmission line, used a mix of social media advertising, online job postings, and recruitment events at local schools, including local technical colleges.

Q. Mr. Cortina and Dr. Franco characterize NEER as "reneg[ing]" or engaging in a "bait and switch" with regards to its commitments to use local labor for Oliver IV. (Cortina Direct at 8-10 & Franco Direct at 6-7). Do you agree with their characterization of conversations between NEER and LiUNA regarding Oliver IV?

A. No. While I was not present at the referenced meeting, my understanding from my colleagues is that Oliver IV representatives and LiUNA had general discussions about the potential for LiUNA members to participate in the Oliver IV project. Oliver IV representatives agreed to speak to Oliver IV's EPC contractors about potential opportunities, but there was no commitment to employ certain percentages of LiUNA members. Following the meeting, Oliver IV, as agreed, spoke with its EPC contractors, which in turn hired LiUNA members to construct the transmission line portion of Oliver IV.

Q. Does this conclude your rebuttal testimony?

A. Yes.

6-2025

The Economic Impact of Benton Solar

King Banaian

CENTER FOR
POLICY RESEARCH AND
COMMUNITY ENGAGEMENT
ST. CLOUD STATE UNIVERSITY

THE ECONOMIC IMPACT OF **BENTON SOLAR**

Finalized: June 26, 2025

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http://stcloudstate.edu/cprce

Background

The Center for Policy Research and Community Engagement at St. Cloud State University (hereinafter **CPRCE**) provides applied research addressing community issues of importance to the central Minnesota region. It employs students, staff, and faculty to do this work. One of the services it provides is economic impact studies that support economic development in the region.

After years of investigation, **NextEra Energy Resources LLC** has applied to build a 100-megawatt solar and a 100-megawatt battery energy storage facility in Minden Township, in Benton County, Minnesota. The **Benton Solar** project will be an investment of approximately $315 million for construction between April 2026 and November 2027. Benton Solar plans to hire three (3) workers after construction to operate the facility, maximizing its productive capacity to deliver clean energy that supports the State of Minnesota's clean energy goals.

CPRCE has engaged with Benton Solar to produce an economic impact study, using IMPLAN. IMPLAN is a state-of-the-art software platform for modeling input-output analyses. CPRCE queried Benton Solar for the inputs to the model, checked them against established patterns of construction and operation of solar energy facilities, and provided these results.

Errors in the use of IMPLAN are the responsibility of CPRCE; Benton Solar had no input into how the model is used. Neither CPRCE nor St. Cloud State makes any judgment regarding energy policy in offering this analysis.

Model Assumptions

This study used IMPLAN **2023** Data and the IMPLAN calculation process to estimate the economic impact of the construction and first year of operations of the proposed Benton Solar project on the **St. Cloud, MN MSA** region. The financial expenditures and assumptions used to generate the results included in this report were imputed and entered into IMPLAN by CPRCE. All results are reported in **2026** dollars to match the date that construction is expected to begin.

Result Highlights

The net impact from the construction of **Benton Solar** would support **406** jobs with an associated Labor Income of **$37.6 million**, a contribution to GDP of **$77.7 million**, output of **$156.3 million**, and taxes of **$15.9 million.** These amounts reflect the entirety of the construction period, estimated to be about 1.5 years.

In that first year and each year thereafter, for the life of the project, the operation of **Benton Solar** in the **St. Cloud, MN MSA** would support a total of **8.1** jobs across the **St. Cloud, MN MSA** region, along with **$718,627** in Labor Income, **$3.4 million** in contribution to GDP, and **$6.5 million** in output. Due to an incentive from the state to the county and township in the form of a solar production tax, revenues to federal, state, county, school district, and township entities amount to almost $900,000**.**

Economic Impact of Benton Solar

Assumptions

CPRCE provided Benton Solar with a request for data about the construction and operation of Benton Solar. These inputs are needed to tailor the input-output model in IMPLAN. The key assumptions on which the analysis relied.

Construction phase

Benton Solar estimates that **$315 million** will be spent to construct the solar and battery storage facility across **952 acres** in Minden Township.

Of the $315 million in costs, $116 million is for solar generating equipment and battery storage system material. The systems are produced out of state. Benton Solar estimates that 60% of the labor cost, equal to $119 million, will be hired locally. Wiring, switches, and inverters are also part of the cost; no reliable estimate was provided for how much of this would be sourced locally.

Benton Solar expects 300 workers on site during peak construction months. 70% of these workers would be skilled labor, including electricians and engineers. Construction is expected to be governed by a prevailing wage agreement, so labor figures were checked against a wage assumption of $37.66 for general labor and $41.00 for electricians (as a proxy for all skilled workers).

