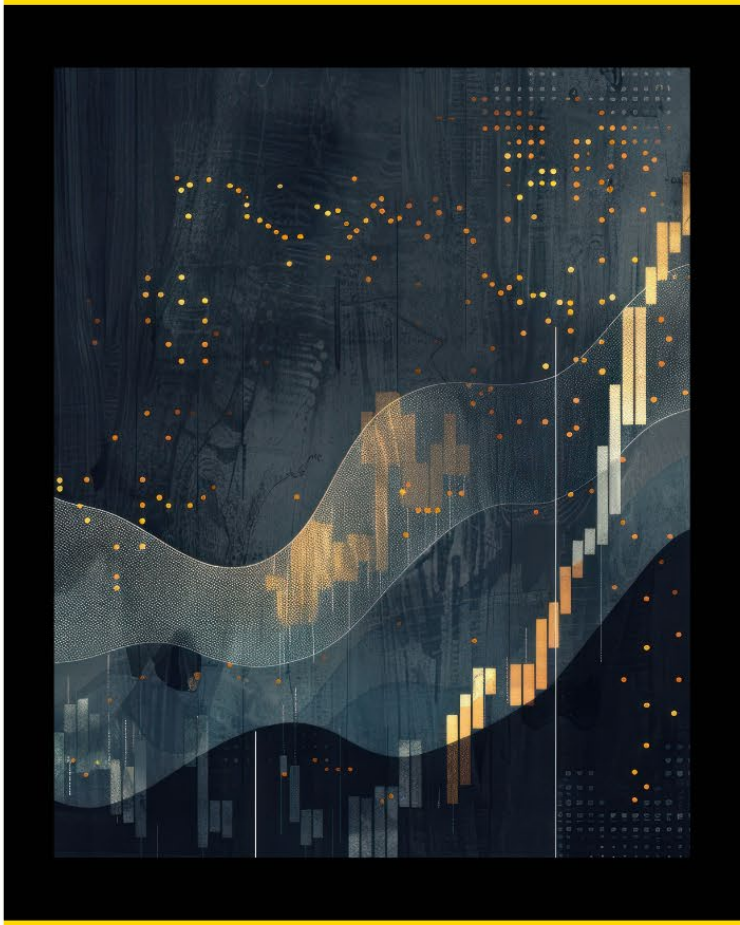
Economic Impact Analysis of Rainbow Springs Solar Project



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Principal Investigator:
Craig Compton

Assisted By:
Samip Thakuri

Edited by:
Bekah Selby-Leach and Andrea Wilson

CEDBR

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EXECUTIVE SUMMARY

The introduction of a new solar power generation facility in Cherokee County, Kansas, is planned for construction in 2028. This proposed 225-megawatt facility is designed to meet the growing energy demand within Southeast Kansas and Southwest Missouri. After a significant construction phase, the operations will provide additional economic stimulation beyond the energy provided by the facility.

This represents a tremendous opportunity for the region to align its labor supply and physical inventory to adequately capture the full value of the economic impact.

The impact will be seen across the economy, with businesses, households, and local government entities each seeing additional stimulation as a result of this project. Businesses supporting the supply chain will see substantial contributions during both the construction and operations phases of the project. Households will see a boost in the induced impact, primarily during the construction phase of the project. Each of these serves to support additional fiscal revenues captured by the local and county governments, primarily through property and sales taxes.

METHODOLOGY

IMPACT ESTIMATION

The impact model used to estimate the economic effects of the energy industry on the regional and state economies was IMPLAN (IMpact analysis for PLANning). IMPLAN is one of the most commonly used models for impacts similar to this project. Alternative models are less common in practice and tend to involve a higher level of customization. The advantage of using this model is that it is broadly available and uses straightforward methodologies. Others could replicate the study or even develop similar studies to provide reliability or comparability.

TERMS AND DEFINITIONS

- **Direct impact**: The immediate economic effect of an industry's activity, measured in terms of changes in dollars, jobs, or wages.
- **Indirect impact**: The effect generated through the supply chain, reflecting increased demand for goods and services from supporting industries as a result of the direct impact.

- **Induced impact**: The economic activity resulting from increased household spending due to changes in income from the direct and indirect effects.
- **Market area**: The geographic scope used in this study to assess economic activity, defined as the Wichita MSA and its surrounding catchment area.
- **Multiplier**: A factor that captures the ripple effect of a change in one industry on the broader economy. A multiplier greater than 1 indicates that each dollar or job created leads to additional economic benefits.
- **Output impact**: The total value of goods and services produced, equivalent to a business's gross revenue.
- **Total impact**: The sum of direct, indirect, and induced effects, representing the full economic contribution of an event or activity to the region.
- **Value Added:** The contribution of an industry to the local economy and is calculated as the sum of Employee Compensation, Proprietor Income, Taxes on Production and Imports (TOPI), and Other Property Income (OPI). It reflects the net output of a sector after subtracting the value of intermediate inputs and is equivalent to Gross Regional Product (GRP) at the industry level.

