



**Board of Education - Facilities Committee Meeting  
Northwood Middle School  
945 North Ave.  
Highland Park, IL 60035**

**Tuesday, August 27, 2024 5:45 PM**

**Agenda**

**Mission Statement**

*The mission of North Shore School District 112, a community partnership committed to a world-class education, is to nurture every child to become an inspired learner, a well-rounded individual and contributing member of a global community by striving for excellence within an environment that fosters innovation, respect, engagement and intellectual inquiry*

1. **5:45 p.m. - Board Tour of Indian Trail School at 2075 St. Johns, Highland Park**
  - a. Call to Order
  - b. Approve Agenda
  - c. Tour School Construction (Wight/Gilbane)
2. **7:00 p.m. at Northwood Middle School, 945 North Ave., Highland Park**
  - a. Discussion of Phase 2 Construction
    - i. Timeline and Budgetary Discussion Phase 2 Projects (Wight/Gilbane)
    - ii. Discussion on Solar Power at Edgewood and Oak Terrace
    - iii. Discussion Geo-Thermal and Solar (Trane & Baker Tilly)
      1. Geo Thermal - Ravinia, Sherwood, Wayne Thomas
      2. Inflation Reduction Act - Braeside HVAC
      3. Solar - Sherwood & Wayne Thomas
3. Public Comments
4. Other
5. Adjournment



NSSD 112  
 NORTH SHORE SD 112 - LONG RANGE FACILITY PLANNING - PHASE 2  
 Program Estimate  
 Highland Park, IL

R16.0

ESTIMATE TRACKING

August 27, 2024

BUILDING - DESCRIPTION	CONSTRUCTION START	BASE BUDGET (\$M)	BASE BUDGET (\$M)	BASE BUDGET (\$M)	BASE BUDGET (\$M)	BASE BUDGET (\$M)	BASE BUDGET (\$M)	BASE BUDGET (\$M)	BASE BUDGET (\$M)
		R5 - July 12, 2022	R8 - January 30, 2023	R9 - April 8, 2023	R10 - June 13, 2023	R12 - Nov. 03, 2023	R14 - Apr. 17, 2024	R15 - May 3, 2024	R16 - August 7, 2024
Ravinia - Renovation & Expansion	Start 2024	28.0	31.0	38.9	35.9	36.1	36.0	36.0	36.0
Indian Trail - Renovation	Start 2023	26.3	26.8	31.0	26.3	25.8	25.8	25.8	25.8
New Central Kitchen - Indian Trail Campus	Start 2023	4.6	4.3	4.6	0.0	0.0	0.0	0.0	0.0
Sherwood - Renovation & Expansion	Start 2024	28.8	28.5	29.0	32.5	32.9	31.3	31.3	29.6
Wayne Thomas - Renovation	Start 2026	20.1	20.7	20.7	22.8	24.9	24.3	24.3	22.4
Braeside - Renovation	Start 2025	16.3	15.8	15.8	16.5	21.9	22.5	22.5	20.3
<b>TOTAL PROJECT COST</b>		<b>\$124.1M</b>	<b>\$127.1M</b>	<b>\$144.5M</b>	<b>\$135.7M</b>	<b>\$141.5M</b>	<b>\$139.9M</b>	<b>\$139.9M</b>	<b>\$134.1M</b>
Ravinia - Reroof Building (Not in initial referendum budget)		0.0	0.0	4.5	0.0	4.7	5.1	5.1	5.1
Northwood - Kitchen Upgrades		0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9
Edgewood - Kitchen Upgrades		0.0	0.0	0.0	0.8	0.8	0.8	0.8	0.8
Indian Trail - Out of Scope Changes		0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
Sherwood - Reroof Building Scope (Added back to Referendum Scope)		0.0	0.0	0.0	0.0	0.0	1.2	1.2	0.0
Wayne Thomas - Reroof Building Scope (Added back to Referendum Scope)		0.0	0.0	0.0	0.0	0.0	1.7	1.7	0.0
Braeside - Reroof Building Scope (Added back to Referendum Scope)		0.0	0.0	0.0	0.0	0.0	1.8	1.8	0.0
Sherwood - HVAC Mechanical System Scope (Removed from Referendum Scope)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Braeside - HVAC Mechanical System Scope (Removed from Referendum Scope)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Wayne Thomas - HVAC Mechanical System Scope (Removed from Referendum Scope)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6