Construction is expected to begin in April 2026, pending approval from the Minnesota Public Utilities Commission. Construction would end in November 2027, and operations would begin on December 1, 2027.

Operations phase

Benton Solar indicates plans to hire three (3) workers to optimize energy production once Benton Solar is operational. The wage bill is expected to be $325,000. Total operating costs of $8.7 million are expected, of which $3.254 million is expected to be for maintenance and repairs. CPRCE assumes that will not result in expenditures within the St. Cloud, MN MSA. The remaining funds would cover taxes and lease payments.

The economic impact of construction and transition

The direct net impact of the construction of Benton Solar on the **St. Cloud, MN MSA** would be **180** jobs, **$20.5 million** in Labor Income, **$48.3 million** in contribution to GDP, and **$106.7 million** in output within the **2026** dollar year. These are driven from the assumptions given above. Through indirect and induced expenditures, the investment in the construction of Benton Solar results in a total net economic impact of **406** jobs earning **$37.6 million** in labor Income, **$77.7 million** in contribution to GDP, and **$156.3 million** in output to the region.

Net Economic Impact of Construction and Transition[1]

	Employment	Labor Income	Contribution to GDP	Output
Direct	180	$20,458,129	$48,317,048	$106,717,048
Indirect	117.00	$11,093,720	$18,025,794	$31,211,673
Induced	108.98	$6,059,484	$11,356,996	$18,342,756
Total	405.98	$37,611,334	$77,699,839	$156,271,477

The impact of **Benton Solar** on area industries during construction is estimated to be about **226 jobs**. The employment multiplier implied by this is 405.98/180 = 2.255, a plausible figure for a construction project of this type. 117 of these jobs would result from Benton Solar engaging with local businesses, such as merchant wholesalers, building material suppliers, and transportation authorities. Another 109 would come from demand for health services, restaurants, and other family services. The next table lists all 3-digit industry codes (NAICS) for which the combined indirect and induced impact is greater than 5 jobs.

[1] All dollar values are presented in 2026 USD. Numbers may not add up due to rounding.

Schedule 1 - Banaian Research Study

	Indirect employment	Induced Employment	Total employment
Wholesale – other durable goods merchant wholesalers	13.18	0.41	13.59
Retail – Building material and garden equipment retailers	11.87	0.73	12.60
Management of companies and enterprises	8.15	0.85	9.00
Hospitals	0.00	8.32	8.32
Other real estate	4.94	2.40	7.34
Couriers and messengers	5.67	1.35	7.02
Truck transportation	5.97	0.86	6.83
Monetary authorities and depository credit institutions	4.19	1.95	6.14
Limited-service restaurants	0.38	5.39	5.77
Full-service restaurants	0.96	4.69	5.65
Employment services	4.45	1.01	5.46
Individual and family services	0.00	5.14	5.14

Benton Solar will also have an economic impact on tax revenues. The total impact for township taxes (city/township) is estimated at **$593,405**. School district taxes are estimated at **$487,768**. County taxes are estimated at **$660,369**. State taxes are estimated to be **$5.2 million**. Federal taxes are estimated at **$8.9 million**. This totals **$15.9 million** in supported tax revenues.

Net Tax Impact of Construction and Transition[2]

	Township	School District	County	State	Federal	Total
Direct	$202,609	$169,879	$255,789	$2,452401	$5,140,519	$8,188,195
Indirect	$257,090	$211,099	$285,892	$1,790,969	$2,379,051	$4,924,101
Induced	$133,707	$109,790	$148,689	$974,995	$1,385,553	$2,752,734
Total	$593,405	$487,768	$660,369	$5,218,364	$8,905,124	$15,865,030

Gain from solar energy production (2028)

Once Benton Solar is online in late 2027, the economic impact on **St. Cloud, MN MSA** of gaining **$6,482,207** in output within the solar industry directly supports **3** jobs, **$320,011** in labor Income, **$2.6 million** in contribution to GDP, and **$4.7 million** in economic output within the **2026** dollar year. This results in a total economic impact of **8.1** jobs supported, earning **$718,627** in Labor Income, **$3.4 million** in contribution to GDP, and **$6.5 million** in Output to the region. We do not break down the indirect and induced employment by sector since the amounts are so small; the largest impact would be 0.6 FTE for electric power transmission and distribution.

Gain in Solar Industry Economic Impact[3]

	Employment	Labor Income	Contribution to GDP	Output
Direct	3	$320,011	$2,580,220	$4,775,541
Indirect	3.075	$286,825	$561,629	$1,368,189
Induced	2.009	$111,791	$209,589	$338,476
Total	8.084	$718,627	$3,351,439	$6,482,207

[2] All dollar values are presented in 2026 USD. Numbers may not add up due to rounding.

