

Workshop Session for School Board of ISD 857

Monday, January 22, 2024 6:00 PM

Board & Public in HS Library/Remote viewing via ZOOM, 100 County Road 25 ,
Lewiston, MN 55952

I. Call Meeting to Order.

II. Pledge of Allegiance.

III. Quorum Call

**Baer
Daley
Koverman
Kreidermacher
Maki
Pringle
Sommer**

**IV. Information from Brok Johnson, Solar
Connection, Inc.**

V. FY25 Budget Adjustments

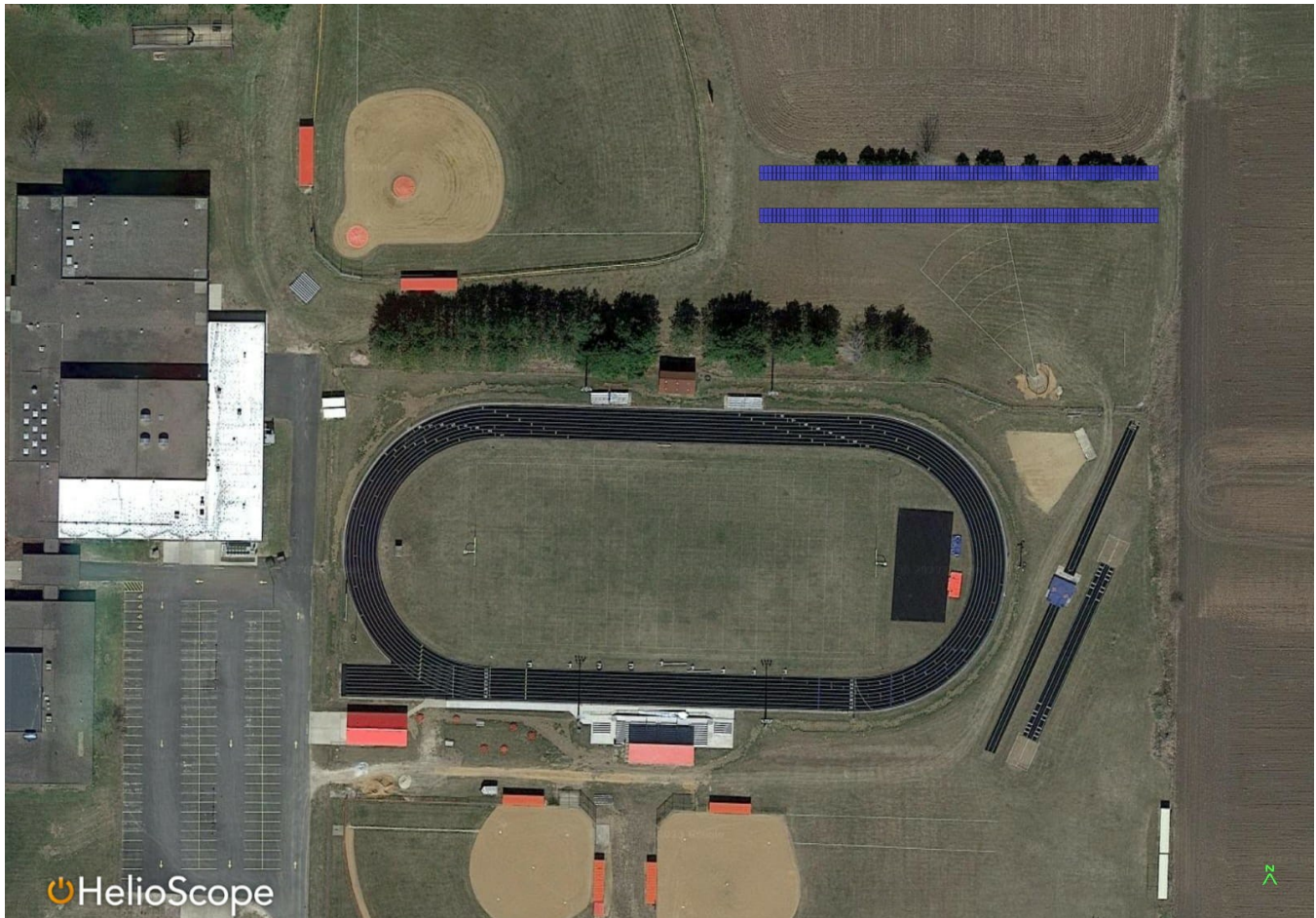
VI. Board Discussion on FY25 Budget Adjustments

VII. Next Steps for FY25 Budget Planning

VIII. Adjourn.

SOLAR CONNECTION

Solar Energy Design & Installation



218.5KW Ground Mount Solar

Lewiston-Altura
Schools

100 County Rd 25
Lewiston MN 55952

507-523-2191
gcarman@lewalt.k12.mn.us

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1 ABOUT US

SOLAR CONNECTION

The Region's most Trusted and Experienced Solar Provider!