NOTES/COMMENTS:

- Total project cost includes direct and indirect construction costs, escalation, contingencies, and owner costs.
- Total Project costs at 8/26/24 include removal of HVAC mechanical system scope from Sherwood, Wayne Thomas, and Braeside from Referendum Budget, valued at \$10.5M
- Total Project costs at 8/26/24 include adding reroofing scope from Sherwood, Wayne Thomas, and Braeside into Referendum Budget, valued at \$4.7M
- Total Project costs at 2/12/24 include removal of reroofing scope from Sherwood, Wayne Thomas, and Braeside. Note that the values seen here do not include complete reroofing of the existing schools
- Total project costs at 4/8/23 include reroofing of the existing Ravinia Building, which was not originally in the Referendum Budget, valued at \$4.5M
- Total project costs at 6/13/23 exclude the reroofing of the existing Ravinia building, as well as the removal of the Central Production Kitchen from the scope. Total project costs at 6/13/23 includes kitchen upgrades for Northwood and Edgewood Schools to accommodate food service scope changes.
- Total project costs at 6/13/23 have been updated to current market conditions and accepted Value Engineering made to date, as well as these impacts on future schools Indian Trail Costs at 6/13 include bid results of bid packages opened as of 6/12/23, R11 includes all Indian Trail Bid Results
- Total Project costs at 12/11/23 include complete bid results for Ravinia re-bid, as well as current SD estimates with accepted VE and schedules for Sherwood, Braeside, and Wayne Thomas
- Total Project costs at 11/3/23 include opened bid results as of 10/20 for the Ravinia re-bid, as well as current SD estimates for Sherwood, Braeside, and Wayne Thomas

DRAFT



# North Shore School District 112 Construction Schedule



	2024												2025												2026												2027											
	2nd Qtr			3rd Qtr			4th Qtr			1st Qtr			2nd Qtr			3rd Qtr			4th Qtr			1st Qtr			2nd Qtr			3rd Qtr			4th Qtr																	
	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D			
INDIAN TRAIL	Construction Activity (Jul 23 - Sep 24)									★ Nov 24																																						
RAVINIA	Construction Activity (Dec 23 - May 25)												★ Aug 25																																			
SHERWOOD	Design			Bid/Award			Construction Activity (Feb 25 - May 26)												★ Aug 26																													
BRAESIDE	Design						Bid/Award			Construction Activity (Aug 25 - Nov 26)												★ Jan 27																										
WAYNE THOMAS	Design						Bid/Award			Construction Activity (Jul 26 - Sep 27)												★ Nov 28																										
ELM PLACE	Students from Indian Trail						Students from Sherwood												Students from Wayne Thomas																													
GREEN BAY SCHOOL	Students from Ravinia						Students from Braeside																																									

★ Students return to school

**Sherwood**  
 50% DD - 3.25.24  
 100% DD - 4.26.24  
 50% CD - 6.28.24  
 90% CD - 8.15.24  
 100% CD - 8.29.24  
 Out to Bid - 9.23.24  
 Bid Opening - 10.24.24  
 Facility Meeting - 11.12.24  
 Board Meeting - 11.19.24  
 Construction Begin - 2.3.25

**Edgewood/Northwood Kitchen**  
 Out to Bid - 9.23.24  
 Bid Opening - 10.24.24  
 Facility Meeting - 11.12.24  
 Board Meeting - 11.19.24  
 Construction Begin - 6.6.25

**Braeside**  
 Design - Sep 24 - Apr 25  
 Out to Bid - Apr/May 25  
 Bid Opening - May/June 25  
 Facility/Board Meeting - Jun 25  
 Construction Begin - Aug 25

**Wayne Thomas**  
 Design - May 25 - Jan 26  
 Out to Bid - Jan/Feb 26  
 Bid Opening - Feb/Mar 26  
 Facility/Board Meeting - Mar 26  
 Construction Begin - Jun/Jul 26

**DRAFT**



## NSSD 112 - Edgewood Middle School

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AUGUST 26, 2024

### PRELIMINARY PROPOSAL

Proposal No: 230102.01-02

*Contact:*

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Project Development Manager  
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# Project Goals

Based on our initial engagement, we identified two primary goals for this potential solar project:

- 1.) Reduce Energy Costs. Reduce electrical costs by using solar to supplement a portion of your facility's current electrical needs, also providing a hedge against future rate increases.
- 2.) Optimize Return on Investment. Optimize return on investment by establishing a design concept that has the best ratio between investment and future benefit.

