Study Highlights

- The purpose of the analysis is to estimate the economic impact of the Mammoth Solar & Moss Creek Solar projects on the Pulaski County economy as well as estimate the associated negative economic impact for farmers and suppliers related to 10,819 acres of farmland being converted to solar use.

Solar Construction/Installation Impact

- The development of the Mammoth Solar & Moss Creek Solar projects will include a 36-month development period where $1.3 billion will be spent to install the two solar projects. The solar developers anticipate investing:
  - Equipment: $763.7 million
  - Onsite labor: $381.8 million
  - Onsite materials: $25.5 million
  - Other: $101.8 million

- Approximately 60% of the total investment will be spent on equipment that will be purchased outside of Pulaski County. However, local spending on labor, materials, and other services is estimated to total $112.0 million.

  Total Local Construction Impacts
  - $141.6 million in economic impact over the 36-month period.
  - 1,823 total construction jobs years of employment during construction.
  - $107.5 million in total workers' earnings paid to construction workers during this period.

Solar Operation Impact

- Once operational, the solar projects are expected to employ 20 workers earning an average of $69,600 per year.

  Total On-going Impacts
  - $98.1 million annual economic impact.
  - 51 total permanent jobs created.
    - For every 1 solar job in the county, 1.6 additional jobs are created in the form of indirect and induced employment elsewhere in Pulaski County.
  - $2,195,000 in total annual workers' earnings.
  - $5.3 million in annual land rent payments to Pulaski County residents.

Loss in Farmland Impact

- The Mammoth Solar & Moss Creek Solar projects will reduce the available farmland in Pulaski County and reduce farm output by an estimated ~~$9.5~~ $13.6 million per year. This analysis estimates the total economic impact of this reduction in farm output to calculate the additional negative impact that may be felt by suppliers and other businesses in the county.

  Total Loss in Farmland Impact
  - ~~$13.0~~ $18.5 million in annual economic impact.
  - 77 total permanent jobs.
  - ~~$2.1~~ $3.12 million in total annual workers' earnings.
  - $1.2 million in annual land rent payments to Pulaski County residents.

Indirect and induced impacts *represent the spin-off economic activity resulting from the business-to-business expenditures initiated by the company and the consumer-to-business expenditures initiated by workers spending a portion of their earnings on goods and services in the economy.* ***Economic output*** *is gross output and is the sum of the intermediate inputs and final use. This is a duplicative total in that goods and services will be counted multiple times if they are used in the production of other goods and services. Economic output can be thought of as the value of goods and services sold in the economy or revenues for businesses in the economy.* ***Value added*** *is defined as the value of gross output less intermediate inputs.* ***Worker's earnings*** *or household earnings consist of wages and salaries, employer provided benefits, and proprietors' income. For permanent or on-going activity,* ***Employment*** *consists of a count of jobs that include both full-time and part-time workers. For temporary construction impacts, a* ***Job Year*** *is defined as full employment for one person for 2080 hours in a 12-month span.*

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Study Highlights - Continued

Overall Comparison

Based on the analysis contained in this report and summarized in Table 1, the following comparisons can be made:

- Solar Use will result in a loss of approximately 26 jobs and ~~$91,000~~ $917M in workers' earnings.
- Solar Use workers will earn more than Farm Use workers on average.
  - The average salary for direct Solar Use jobs is ~~X~~ 1.7 times greater than Farm Use job pay.
- Solar Use jobs support a greater number of indirect and induced workers per direct job.
  - Solar Use employment supports 1.6 jobs per direct worker while Farm Use employment supports 0.4 jobs per direct worker.
- Solar Use will result in an increase in total economic output of ~~$85.1 million~~ $79.4 MM.
  - The direct economic output for Solar Use is ~~X~~ 5.28 times greater than the direct economic output of Farm Use.
- Solar Use will result in a $4.1 million increase in land rent paid to Pulaski County residents.
  - The land rent paid to local residents for Solar Use is 4.5 times greater than the rent paid for Farm Use.
- Solar Use will increase value added by ~~$5X8~~ $45.2 million, which is to say, the county's economy will increase by ~~$5X8~~ $45.2 million.
  - Solar Use will result in a net increase in the county's economy of ~~X~~ 46. percent.

Table 1. Comparison of Total Annual Economic Impact of Solar Use vs. Farm Use

	Annual Solar Use Impact	Annual Farm Use Impact	Difference
Jobs:	REFER TO SUPPLEMENTAL TABLE 1.		
Direct		77.1	(37.1)
Indirect & Induced	31.4	20.1	11.2
Total Jobs	51.4	77.2	(25.9)
Workers' Earnings:			
Direct	$1,392,000	$1,311,566	$80,434
Indirect & Induced	$803,462	$793,104	$10,358
Total Workers' Earnings	$2,195,462	$2,104,670	$90,792
Economic Output:			
Direct	$76,852,111	$9,506,189	$67,345,922
Indirect & Induced	$21,218,868	$3,501,129	$17,717,739
Total Economic Output	$98,070,979	$13,007,318	$85,063,661
Value Added:			
Total Value Added	$57,185,656	$5,361,490	$51,824,165
Land Rent:			
Total Rent Paid	*$9,737,100*	*$2,163,800*	*$7,573,300*
Rent Paid to Pulaski Residents	$5,316,457	$1,181,435	$4,135,022

Note: Solar Use will include a one-time construction impact of $141.6 million not reflected in the table above.

