Assumptions, Givens, and Totals: BCA Analysis on Missouri Proposition C by James M. Holtzman:

Assumptions			**Justification/Data/Source**
Base Year	2010		
Time Horizon	2035	25 years	Average PV Panel Warranty Period
Discount Rate	0.04		Approximately 1% Higher Than the Current Average Rate of Inflation
Average Cost of Electricity Per Resident (No Increase for Inflation)	0.0688	$ Per kWh	U.S. Energy Information Administration (DOE)
Total Electrical Usage in Missouri in 2010	91,000,000	mWh	Total State Electricity Generation in 2010 (2.8% Per Year))
Percentage of Total Electrical Output by Investor Owned Utilites as Defined by Proposition C	0.75	75%	Language Taken from "Proposition C"
Estimated Electical Usage and Emissions Increase Per Year Over 25 Years	0.0225	Annually @ 2.25%	Estimate
Average Annual Total Capacity of Solar Generation in Missouri Over 25 Year	60	mW	Missouri Economic Impact Study of Proposition C ((2% of Total (3,000 mW) Over 25 Years)
Average Annual Total of Solar Generation in Missouri Over 25 Years	1,820,000	mWh	National Resources Defense Council (2% of Total Over 25 Years)
Operation and Maintenance Costs	6.67	$/kW	Interpolation from Assumptions based on Annual Energy Outlook 2009 (DOE) and Local Install Knowledge w/ CPD
Installed Costs of Total PV System	7,600	$ Per Installed kW (AC)	Clean Power Design (CPD) Proposal (Local St. Louis, MO. Design & Install Company)
Solar energy mWh	1000	kWh	Conversion Factor

Calculations:

GHG Emissions Saved in the First Year (2010) From Solar Generation:

CO_2	75,599,966(from EIA Chart) x 1.1%(increase from 2008 to 2010) x 2%(amount of solar)	1,663,199	Metric Tons (MT)	45 Per MT	$56,132,975	Interpolated from U.S. Energy Information Administration Data
NO_x	81,316(from EIA Chart) x 1.1%(increase from 2008 to 2010) x 2%(amount of solar)	1,789	Metric Tons (MT)	600 Per MT	$805,028	Interpolated from U.S. Energy Information Administration Data
SO_x	239,474(from EIA Chart) x 1.1%(increase from 2008 to 2010) x 2%(amount of solar)	5,268	Metric Tons (MT)	71.75 Per MT	$283,507	Interpolated from U.S. Energy Information Administration Data
				Total:	**$57,221,510**	

Annual Benefits

Retail Cash Value of Annual Solar Production		93,912,000
Cash Value of Annual Emissions Benefits		$57,221,510
	Total:	**$151,133,510**

Costs

Cost of Installation (Complete Installation Assumed First Year)	456,000,000
Annual O & M Costs	$400,200

Benefit-Cost Ratio: **6.71**
Net Benefits: **$2,642,825,808**

February 7, 2010

	Benefits			Costs				
Year	GHG	Electricity Generated	**Total Benefits**	Installation Costs	O & M Costs	**Total Costs**	Discounted Benefits	Discounted Costs
2010	$57,221,510	$93,912,000	$151,133,510	$456,000,000	$400,200	$456,400,200	$151,133,510	$456,400,200
2011	$58,508,994	$96,025,020	$154,534,014		$400,200	$400,200	$148,590,398	$384,808
2012	$59,825,447	$98,185,583	$158,011,030		$400,200	$400,200	$146,090,079	$370,007
2013	$61,171,519	$100,394,759	$161,566,278		$400,200	$400,200	$143,631,833	$355,776
2014	$62,547,879	$102,653,641	$165,201,519		$400,200	$400,200	$141,214,951	$342,093
2015	$63,955,206	$104,963,348	$168,918,553		$400,200	$400,200	$138,838,738	$328,935
2016	$65,394,198	$107,325,023	$172,719,221		$400,200	$400,200	$136,502,509	$316,284
2017	$66,865,567	$109,739,836	$176,605,403		$400,200	$400,200	$134,205,592	$304,119
2018	$68,370,043	$112,208,982	$180,579,025		$400,200	$400,200	$131,947,325	$292,422
2019	$69,908,369	$114,733,684	$184,642,053		$400,200	$400,200	$129,727,057	$281,175
2020	$71,481,307	$117,315,192	$188,796,499		$400,200	$400,200	$127,544,150	$270,361
2021	$73,089,636	$119,954,784	$193,044,420		$400,200	$400,200	$125,397,974	$259,962
2022	$74,734,153	$122,653,767	$197,387,920		$400,200	$400,200	$123,287,912	$249,964
2023	$76,415,672	$125,413,476	$201,829,148		$400,200	$400,200	$121,213,356	$240,350
2024	$78,135,024	$128,235,280	$206,370,304		$400,200	$400,200	$119,173,708	$231,106
2025	$79,893,062	$131,120,573	$211,013,636		$400,200	$400,200	$117,168,381	$222,217
2026	$81,690,656	$134,070,786	$215,761,442		$400,200	$400,200	$115,196,798	$213,670
2027	$83,528,696	$137,087,379	$220,616,075		$400,200	$400,200	$113,258,390	$205,452
2028	$85,408,092	$140,171,845	$225,579,937		$400,200	$400,200	$111,352,600	$197,550
2029	$87,329,774	$143,325,712	$230,655,485		$400,200	$400,200	$109,478,879	$189,952
2030	$89,294,694	$146,550,540	$235,845,234		$400,200	$400,200	$107,636,686	$182,646
2031	$91,303,824	$149,847,927	$241,151,751		$400,200	$400,200	$105,825,492	$175,621
2032	$93,358,160	$153,219,506	$246,577,666		$400,200	$400,200	$104,044,774	$168,867
2033	$95,458,719	$156,666,944	$252,125,663		$400,200	$400,200	$102,294,021	$162,372
2034	$97,606,540	$160,191,951	$257,798,491		$400,200	$400,200	$100,572,727	$156,127
Totals:	**$1,892,496,740**	**$3,105,967,537**	**$4,998,464,277**	**$456,000,000**	**$10,005,000**	**$466,005,000**	**$3,105,327,842**	**$462,502,035**