With your financial and social mission goals in mind, our project developers completed an initial review of your current energy usage, energy rates, and site conditions as a first step to determining an appropriate system size, placement, and the associated system costs and long-term benefits that solar can provide.

## Initial Analysis of Current Situation

Site Name & Location	Current Electrical Consumption Profile	
Edgewood Middle School	Consumption	1,342,000 kWh/yr
929 Edgewood Rd	Expense	\$152,090/yr
Highland Park, Illinois 60035	Blended Utility Rate (\$/kWh)	\$0.113/kWh
	CO <sub>2</sub> Emissions (est.)	1,020 tons/yr

Your site located at 929 Edgewood Rd in Highland Park, Illinois was evaluated using aerial imagery to assess potential areas for solar. Setback requirements, relevant codes, meter location, existing obstructions, and shading considerations were incorporated into the model's design constraints. This analysis informs the site's overall potential for solar size.

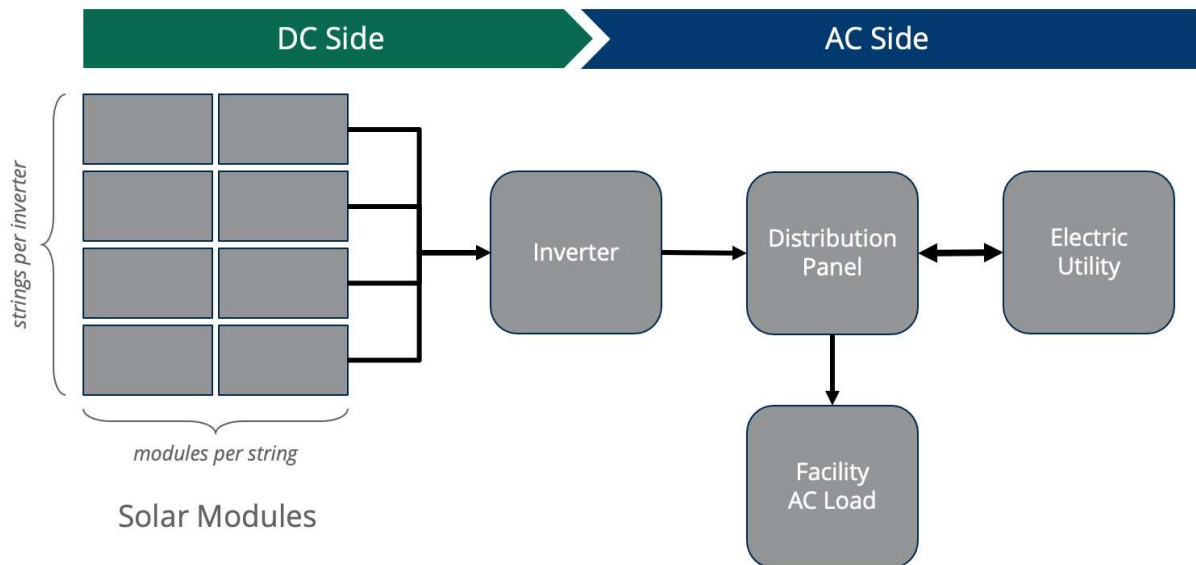
The provided electrical information indicated an estimated 1,342,000 kWh/year of energy consumption. The site's estimated cost of energy is \$152,090 per year and a blended (average) rate of \$0.113/kWh. This combined with ComEd's solar interconnection's policy, and your goals, provided a basis for an initially proposed system size and concept.

The Environmental Protection Agency (EPA) publishes publicly available relationships between the amount of electricity consumed and the amount of carbon dioxide emitted, based on the country's current mix of fuel sources and reliance on fossil fuels. Based on this, the facility contributes an estimated 1,020 tons per year of carbon dioxide to the atmosphere. While this is not atypical, it demonstrates the impact of our current energy consumption and the opportunity for improvement with solar.