CONSTRUCTION IMPACT

DIRECT, INDIRECT, AND INDUCED EFFECTS

Annual Construction Impact

Impact	Employment	Wages	Value Added	Output
Direct	300	$41,089,618.14	$140,273,549.31	$469,577,848.81
Indirect	173	$21,662,961.69	$27,630,572.26	$44,710,803.72
Induced	94	$5,111,504.56	$10,474,533.49	$17,222,708.28
Total	**567**	**$67,864,084.39**	**$178,378,655.06**	**$531,511,360.81**

For the duration of construction, a significant proportion of the jobs will be stimulated within the Cherokee County region. These estimations are set for the year 2028 with figures generated and inflation-adjusted by the IMPLAN software calculation. It should be noted that the indirect and induced figures are primarily driven by capital expenditure and exhibit only marginal change when the direct employment quantity is either expanded or contracted. In total, the economic impact of this project's construction is valued at an estimated **$531.5M.** It should be noted that the wages outlined within the construction impact include proprietor income in addition to the $15,440,442.86 of the construction industry wages.

Of the induced and indirect impacts, the induced impact has the highest level of effect. The indirect impact includes operations necessary to support the supply chain of construction (equipment rental, gasoline, real estate, etc.), while the induced impact represents the impact of wages spent throughout the economy by the households of the construction workers (housing payments, insurance, restaurants, etc.). The ripple effect of this investment is broad, with industries from legal services to equipment manufacturing to retail seeing stimulation from this project. This represents the opportunity for businesses within Cherokee County to appropriately align staffing and inventory resources during the construction phase in order to capture the additional spending seen within the area during this time period.

Construction salaries were estimated using the Bureau of Labor Statistics Quarterly Census of Employment and Wages (2023) for Cherokee County and its surrounding counties in Kansas, Oklahoma, and Missouri. The estimated construction salary for this region equated to $51,468.14, resulting in a total annual wage contribution of $ 15,440,442.86.

OPERATIONS IMPACT

DIRECT, INDIRECT, AND INDUCED EFFECTS

Annual Operations Impact

Impact	Employment	Wages	Value Added	Output
Direct	8	$1,055,923.80	$8,261,901.44	$29,311,808.90
Indirect	40	$3,668,031.35	$8,229,480.85	$18,331,540.85
Induced	17	$993,448.37	$1,879,409.20	$3,165,208.09
Total	**66**	**$5,717,403.51**	**$18,370,791.49**	**$50,808,557.83**

The operations impact is a measure of the annual impact seen by the operations of the facility. In contrast to the construction phase, the indirect impact is more than double the construction impact. Additionally, this effect is sustained during the operation of the facility with key regional suppliers realizing the highest degree of impact. This represents the opportunity for suppliers within the region to align their resources and create long-term partnerships to effectively capture the economic stimulus of the project.

Annual County Tax Impacts (Indirect and Induced Effects)			
Tax Type	**Production and Imports**	**Households**	**Total**
Sales Tax	$27,648.26		$27,648.26
Property Tax	$149,713.17		$149,713.17
Motor Vehicle License	$632.85		$632.85
Severance Tax	$0.00		$0.00
Other Taxes	$3,641.64		$3,641.64
Special Assessments	$1,418.34		$1,418.34
Personal Tax: Income Tax		$20.70	$20.67
Personal Tax: Motor Vehicle License		$166.06	$166.05
Personal Tax: Property Taxes		$1,418.55	$1,418.54
Personal Tax: Other Tax (Fish/Hunt)		-	$0.00
Total	**$183,054.26**	**$1,605.31**	**$184,659.52**

Annual Sub-County Tax Impacts (Indirect and Induced Effects)			
Tax Type	**Production and Imports**	**Households**	**Total**
Sales Tax	$84,364.69		$84,364.69
Property Tax	$247,298.33		$247,298.33
Motor Vehicle License	$156.47		$156.47
Severance Tax	$0.00		$0.00
Other Taxes	$9,787.02		$9,787.02
Special Assessments	$9,501.17		$9,501.17
Personal Tax: Income Tax		$11.63	$11.63
Personal Tax: Motor Vehicle License		$41.29	$41.29
Personal Tax: Property Taxes		$2,380.06	$2,380.06
Personal Tax: Other Tax (Fish/Hunt)		$0.00	$0.00
Total	**$351,107.68**	**$2,432.98**	**$353,540.66**

The Sub-County Tax impact estimates are estimates for the proportion of fiscal stimulation that will occur as a result of the induced and indirect impacts at a more local level than the county. This includes all city and special taxing jurisdictions within Cherokee County and is an approximation for the sum total that will be recognized throughout the region on an annual basis.