MINNESOTA

6254 34th Ave. NW, Suite A
Rochester, MN 55901

WISCONSIN

920 10th Ave. North
Onalaska, WI 54650



Solar PV



Solar + Battery Storage



Solar + EV Chargers

OUR HISTORY

Solar Connection Inc. provides comprehensive design and financial analysis for commercial, municipal, Ag, and residential renewable energy projects. We pride ourselves on being the trusted experts our customers seek to reduce their energy costs, lower carbon emissions, and improve efficiencies. We specialize in providing turn-key solutions for solar PV, Energy Storage, and EV charging projects, as well as general electrical services.

Solar Connection Inc. is a licensed electrical contractor in MN, WI, and IA that employs engineers, electricians, installers, and project managers. Our vertical integration allows us to provide turn-key solutions while managing all aspects of your project in house, enhancing the overall customer experience. We set ourselves apart by being experts in our field, and providing honest sustainable energy options for each customer we engage with.

*** Proud to have completed the first 5 projects through the MN Solar for Schools program**

*** Preferred vendor on the state of MN master contract for solar installers**

OUR MISSION

Our mission is to transform the lives of our customers along with the communities we serve by providing sustainable energy options that provide economical and environmental benefits for generations to come. We accomplish this by a commitment to 5 core values:

***Integrity** - We always do the right thing

***Custodians** - We are committed to the safety and wellness of our team, and the greater good of our communities

***Accountability** - We don't walk past a problem, and we accept responsibility

***Relationships** - We are committed to developing long-term partnerships with our team, partners and communities

***Excellence** - We are never satisfied as we strive to deliver the highest quality products and services every day

2 PROJECT PORTFOLIO



IBI Data

System Rating: 49 kW DC

Estimated 30 Year Savings:
Over \$200,000 and equivalent to offsetting over 3,000,000 lbs. of coal burned

Location: Brownsdale, MN

PROVEN TRACK RECORD & A 5-STAR CUSTOMER RATING



Hamilton Elementary

System Rating: 97.8 kW DC

Estimated 30 Year Savings:
Over \$300,000 and equivalent to offsetting over 250,000 gallons of gasoline consumed

Location: La Crosse, WI



Torrance Casting

System Rating: 416.8 kW DC

Estimated 30 Year Savings:
Over \$1.2 million and equivalent to offsetting over 24,000 barrels of oil consumed

Location: La Crosse WI



Hentges Glass

System Rating: 39.7 kW DC

Estimated 30 Year Savings:
Over \$200,000 and equivalent to the CO2 offset of planting over 1,500 trees