ComEd does provide a net metering program up to 2,000 kWac of system size. Net metering is a program that provides full retail rate compensation for surplus energy delivered to the grid during times when the solar system may be producing more electricity than the facility's current demand. This program can economically justify solar being a larger share of the overall energy mix than would otherwise be appropriate. This program was considered when initially sizing the solar system.

## SunPeak Standard System Architecture

All grid-connected solar systems are comprised of two electrical sides: DC and AC. Solar modules (panels) generate direct current (DC) electricity. To convert DC into a form usable by the facility (and compatible with the electrical grid) a component named an inverter is installed to output alternating current (AC). The inverter is the central building block to each subsystem. Once a subsystem architecture has been established, the general system size can be achieved by scaling the number of inverters/subsystems.



The module wattage (Wp) and number of solar modules determines the DC capacity (kWdc) of the system. This capacity is directly proportional to the amount of annual energy the system will produce and is the most important metric when discussing system size. The AC capacity (kWac) of the system is determined by the inverter nameplate capacity and the number of inverters in the system. AC capacity is most often discussed in the context of utility interconnection and occasionally financial incentive calculations.

The DC capacity (kWdc) is sized larger than the AC capacity (kWac), leading to the DC:AC ratio. Optimization of this ratio allows effective utilization of the inverter, important for value engineering.

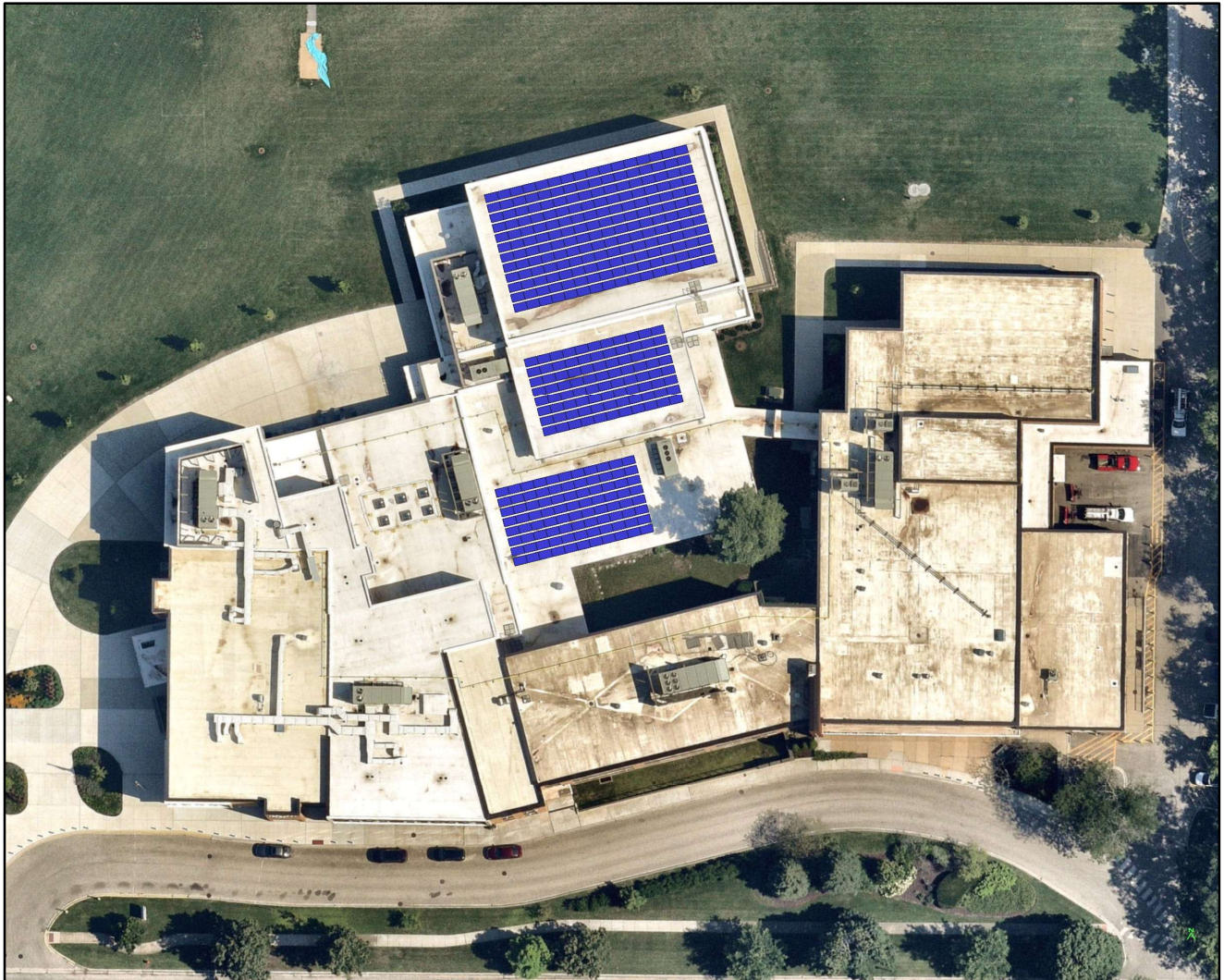
SunPeak's design philosophy is centered on providing the best long-term value, which includes both an efficient upfront installation as well as reduced operating and maintenance costs over the life of the system. Also, a holistic design approach considers all the factors that contribute to the "performance to cost ratio," including system efficiency and material, labor and soft cost considerations.