Another important measure of this project is the tax impact that benefits local jurisdictions. From just the induced and indirect impacts alone, even prior to the inclusion of the direct impact, the county and local governments combined stand to see a **$538,199** annual contribution from added sales and property tax. This does not include any cash flows from the contribution agreement and only includes data from the indirect and induced effects.

The contribution agreement is a voluntary economic payment provided by the project developer to Cherokee County, paid out of the first 10 years of the project. These funds are unrestricted and can be used for any purpose by the County. This benefits and impact of this contribution will be further explored in the Fiscal Impact Model section.

Because the contribution agreement skews any direct tax impacts that would be recognized, CEDBR conducted an analysis using its fiscal model (explored in the next section) as a substitute for these IMPLAN estimates.

FISCAL IMPACT MODEL

In order to evaluate the costs and benefits of incentives being offered for this project, CEDBR's proprietary fiscal model was used to generate and estimate. This cost-benefit analysis model weights the costs of foregone fiscal revenues against the economic and fiscal benefits of added stimulation.

The Center for Economic Development and Business Research developed the 2005 CEDBR Fiscal Benefit-Cost Model for local officials and economic development professionals to assess the costs and benefits of economic development incentives. The CEDBR benefit-cost model software is the outcome of a process led by the City of Wichita, Sedgwick County, and the Greater Wichita Economic Development Coalition to improve local capacity to analyze economic development incentives. This model has been by utilized by decision makers across Kansas and is updated on a continuous basis to accurately capture the fiscal and economic dynamics across the region.

The analysis analyzes the costs and benefits (incorporating time value of money calculations) over the 10-year and 20-year period. Dollar figures are represented in current dollar values as of 2025.

COST BENEFIT MODEL RESULTS

The solar project brings significant economic value to the state over the 10 year and 20-year time horizons. The project is estimated to bring over **$60.8 million** in net profits over the 10-year period and substantially more (**$89.6 million)** over the 20-year period. Moreover, the benefit-cost ratio over the 10-year period is **5.0** and in the 20-year period this ratio increases to around **6.9**. This number means that for every dollar spent the state gains to benefit five to nearly seven dollars of benefit over time. These results prove that this project is not only cost-effective but a highly beneficial investment to the state of Kansas.

At the county level, the net public benefits are estimated at **$6.6 million** over the first 10 years and **$28.1 million** over the 20-year period. The Benefit-Cost Ratio is **1.24** in the 10-year period, while over 20 years, the benefits increase to **2.02** times the cost, reflecting strong returns. Therefore, the project demonstrates positive economic value for Cherokee County.

Additionally, beyond the County, the local school district is set to benefit substantially. The net public benefits to 493 Columbus are estimated at $5.7 million over 10 years and $18.2 million over 20. This is a Benefit-Cost Ratio of 1.48 and 2.53, indicating strong economic value for the local school district.

CEDBR-FISCAL IMPACT MODEL - RESULTS

CEDBR Center for Economic Development and Business Research
1845 Fairmount St.
Wichita, Kansas 67260-0121
(316) 978-3225

DATE OF ANALYSIS 5/28/2025
TIME OF ANALYSIS 9:49 AM

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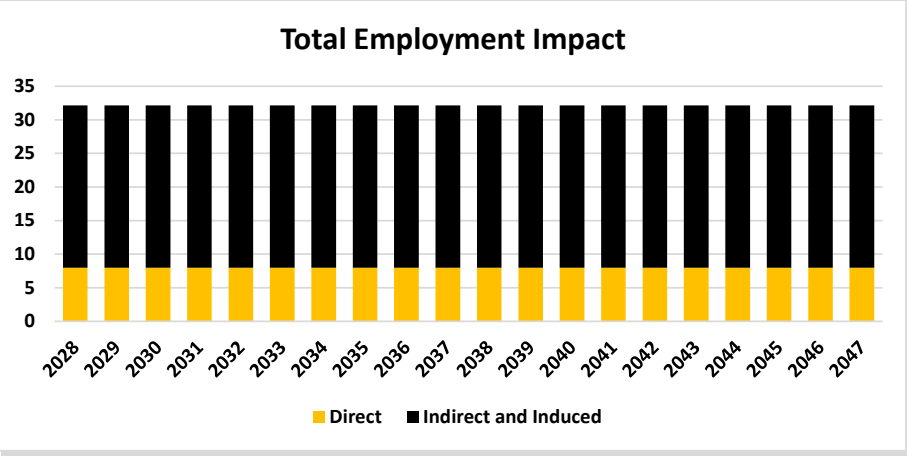
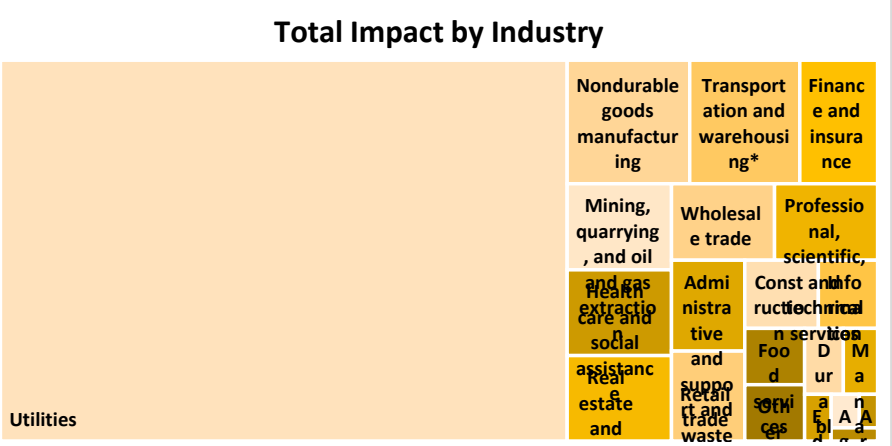
FIRM IMPACT