Location: Byron, MN

3 PROJECT SUMMARY

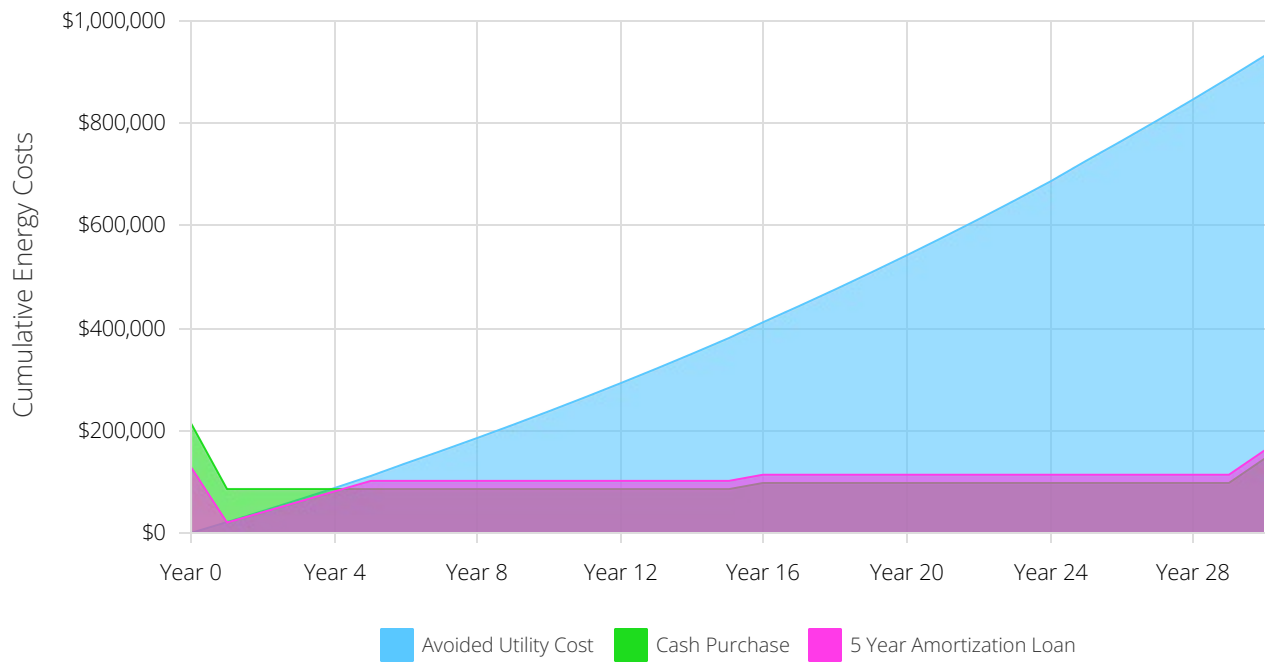
Payment Options	Cash Purchase	5 Year Amortization Loan
IRR - Term	21.8%	29.1%
LCOE PV Generation	\$0.010 /kWh	\$0.012 /kWh
Net Present Value	\$328,799	\$326,337
Payback Period	3.9 Years	-
Total Payments	\$428,260	\$444,369
Total Incentives	\$342,608	\$342,608
Net Payments	\$85,652	\$101,761
Electric Bill Savings - Term	\$932,457	\$932,457
Upfront Payment	\$428,260	\$342,608
Loan Term	-	5 Years

COMBINED SOLAR PV RATING	
Power Rating:	218.5 kW-DC
Power Rating:	180.0 kW-AC

COMBINED ESS RATINGS

Energy Capacity: 0.0 kWh
 Power Rating: 0.0 kW

CUMULATIVE ENERGY COSTS BY PAYMENT OPTION



4.1.1 PV SYSTEM DETAILS

GENERAL INFORMATION

Facility: Meter #1
 Address: 100 County Rd 25 Lewiston MN 55952

SOLAR PV EQUIPMENT DESCRIPTION

Solar Panels: (380) VSUN VSUN575N-144BMH-DG
 Inverters: (3) Solectria PVI 60kW-480

SOLAR PV EQUIPMENT TYPICAL LIFESPAN

Solar Panels: Greater than 30 Years
 Inverters: 15 Years

Solar PV System Cost and Incentives

Solar PV System Cost	\$428,260
Incentive Amount	-\$214,130
30% Direct Pay	-\$128,478