SunPeak has engineered and adopted a standardized system architecture for all of its projects. By doing so, project-specific engineering needs are reduced, supply channels are simplified and overall system reliability is improved. SunPeak's system architecture contains the highest quality equipment components from the world's leading solar manufacturers.

# Preliminary System Sizing & Layout

This solar design concept is preliminary based on initial information received from you and our initial efforts. We expect through continued interaction with you that this concept will evolve once additional details are addressed. Once our detailed site assessment is fully incorporated and additional analysis complete, a final design concept will be established and presented to you.

DC		AC		
368 modules	<b>151 kWdc</b>	1.21 DC/AC	125 kWac	2 inverters

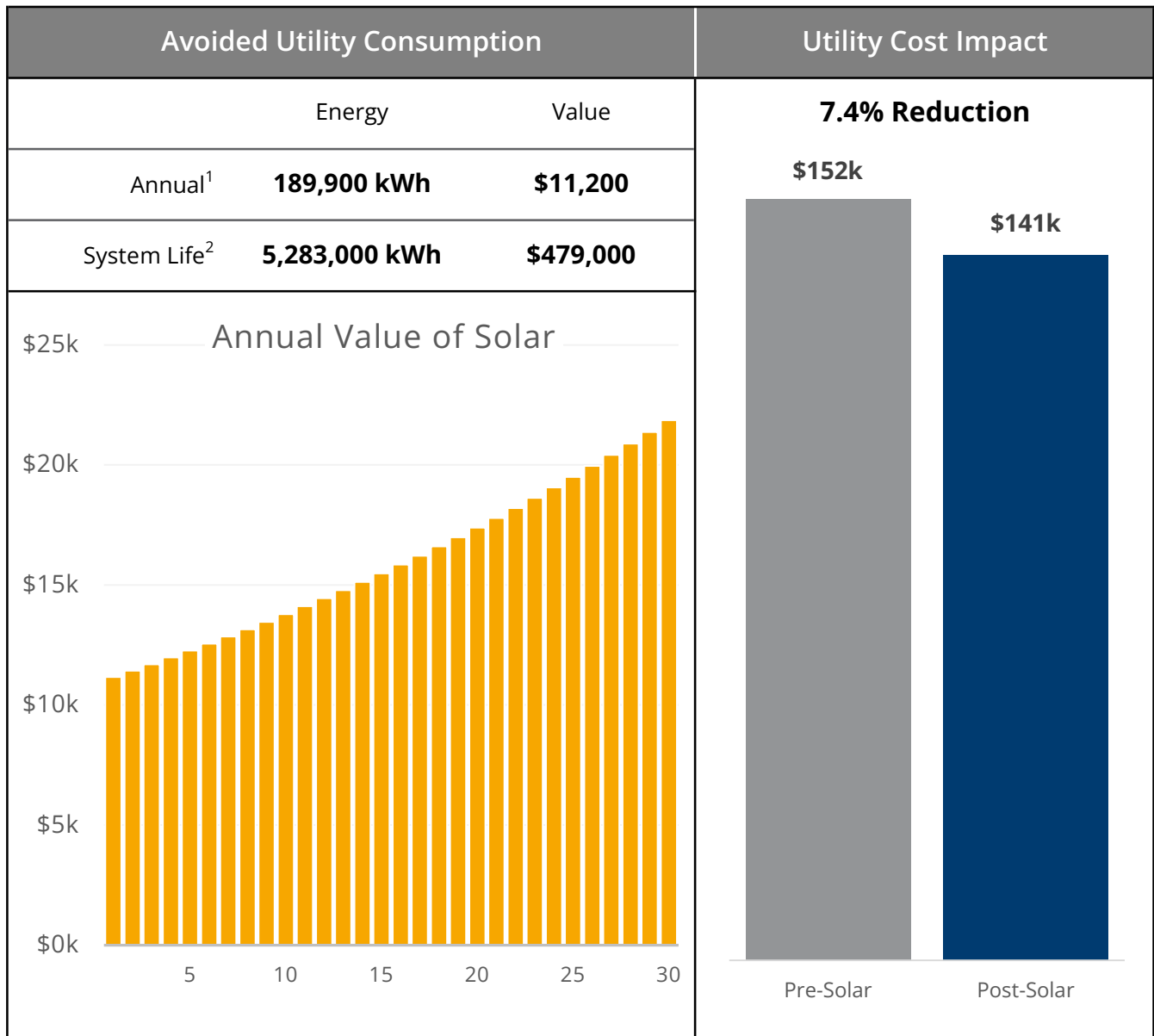


# Solar Energy Impact

## Reducing Your Utility Costs

The energy produced by your new solar system will directly reduce the energy required from your utility. With the current system size of 151 kWdc, utility electrical consumption will decrease by 189,900 kWh per year, or approximately 14.1%. Using a current estimate of \$0.059/kWh utility rate, this equates to annual savings of \$11,200.

These annual savings will accumulate over time at an increasing rate due to expected continued inflation in the cost of utility rates. Over the past 20 years, utility rates have risen annually by about 2.9%. If this rate continues in the future, the total reduction in utility costs will total \$479,000.



1.) First year energy production and estimated value. Module degradation and inflation will influence subsequent years.