[3] All dollar values are presented in 2026 USD. Numbers may not add up due to rounding.

The employment multiplier is estimated as 8.084/3 = 2.694. This is somewhat high relative to investments in other plants. To place this estimate in context, Xcel Energy states that its 256 MW Sherco Solar project has 12 "ongoing operations and maintenance jobs."[4] The project is said to have "$350 million in local economic benefits to Sherburne County communities," which appears to be a figure for the 35-year lifetime of the plant.

The State of Minnesota has created incentives for renewable energy production as part of its clean energy goals. One important provision is the personal property tax treatment of solar generating systems. Instead of the personal property tax, the State created a solar production tax as a replacement, equal to $1.20 per megawatt-hour produced, with the revenue divided 80% to the county and 20% to the local city or township in which production occurs.[5]

Benton Solar states that they expect 205,000 MWH of production from the site. This number is used to estimate the production tax..[6] I assume that IMPLAN does not model this particular treatment of a solar energy product. Thus the numbers below are augmented by an estimated $49,200 in solar production tax to Minden Township and $196,800 to Benton County each year of operation.

These figures are used as direct tax impacts for property tax only. The operations of Benton Solar would still pay corporate profit and sales tax; its employees would pay income and payroll taxes, etc.

The increase in output within the **Solar** industry would also drive tax revenues. The total impact for township general taxes is estimated at **$73,623**. School district taxes are estimated at **$11,057**. County taxes are estimated at

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4 "Xcel Energy's Sherco Solar starts producing carbon-free electricity for customers." https://corporate.my.xcelenergy.com/s/about/newsroom/press-release/xcel-energy-s-sherco-solar-starts-producing-carbon-free-electricity-for-customer-MCFEK7MJWN2NDZPPDEPVXFDN6AWY (release dated Nov. 19, 2024, retrieved from the internet May 30, 2025.)

5 Minnesota Statute 272.0295, subd. 3.

6 Benton Solar indicated in interviews that it did not expect any change in the classification of the acreage for the real property occupied by the project. This study therefore assumes no impact to real property taxes collected, but notes https://www.revenue.state.mn.us/solar-energy-production-tax and Minnesota Statute 272.02, subd. 24.

$215,615. State taxes are estimated **$339,947**. All of the above incorporate the special solar incentives listed above, any other direct impacts not related to property taxes, and all indirect and induced effects. Federal taxes are estimated **$260,367**. This totals **$899,610** in supported tax revenues.

Gain in Solar Industry Tax Impact[7]

	Minden Township	School District	County	State	Federal	Total
Direct	$60,534	$316	$200,066	$253,969	$167,368	*$682,253*
Indirect	$10,617	$8,711	$11,800	$67,963	$67,433	*$166,525*
Induced	$2,472	$2,030	$2,749	$18,015	$25,566	*$50,832*
Total	**$73,623**	**$11,057**	**$215,615**	**$339,947**	**$260,367**	***$899,610***

These gains recur annually. I make the relatively conservative assumption that the life of Benton Solar from this project would be 25 years. Government revenue for the life of this project can be projected on a net present value basis, assuming a 5% discount rate for future tax flows.

Jurisdiction	Net present value
Minden Township	$1,037,638
School District	$155,837
Benton County	$3,038,866
State of Minnesota	$4,791,194
Federal	$3,669,598
TOTAL	**$12,693,133**

Conclusions and precautions

One should take care with these results. As there are few examples to apply, the social accounting matrix that IMPLAN uses for these calculations are based on few observations and are based on other regions, there is a level of

[7] All dollar values are presented in 2026 USD. Numbers may not add up due to rounding.

extrapolation to this study that makes reliability less than, for example, building a factory that relies on local supply chains and labor market expertise. This applies more to the operation phase than the construction phase.

The figures presented here can be compared to some research from the economics literature on the local multiplier effects of renewable energy programs. Fabra, et al., find that during the operation phase, local jobs increase by 0.043-0.12 jobs per MW of solar field created in a sample of rural municipalities in Spain.[8] The estimates in this report are comparable in size. On the other hand. Batini, et al., find a spending multiplier on solar and wind of 1.54 (with a range of 1.1 – 1.7), which is less than I find in this report.[9]

Meta, in an analysis of its use of renewable energy for its data centers, finds an employment multiplier of 2.8 (meaning 1.9 additional jobs for each on-site job) during construction and 5.7 additional jobs for each on-site job[10]. This last number, however, is for the entirety of the U.S.; the figures in this report show how much comes to the St. Cloud metro area, using assumptions about commuting to jobs in the area from outside of Benton and Stearns counties.