VERSION OF ANALYSIS V1

FIRM SUMMARY		
Company Name	**Rainbow Springs Solar Project**	
	10-year period	20-year period
Number of new jobs	**8**	8
Amount of payroll	**$7,336,883**	$17,197,040
Amount of capital investment	**$500,000,000**	$500,000,000
Land	**$10,000,000**	$10,000,000
Buildings	**$340,000,000**	$340,000,000
Machinery and Equipment	**$150,000,000**	$150,000,000
Substitution percentage	0.0%	OVERIDDEN
Firm NAICS code	2211A0 Electric power generation, transmission,	

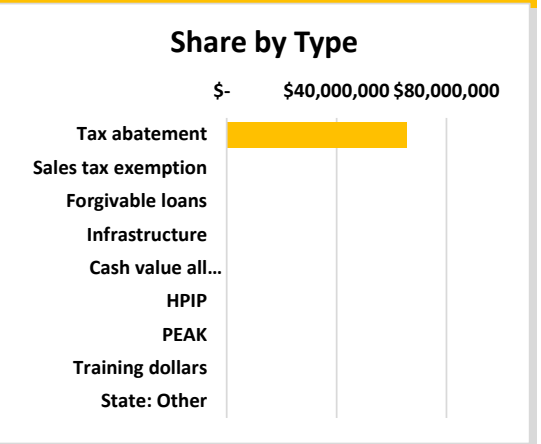
IMPACT SUMMARY			
	Construction	**Firm**	
	Total	**10-year period**	20-year period
Jobs			
Direct	300	**8**	8
Total	542	**32**	32
Payroll earnings			
Direct	$163,200,000	**$7,336,883**	$ 17,197,040
Total	$267,696,960	**$15,802,912**	$ 37,040,704
Multiplier			
Jobs	1.81	**4.02**	
Earnings	1.64	**2.15**	



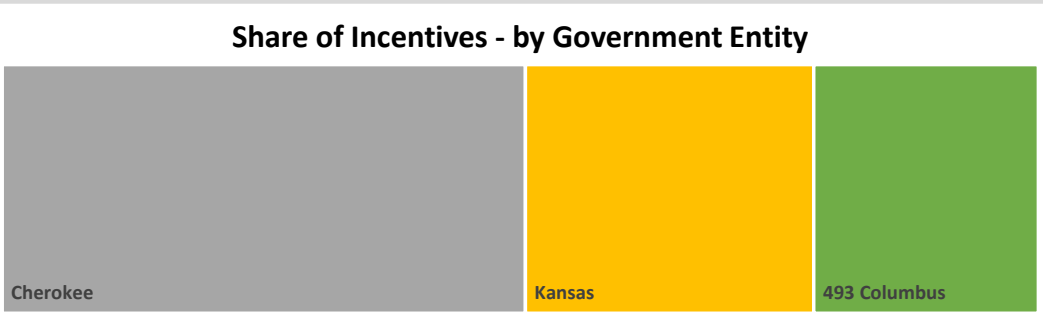


FISCAL IMPACT

INCENTIVE SUMMARY					
	City	*County*	*State*	*School District*	Special District
	Unincorporated	Cherokee	Kansas	493 Columbus	Select
Tax abatement	NA	$ 33,161,900	$ 18,275,000	$ 14,232,400	$ -
Sales tax exemption		$ -	$ -		
Forgivable loans		$ -	$ -		
Infrastructure		$ -	$ -		
Cash value all other incentives		$ -	$ -		
HPIP			$ -		
PEAK			$ -		
Training dollars			$ -		
State: Other			$ -		
Total	**NA**	**$ 33,161,900**	**$ 18,275,000**	**$ 14,232,400**	**$ -**