Reduction in Farming Activity

The negative economic impact associated with the farmland being converted to solar use is also calculated in this study. The negative impact is estimated to include the reduction in direct farm revenues as well as the reduction in indirect supplier revenues and the reduction in worker spending elsewhere throughout the county.

Impact DataSource relies on data from the United States Department of Agriculture (USDA) to estimate the amount of revenue per acre generated by farmland in Pulaski County. The total loss in farm revenue is estimated based on the per-acre metric and the number of total acres converted to solar use. The total economic impact is then estimated by applying the RIMS II input-output model.

Table 4. Estimated Reduction in Farm Output

Farm Acres converted to Solar Use	*10,819*
*Farm Revenue/ Ag Sales per acre**	*$879*
Total Reduction in Farm Revenue	$9,506,189

REFER TO SUPPLEMENTAL TABLE 2.

* 2017 Census of Agriculture Data, USDA National Agricultural Statistics Service

Economic Impacts Defined

The economic impacts are measured in common measures of economic activity including employment, workers' earnings, economic output, and value added. Employment consists of a count of jobs that include both full-time and part-time workers. Workers' earnings consist of wages and salaries, employer-provided benefits, and proprietors' income. Economic output is gross output and is the sum of the intermediate inputs and final use. This is a duplicative total in that goods and services will be counted multiple times if they are used in the production of other goods and services. Economic output can be thought of as the value of goods and services sold in the economy or revenues for businesses in the economy. Value added is defined as the value of gross output less intermediate inputs and represents the contribution to gross area product or the size of the economy.

Direct Economic Impacts

Direct spending, direct employment, and direct salaries serve as the basis for the economic impact calculations in this impact analysis.

Spin-off Economic Impacts

The total economic impact supported by the company includes the direct as well as spin-off activity. The company's direct economic activity ripples through the economy and supports spin-off economic activity in the form of indirect and induced impacts. Indirect impacts reflect economic activity resulting from the business-to-business expenditures initiated by the company. Induced impacts refer to the consumer-to-business expenditures initiated by workers that spend a portion of their earnings on goods and services in the economy.

Rent Payments for Solar vs. Farm Use

In addition the specific economic impacts calculated for the activities described above, project developers have provided additional detail on specific rent payments to be paid to property owners. The solar developers will pay land owners approximately $900 per acre in rent for the use of the land whereas land owners typically receive approximately $200 per in rent for the use of the land for agriculture purposes.

Table 5. Land Rent Payments

Farm Acres converted to Solar Use		10,819
Rent Paid Per Acre for Solar Use	$900 per acre	$9,737,100
Rent Paid Per Acre for Farm Use	$200 per acre	$2,163,800
Increase in Rent Payments		$7,573,300
Percent of Land Owners Residing in Pulaski County		54.6%
Increase in Rent Payments to Pulaski County Residents		$4,135,022

Impact of Loss of Farmland

The Mammoth Solar & Moss Creek Solar projects will convert 10,819 acres from farm use to solar use and it is projected to result in a reduction in direct farm output of $9.5 million per year.

To estimate this reduction in farm output, Impact DataSource relied on data from the USDA Census of Agriculture. The 2017 Census of Agriculture reports $188.2 million of agriculture products produced in Pulaski County. After applying a annual inflation of two percent per year, the value of products produced in 2021 is estimated to be $203.7 million. Pulaski County contains 231,880 farm acres of land resulting in a metric of $879 of agricultural product sales per acre. The reduction in direct farm output is obtained by applying the per-acre metric to the number of total farm acres converted to solar use.

Table 12. Estimate Reduction in Farm Output

Farm Acres converted to Solar Use	10,819
Market Value of Ag Products Sold (2017)	188,227,000
Market Value of Ag Products Sold (2021)	203,742,958
Total Farm Acres in Pulaski County	231,880
Agricultural Product Sales per Acre	$879
Total Reduction in Farm Revenue	$9,506,189

* 2017 Census of Agriculture Data, USDA National Agricultural Statistics Service

REFER TO SUPPLEMENTAL TABLE 2. UPDATED DATA SOURCES USED.

The total economic impact associated with the loss in farmland, including the indirect and induced activity, is summarized below. In short, the economic impact of the loss of farmland includes 77 jobs, $2.1 million in workers' earnings and $13.0 million in spending (or economic output) annually.

Table 13. Economic Impact of the Loss of Farmland

		Annual Impact
Jobs:		
Direct		57.1
Indirect & Induced		20.1
	Total Jobs	77.2
Workers' Earnings:		
Direct		$1,311,566
Indirect & Induced		$793,104
	Total Workers' Earnings	$2,104,670
Economic Output:		
Direct		$9,506,189
Indirect & Induced		$3,501,129
	Total Economic Output	$13,007,318
Value Added:		
	Total Value Added	$5,361,490
Land Rent:		
	Total Rent Paid	*$2,163,800*
	Rent Paid to Pulaski Residents	$1,181,435

REFER TO SUPPLEMENTAL TABLE 3.

The total economic impact includes the reduction in direct farm revenues as well as the reduction in indirect supplier revenues and the reduction in worker spending elsewhere throughout the county.