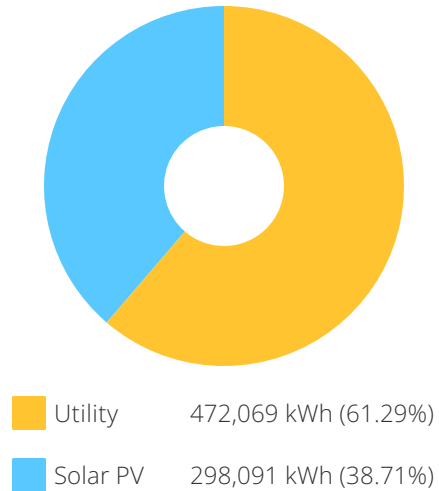
Net Solar PV System Cost \$85,652

SOLAR PV SYSTEM RATING

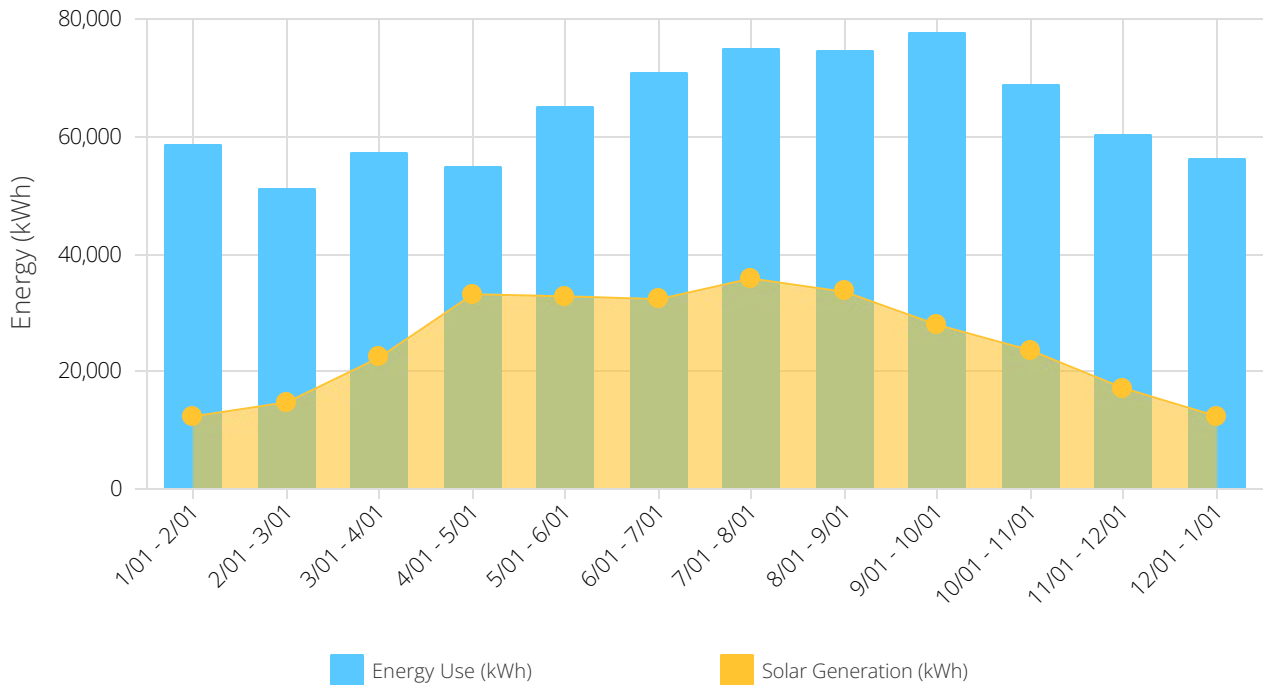
Power Rating: 218,500 W-DC

ENERGY CONSUMPTION MIX

Annual Energy Use: 770,160 kWh



MONTHLY ENERGY USE VS SOLAR GENERATION



4.1.2 REBATES & INCENTIVES

This section summarizes all incentives available for this project. The actual rebate and incentive amounts for this project are shown in each example.

Solar for Schools Grant

The MN State Solar for Schools grant will issue you a grant in the form of a reimbursement for up to 70% of the total cost of the solar project depending on your ANTC/APU value.

Total Incentive Value: \$214,130

30% Elective Pay - Solar for Schools

Per the federal government Elective Pay incentive via the Inflation Reduction Act you are eligible to receive 30% of out of pocket costs in a federal rebate. The 30% rebate is applied to the total cost of the project, however the cumulative incentive between solar for schools grant and the 30% rebate cannot exceed the total cost of the project.

Total Incentive Value: \$128,478

4.1.3 CURRENT ELECTRIC BILL

The table below shows your annual electricity costs based on the most current utility rates and your previous 12 months of electrical usage.

RATE SCHEDULE: MiEC - Small Commercial

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
			Other	Energy	Demand	Total
1/1/2023 - 2/1/2023 S1	58,400	172	\$120	\$3,738	\$1,677	\$5,535
2/1/2023 - 3/1/2023 S1	51,200	155	\$108	\$3,277	\$1,511	\$4,896
3/1/2023 - 4/1/2023 S1	57,200	157	\$120	\$3,661	\$1,531	\$5,312
4/1/2023 - 5/1/2023 S1	54,720	239	\$116	\$3,502	\$2,330	\$5,948
5/1/2023 - 6/1/2023 S1	65,000	275	\$120	\$4,160	\$2,681	\$6,961
6/1/2023 - 7/1/2023 S1	70,800	308	\$116	\$4,531	\$3,003	\$7,650
7/1/2023 - 8/1/2023 S1	75,000	300	\$120	\$4,800	\$2,925	\$7,845
8/1/2023 - 9/1/2023 S1	74,720	266	\$120	\$4,782	\$2,594	\$7,496
9/1/2023 - 10/1/2023 S1	77,680	288	\$116	\$4,972	\$2,808	\$7,896
10/1/2023 - 11/1/2023 S1	68,880	284	\$120	\$4,408	\$2,769	\$7,297
11/1/2023 - 12/1/2023 S1	60,320	240	\$116	\$3,860	\$2,340	\$6,317
12/1/2022 - 1/1/2023 S1	56,240	168	\$120	\$3,599	\$1,638	\$5,357
Total	770,160	-	\$1,413	\$49,290	\$27,807	\$78,510