TAX ABATEMENT PARAMETERS	
Real Property	
Number of years	10
Percentage	100.0%
Personal Property	
Number of years	0
Percentage	0.0%



	City		County		State	
	Unincorporated		Cherokee		Kansas	
	10-year period	20-year period	**10-year period**	20-year period	**10-year period**	20-year period
Present value of net benefits	**$0**	$0	**$6,666,050**	$28,149,836	**$60,797,932**	$89,699,431
Rate of Return on Investment						
Net public benefits	**$0**	$0	**$6,666,050**	$28,149,836	**$60,797,932**	$89,699,431
Public costs	**$0**	$0	**$27,579,443**	$27,579,443	**$15,198,596**	$15,198,596
ROI	**NA**	NA	**24.2%**	102.1%	**400.0%**	590.2%
Benefit-Cost Ratio						
Public benefits	**$0**	$0	**$34,245,494**	$55,729,280	**$75,996,528**	$104,898,027
Public costs	**$0**	$0	**$27,579,443**	$27,579,443	**$15,198,596**	$15,198,596
Benefit-Cost Ratio	**NA**	NA	**1.24**	2.02	**5.00**	6.90

A 10-year period accounts for a business or economic cycle. Estimates beyond that period of time include increased risk and decreased accuracy due to market volitility and changes in public policy.

A benefit-cost ratio over 1 equates to public benefits being greater than public costs during the period.

	School District		Special District	
	493 Columbus		Select	
	10-year period	20-year period	**10-year period**	20-year period
Present value of net benefits	**$5,721,034**	$18,167,919	**$0**	$ -
Rate of Return on Investment				
Net public benefits	**$5,721,034**	$18,167,919	**$0**	$0
Public costs	**$11,836,525**	$11,836,525	**$0**	$0
ROI	**48.3%**	153.5%	**NA**	NA
Benefit-Cost Ratio				
Public benefits	**$17,557,560**	$30,004,444	**$0**	$0
Public costs	**$11,836,525**	$11,836,525	**$0**	$0
Benefit-Cost Ratio	**1.48**	2.53	**NA**	NA

In the preparation of this report, the Center for Economic Development and Business Research assumed that all information and data provided by the applicant or others is accurate and reliable. CEDBR did not take extraordinary steps to verify or audit such information, but relied on such information and data as provided for purposes of the project.

This analysis requires CEDBR to make predictive forecasts, estimates and/or projections (hereinafter collectively referred to as "FORWARD-LOOKING STATEMENTS"). These FORWARD-LOOKING STATEMENTS are based on information and data provided by others and involve risks, uncertainties and assumptions that are difficult to predict. The FORWARD-LOOKING STATEMENTS should not be considered as guarantees or assurances that a certain level of performance will be achieved or that certain events will occur. While CEDBR believes that all FORWARD-LOOKING STATEMENTS it provides are reasonable based on the information and data available at the time of writing, actual outcomes and results are dependent on a variety of factors and may differ materially from what is expressed or forecast. CEDBR does not assume any responsibility for any and all decisions made or actions taken based upon the FORWARD-LOOKING STATEMENTS provided by CEDBR.