Readers and policymakers should therefore take the figures above as illustrative of the impact of Benton Solar rather than definitive estimates. The benefits to the region are substantial, apart from the renewable energy aspect. The gain to local businesses from not only the investment in the solar project but also the presence of new employees will create real gains to existing workers, firms, landowners, and the public sector.

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[8] Natalia Fabra, Eduardo Gutiérrez, Aitor Lacuesta, Roberto Ramos, "Do renewable energy investments create local jobs?" Journal of Public Economics, Volume 239, November 2024, https://doi.org/10.1016/j.jpubeco.2024.105212

[9] Nicoletta Batina, Mario Di Serio, Matteo Fragetta, Giovanni Melina, and Anthony Waldron, "Building Back Better: How Big Are Green Spending Multipliers?" Ecological Economics, Volume 193, March 2022, https://doi.org/10.1016/j.ecolecon.2021.107305

[10] "Meta's U.S. renewable energy economic impact report." May 2023. https://datacenters.atmeta.com/wp-content/uploads/2023/08/23MET005-Economic-Impact-Report_FC-Final_RVS0803.pdf

Appendix

There are five key economic indicators that IMPLAN reports. Each is based on the production function for a given industry in the selected region in a given year or years, which demonstrates the interconnectedness of the economy.

Employment

An industry-specific mix of full-time, part-time, and seasonal employment, with an annual average that accounts for seasonality. Employment is not equal to full-time equivalents.

Labor Income

All forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income.

Contribution to GDP

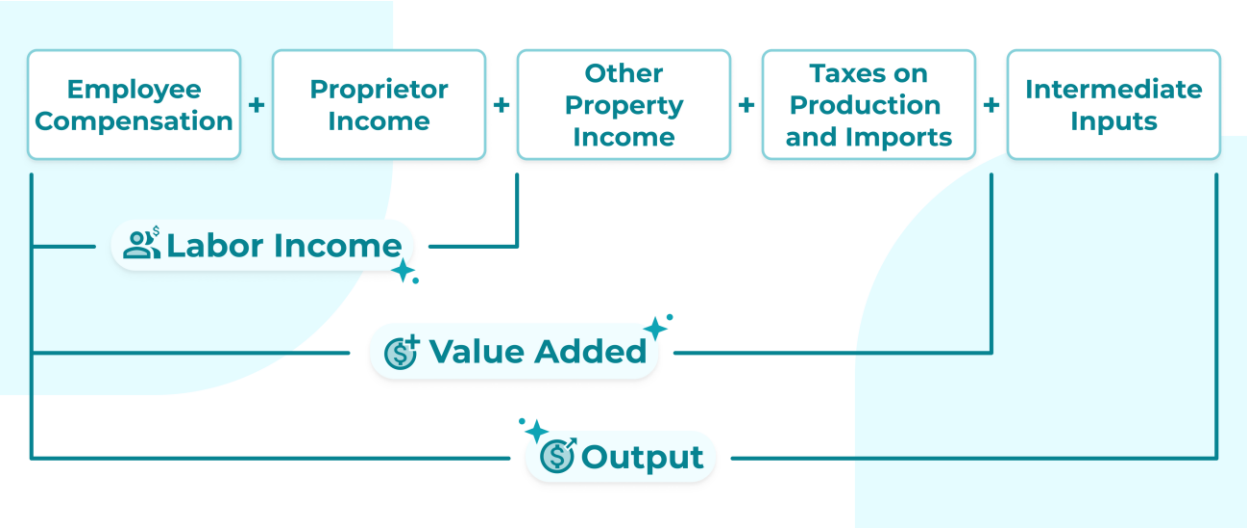
Known as Value Added, this is the difference between an Industry's or establishment's total Output and the cost of its Intermediate Inputs.

Output

The value of industry production; in IMPLAN these are annual production estimates for the year of the dataset. In most instances, Output is equal to sales or revenue. In this analysis, Output was modeled as total operating gains and losses.

Tax

Taxes are reported at the sub county general (city/township), sub county special district (fire, police, school), county, state, and federal levels based on effective tax rates in the Region.



Types of Effects

Direct Effects are the initial effects to a local industry or industries due to the activity or policy being analyzed

Indirect Effects are the effects stemming from business to business purchases in the supply chain taking place in the state

Induced Effects are the effects in the state stemming from household spending of labor income, after removal of taxes, savings, and commuters

IMPLAN® model, **2023** Data, using inputs provided by the user and IMPLAN Group LLC, IMPLAN System (data and software), 16905 Northcross Dr., Suite 120, Huntersville, NC 28078 www.IMPLAN.com