2.) Module degradation of -0.5% and assumed utility rate inflation of 2.9% included in 30-year lifespan.

## Investment Overview

### Available Incentives & Net Investment

SunPeak is a full turnkey integrator of solar systems. Our pricing reflects the total cost to engineer, construct, and commission the project. Beyond the future energy cost savings, additional tax and cash incentives are available, which are detailed below:

	\$	\$/kWdc
<b>System Price</b>	<b>307,500</b>	<b>2,038</b>
Federal Investment Tax Credit (ITC)	(92,250)	(611)
ComEd DG Rebate	(37,700)	(250)
<b>Net Investment at Year 1</b>	<b>177,550</b>	<b>1,177</b>
Illinois Shines Contract - Group B	(168,077)	(1,114)
<b>Lifetime Net Investment</b>	<b>9,473</b>	<b>63</b>

**System Price.** This is the preliminary total turnkey cost to install the system, which includes engineering, materials, labor, permitting and utility management. Final system quotation will be established after site assessment and detailed conceptual design.

**Federal Investment Tax Credit (ITC).** Since your organization is a non-tax entity, the project qualifies for an elective payment from the federal government equal to 30.0% of the system price. You must separately register the project with the IRS prior to being granted the elective payment.

**ComEd DG Rebate.** ComEd offers a Distributed Generation Rebate equal to \$250/kWdc, which is paid in full after system commissioning. Redemption of this rebate typically requires forgoing full net metering benefits.

**Net Investment at Year 1.** The system investment after all rebates and incentives that can be gained in the first year after the system is commissioned.