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1845 Fairmount St.
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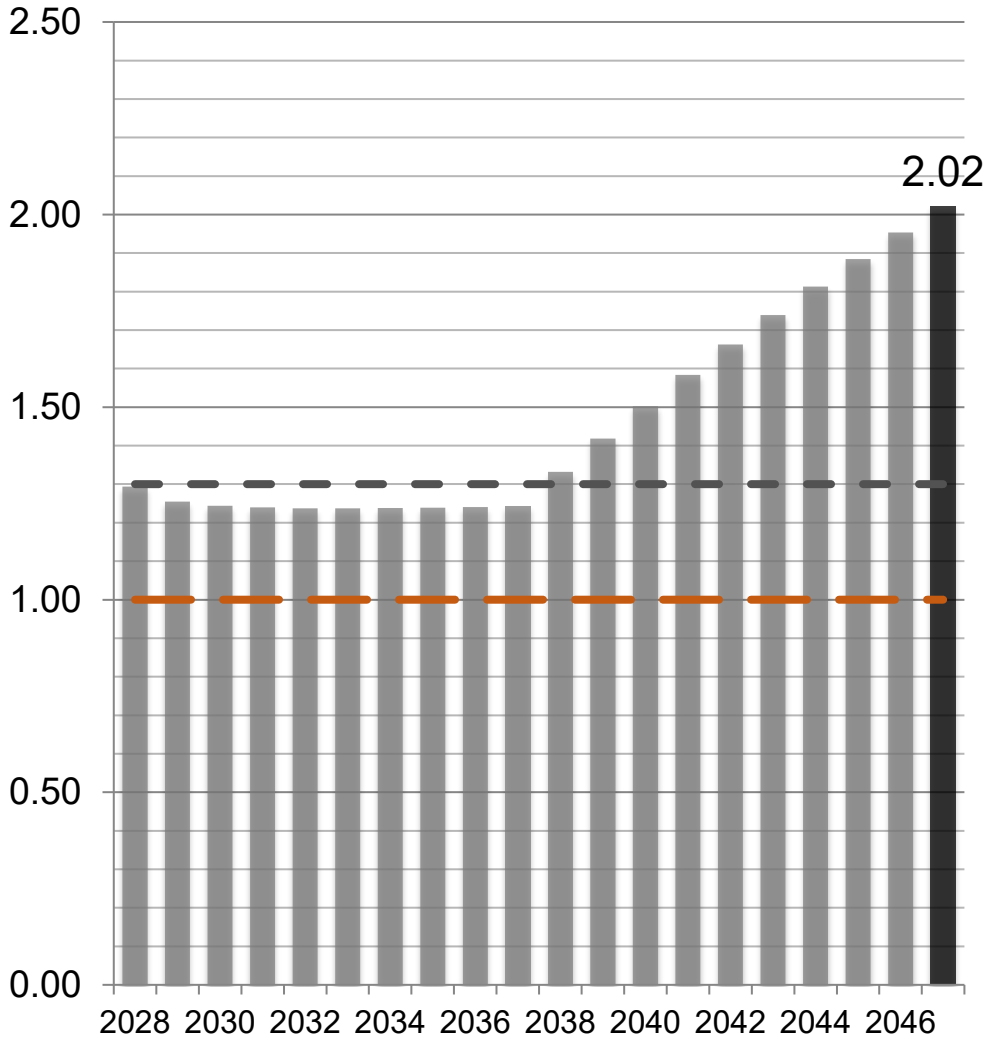
Project or Company Name: Rainbow Springs Solar Project
5/28/2025

Cherokee

Benefit-Cost Ratio



Present Value of Net Benefits

Yr. 1	$940,764
Yrs. 1-2	$1,606,311
Yrs. 1-3	$2,264,303
Yrs. 1-4	$2,914,828
Yrs. 1-5	$3,557,975
Yrs. 1-6	$4,193,831
Yrs. 1-7	$4,822,482
Yrs. 1-8	$5,444,013
Yrs. 1-9	$6,058,508
Yrs. 1-10	$6,666,050
Yrs. 1-11	$9,143,577
Yrs. 1-12	$11,541,314
Yrs. 1-13	$13,861,903
Yrs. 1-14	$16,107,896
Yrs. 1-15	$18,281,759
Yrs. 1-16	$20,385,877
Yrs. 1-17	$22,422,554
Yrs. 1-18	$24,394,016
Yrs. 1-19	$26,302,417
Yrs. 1-20	$28,149,836

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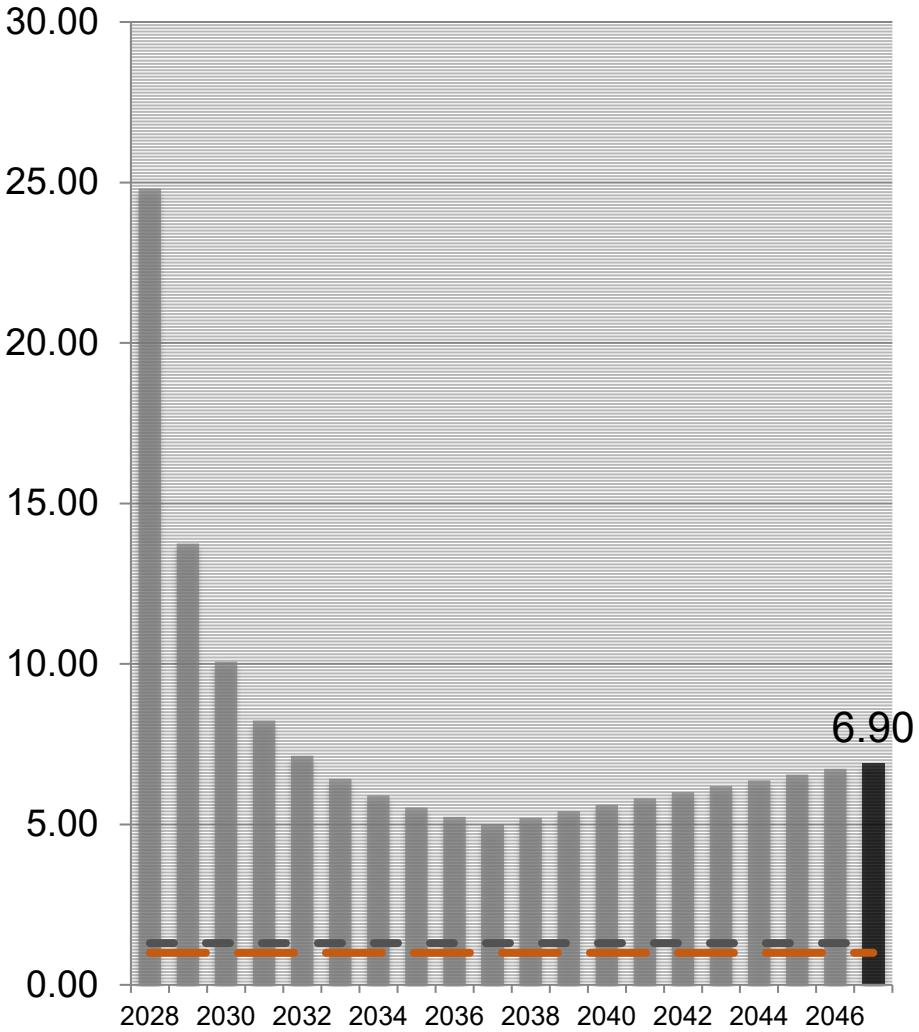
Kansas