4.1.4 NEW ELECTRIC BILL

RATE SCHEDULE: MiEC - Small Commercial

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2023 - 2/1/2023 S1	46,056	167	\$120	\$2,992	\$1,628	\$4,740
2/1/2023 - 3/1/2023 S1	36,440	146	\$108	\$2,403	\$1,424	\$3,935
3/1/2023 - 4/1/2023 S1	34,866	143	\$120	\$2,383	\$1,394	\$3,897
4/1/2023 - 5/1/2023 S1	21,577	155	\$116	\$1,668	\$1,511	\$3,295
5/1/2023 - 6/1/2023 S1	32,206	184	\$120	\$2,250	\$1,794	\$4,164
6/1/2023 - 7/1/2023 S1	38,493	283	\$116	\$2,645	\$2,759	\$5,520
7/1/2023 - 8/1/2023 S1	39,185	264	\$120	\$2,788	\$2,574	\$5,482
8/1/2023 - 9/1/2023 S1	41,188	242	\$120	\$2,771	\$2,360	\$5,251
9/1/2023 - 10/1/2023 S1	49,729	236	\$116	\$3,354	\$2,301	\$5,771
10/1/2023 - 11/1/2023 S1	45,314	246	\$120	\$3,025	\$2,399	\$5,543
11/1/2023 - 12/1/2023 S1	43,135	213	\$116	\$2,890	\$2,077	\$5,083
12/1/2022 - 1/1/2023 S1	43,879	166	\$120	\$2,899	\$1,619	\$4,637
Total	472,068	-	\$1,413	\$32,068	\$23,839	\$57,319

ANNUAL ELECTRICITY SAVINGS: \$21,191

5.1 Cash Purchase

Assumptions and Key Financial Metrics

IRR - Term	21.8%	Net Present Value	\$328,799	Payback Period	3.9 Years
ROI	367.4%	PV Degradation Rate	0.45%	Discount Rate	5.0%
Energy Cost Escalation Rate	3.0%	Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%
Total Project Costs	\$428,260				

Years	Project Costs	O&M / Equipment Replacement	Decommissioning Costs	Incentive Amount	30% Direct Pay	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$428,260	-	-	\$214,130	-	-	-\$214,130	-\$214,130
1	-	-	-	-	\$128,478	\$21,191	\$149,669	-\$64,461
2	-	-	-	-	-	\$21,728	\$21,728	-\$42,733
3	-	-	-	-	-	\$22,279	\$22,279	-\$20,454
4	-	-	-	-	-	\$22,843	\$22,843	\$2,389
5	-	-	-	-	-	\$23,421	\$23,421	\$25,810
6	-	-	-	-	-	\$24,013	\$24,013	\$49,823
7	-	-	-	-	-	\$24,620	\$24,620	\$74,442
8	-	-	-	-	-	\$25,241	\$25,241	\$99,683
9	-	-	-	-	-	\$25,877	\$25,877	\$125,561
10	-	-	-	-	-	\$26,529	\$26,529	\$152,090
11	-	-	-	-	-	\$27,197	\$27,197	\$179,287
12	-	-	-	-	-	\$27,881	\$27,881	\$207,168
13	-	-	-	-	-	\$28,581	\$28,581	\$235,749
14	-	-	-	-	-	\$29,299	\$29,299	\$265,048
15	-	-	-	-	-	\$30,033	\$30,033	\$295,082
16	-	-\$12,000	-	-	-	\$30,786	\$18,786	\$313,867
17	-	-	-	-	-	\$31,556	\$31,556	\$345,424
18	-	-	-	-	-	\$32,346	\$32,346	\$377,770
19	-	-	-	-	-	\$33,154	\$33,154	\$410,923
20	-	-	-	-	-	\$33,981	\$33,981	\$444,904
21	-	-	-	-	-	\$34,828	\$34,828	\$479,732
22	-	-	-	-	-	\$35,696	\$35,696	\$515,428
23	-	-	-	-	-	\$36,584	\$36,584	\$552,012
24	-	-	-	-	-	\$37,493	\$37,493	\$589,505
25	-	-	-	-	-	\$38,424	\$38,424	\$627,929
26	-	-	-	-	-	\$39,377	\$39,377	\$667,306
27	-	-	-	-	-	\$40,353	\$40,353	\$707,659
28	-	-	-	-	-	\$41,352	\$41,352	\$749,010
29	-	-	-	-	-	\$42,374	\$42,374	\$791,384
30	-	-	-\$48,000	-	-	\$43,420	-\$4,580	\$786,805
Totals:	-\$428,260	-\$12,000	-\$48,000	\$214,130	\$128,478	\$932,457	\$786,805	-