Benefit-Cost Ratio



Present Value of Net Benefits

Yr. 1	$42,042,774
Yrs. 1-2	$44,251,740
Yrs. 1-3	$46,428,310
Yrs. 1-4	$48,572,981
Yrs. 1-5	$50,686,242
Yrs. 1-6	$52,768,572
Yrs. 1-7	$54,820,445
Yrs. 1-8	$56,842,325
Yrs. 1-9	$58,834,671
Yrs. 1-10	$60,797,932
Yrs. 1-11	$63,984,289
Yrs. 1-12	$67,100,111
Yrs. 1-13	$70,147,257
Yrs. 1-14	$73,127,532
Yrs. 1-15	$76,042,688
Yrs. 1-16	$78,894,424
Yrs. 1-17	$81,684,389
Yrs. 1-18	$84,414,183
Yrs. 1-19	$87,085,361
Yrs. 1-20	$89,699,431

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Wichita State University
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Wichita, Kansas 67260-0121
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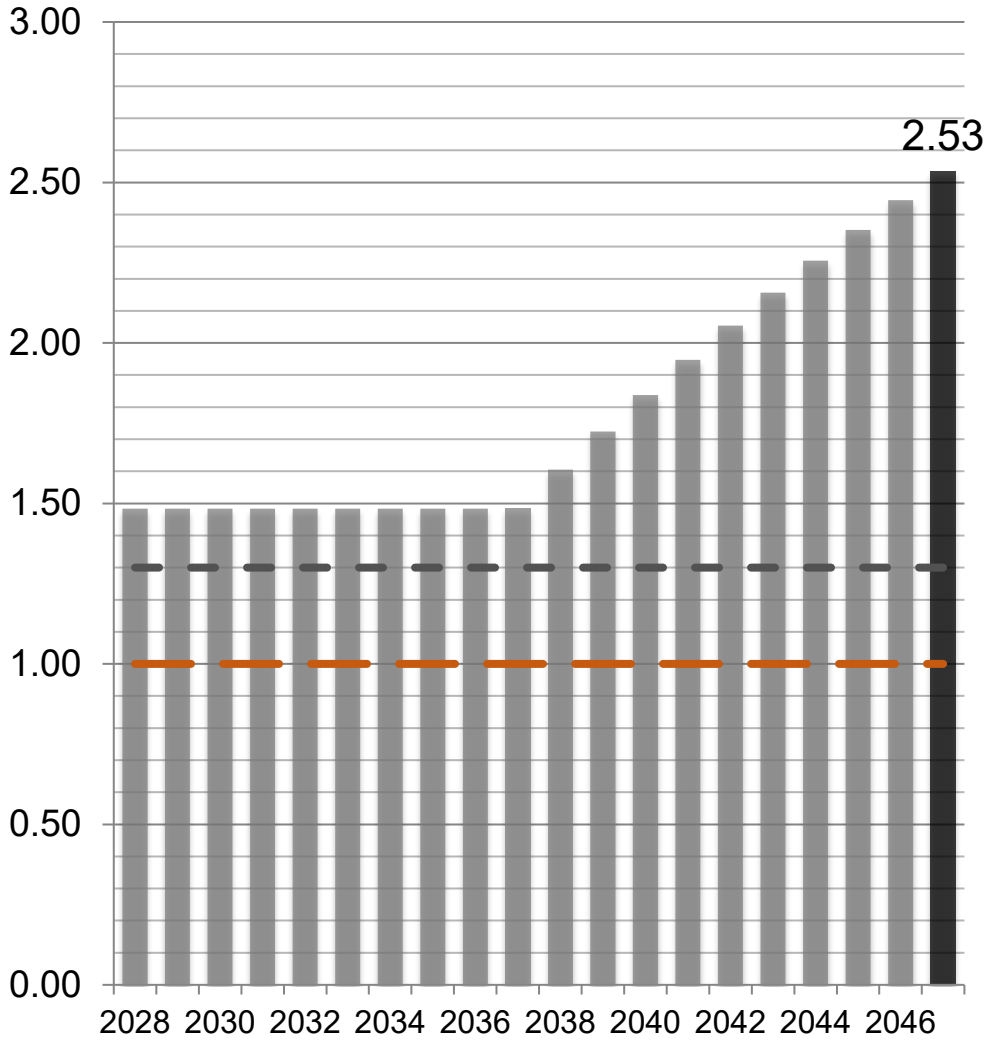
493 Columbus