5.2 5 Year Amortization Loan

Assumptions and Key Financial Metrics

PV Degradation Rate	0.45%	Energy Cost Escalation Rate	3.0%	Federal Income Tax Rate	0.0%
State Income Tax Rate	0.0%	Interest Rate	7%	Total Project Cost	\$428,260
Upfront Payment	\$342,608	Loan Term	5 Years		

Years	Financing Payments	O&M / Equipment Replacement	Decommissioning Costs	Incentive Amount	30% Direct Pay	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$342,608	-	-	\$214,130	-	-	-\$128,478	-\$128,478
1	-\$20,352	-	-	-	\$128,478	\$21,191	\$129,317	\$839
2	-\$20,352	-	-	-	-	\$21,728	\$1,376	\$2,215
3	-\$20,352	-	-	-	-	\$22,279	\$1,927	\$4,141
4	-\$20,352	-	-	-	-	\$22,843	\$2,491	\$6,632
5	-\$20,352	-	-	-	-	\$23,421	\$3,069	\$9,701
6	-	-	-	-	-	\$24,013	\$24,013	\$33,714
7	-	-	-	-	-	\$24,620	\$24,620	\$58,334
8	-	-	-	-	-	\$25,241	\$25,241	\$83,575
9	-	-	-	-	-	\$25,877	\$25,877	\$109,452
10	-	-	-	-	-	\$26,529	\$26,529	\$135,981
11	-	-	-	-	-	\$27,197	\$27,197	\$163,178
12	-	-	-	-	-	\$27,881	\$27,881	\$191,059
13	-	-	-	-	-	\$28,581	\$28,581	\$219,641
14	-	-	-	-	-	\$29,299	\$29,299	\$248,939
15	-	-	-	-	-	\$30,033	\$30,033	\$278,973
16	-	-\$12,000	-	-	-	\$30,786	\$18,786	\$297,759
17	-	-	-	-	-	\$31,556	\$31,556	\$329,315
18	-	-	-	-	-	\$32,346	\$32,346	\$361,661
19	-	-	-	-	-	\$33,154	\$33,154	\$394,814
20	-	-	-	-	-	\$33,981	\$33,981	\$428,795
21	-	-	-	-	-	\$34,828	\$34,828	\$463,624
22	-	-	-	-	-	\$35,696	\$35,696	\$499,319
23	-	-	-	-	-	\$36,584	\$36,584	\$535,903
24	-	-	-	-	-	\$37,493	\$37,493	\$573,396
25	-	-	-	-	-	\$38,424	\$38,424	\$611,820
26	-	-	-	-	-	\$39,377	\$39,377	\$651,197
27	-	-	-	-	-	\$40,353	\$40,353	\$691,550
28	-	-	-	-	-	\$41,352	\$41,352	\$732,902
29	-	-	-	-	-	\$42,374	\$42,374	\$775,276
30	-	-	-\$48,000	-	-	\$43,420	-\$4,580	\$770,696
Totals:	-\$444,369	-\$12,000	-\$48,000	\$214,130	\$128,478	\$932,457	\$770,696	-

6 ENVIRONMENTAL BENEFITS

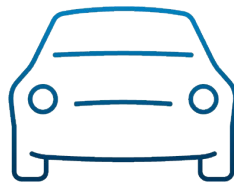


OVER THE NEXT 30 YEARS, YOUR SYSTEM WILL DO MORE THAN JUST SAVE YOU MONEY. ACCORDING TO THE EPA'S GREENHOUSE GAS EQUIVALENCIES CALCULATOR <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>, YOUR SOLAR PV SYSTEM WILL HAVE THE IMPACT OF REDUCING:



7,005

lbs of CO2 Offset



15,927,747

Miles Driven By Cars



105,077

Trees Planted