Benefit-Cost Ratio



Present Value of Net Benefits

Yr. 1	$664,643
Yrs. 1-2	$1,306,809
Yrs. 1-3	$1,927,260
Yrs. 1-4	$2,526,730
Yrs. 1-5	$3,105,927
Yrs. 1-6	$3,665,538
Yrs. 1-7	$4,206,225
Yrs. 1-8	$4,728,628
Yrs. 1-9	$5,233,366
Yrs. 1-10	$5,721,034
Yrs. 1-11	$7,167,054
Yrs. 1-12	$8,564,175
Yrs. 1-13	$9,914,049
Yrs. 1-14	$11,218,276
Yrs. 1-15	$12,478,399
Yrs. 1-16	$13,695,909
Yrs. 1-17	$14,872,247
Yrs. 1-18	$16,008,805
Yrs. 1-19	$17,106,929
Yrs. 1-20	$18,167,919

20-Year Tax Outlay to Cherokee County (Nominal)				
	Property Tax	Sales Taxes	Total	
Year 0		$ 120,599.13	$	120,599.13
Year 1	10-year Abatement Period	$ 21,780.00	$	21,780.00
Year 2	-	$ 22,215.60	$	22,215.60
Year 3	-	$ 22,659.91	$	22,659.91
Year 4	-	$ 23,113.11	$	23,113.11
Year 5	-	$ 23,575.37	$	23,575.37
Year 6	-	$ 24,046.88	$	24,046.88
Year 7	-	$ 24,527.82	$	24,527.82
Year 8	-	$ 25,018.37	$	25,018.37
Year 9	-	$ 25,518.74	$	25,518.74
Year 10	-	$ 26,029.12	$	26,029.12
Year 11	$ 3,316,190.00	$ 26,549.70	$	3,342,739.70
Year 12	$ 3,316,190.00	$ 27,080.69	$	3,343,270.69
Year 13	$ 3,316,190.00	$ 27,622.31	$	3,343,812.31
Year 14	$ 3,316,190.00	$ 28,174.75	$	3,344,364.75
Year 15	$ 3,316,190.00	$ 28,738.25	$	3,344,928.25
Year 16	$ 3,316,190.00	$ 29,313.01	$	3,345,503.01
Year 17	$ 3,316,190.00	$ 29,899.27	$	3,346,089.27
Year 18	$ 3,316,190.00	$ 30,497.26	$	3,346,687.26
Year 19	$ 3,316,190.00	$ 31,107.20	$	3,347,297.20
Year 20	$ 3,316,190.00	$ 31,729.35	$	3,347,919.35
TOTAL	**$ 33,161,900.00**	**$649,795.85**	**$**	**33,811,695.85**

Another important consideration at the county level when evaluating this fiscal impact model is the fiscal cash flow. When the analysis is conducted for the scope of Cherokee County, the combined total between sales taxes and property taxes equals **$33.8 million**. The property taxes are abated for the first 10 years under the abatement arrangement, while the sales taxes are derived from the purchase estimates for the firm over 20 years. It should be noted that these fiscal tax flows are from the **direct** operation and do not include the additional benefit that would be seen from the indirect and induced effects of the project. This sets the baseline for the fiscal flows for the project, although the benefits would stand to increase with the inclusion of the other economic impacts.

ACKNOWLEDGEMENT

At Wichita State University's Center for Economic Development and Business Research (CEDBR), Craig Compton, Research Economist of CEDBR, served as the Principal Investigator, collecting and writing the report. Samip Thakuri, a Research Economist, provided supplemental assistance in gathering and verifying data. Dr. Bekah Selby-Leach, the Director of CEDBR, assisted in methodology design and editing.

The Center for Economic Development and Business Research, a unit of the W. Frank Barton School of Business at Wichita State University, is responsible for any errors in this report. Inquiries may be directed to: Center for Economic Development and Business Research, 1845 Fairmount St. Wichita, KS 67370. The Center can be reached by telephone at 1-316-978-3225 or through the website at www.CEDBR.org.