**Illinois Shines Contract - Group B.** This program (also known as the Adjustable Block Program) offers payments for the Solar Renewable Energy Credits (SRECs) generated by your system. Contract amount is based on forecasted energy production in first 15 years of system life, and is paid out over first 6 years.

**Lifetime Net Investment.** The net final system investment, including both contributed capital and financial incentives available. Does not include any electrical cost savings, which is treated elsewhere as the payback on net investment. Does not include O&M costs.

## Project Financing

### Customer-Owned + Cash Financed

The simplest option is to own the system outright and finance with 100% equity. All available tax and financial incentives are retained by the system owner. In the below table, net installation cash flow is noted using positive figures to indicate cash flowing in and negative figures to indicate cash flowing out.

<b>Installation Cash Flow</b>	<b>\$</b>
System Price	(307,500)
Federal Investment Tax Credit (ITC)	92,250
ComEd DG Rebate	37,700
Net Cash Flow after Incentives	(177,550)

The above table does not include any value the system produces while in operation, and is limited only to the installation cash flow up to the point of system operation. Various return on investment metrics follow:

Net Cash Flow after Incentives <b>(\$177,550)</b>	Calculated in above table, the net cash flow at installation time. Positive (negative) values indicate positive (negative) net cash flow.
Net Annual Cash Flow <b>\$37,800</b>	Annual value of avoided utility costs and operating financial incentives that may be available. 5-year average. For specific annual figures, see next page.
Avoided Utility Cost <b>\$479,000</b>	Projected lifetime value of energy the solar system will offset, based on a 1st year solar value rate of \$0.059/kWh and 2.90%/yr. in forecasted inflation.
Net Investment <b>\$9,473</b>	Net lifetime cost of system, including all capital investments, net of tax and financing incentives available.
Lifetime Energy Production <b>5,283,000 kWh</b>	Amount of energy the system is forecasted to generate in its first 30 years of operation, including impact of module degradation of -0.5%.
Simple Payback <b>4.7 years</b>	Timeframe (in years) system needs to operate to fully repay Net Cash Flow at Installation. Based on annual operating cash flow, detailed on next page.
Internal Rate of Return (IRR) <b>16.1%</b>	Based on Net Cash Flow at Installation and subsequent Annual Cash Flows during operation, estimates the annual rate of return of the investment.
Return on Net Investment (ROI) <b>5,055%</b>	Lifetime Avoided Utility Cost (benefit) divided by Net Investment (cost). Simple benefit-to-cost ratio. Disregards time value of money.
SunPeak Cost of Energy (SCOE) <b>\$0.002/kWh</b>	Simple proxy for average cost of electricity generate by solar system over its projected 30-year lifetime. Net Investment (\$) divided by Lifetime Energy Production yields units of \$/kWh, comparable to utility rate units.

# Project Financing

## Customer-Owned + Cash Financed (con'd)

The following table details the system pro forma for a customer-owned system, financed with 100% equity (no debt). The Installation timeframe is considered Year 0, and subsequent Year 1-30 associate with the projected operating years of the system during its useful life.

### System Pro Forma: Energy, Solar Value and Cash Flows

*all units in thousands of dollars (\$), except solar energy (MWh)*

	Year	Solar Energy (MWh)	Value of Solar (\$k)	SRECs (\$k)	Annual Cash Flow (\$k)	Cum Cash Flow (\$k)
<b>Installation</b>	0				(178)	(178)
	1	190	11	32	43	(135)
	2	189	11	25	36	(99)
	3	188	12	25	36	(62)
	4	187	12	25	37	(26)
	5	186	12	25	37	11
	6	185	13	25	37	49
	7	184	13		13	61
	8	183	13		13	75
	9	182	13		13	88
	10	181	14		14	102
<b>Operation</b>	11	180	14		14	116
	12	179	14		14	130
	13	178	15		15	145
	14	178	15		15	160
	15	177	15	13	29	189
	16	176	16		16	205
	17	175	16		16	221
	18	174	17		17	237
	19	173	17		17	254
	20	172	17		17	272
	21	171	18		18	290
	22	170	18		18	308
	23	169	19		19	326
	24	168	19		19	345
	25	167	19		19	365
	26	166	20		20	385
	27	165	20		20	405
	28	164	21		21	426
	29	163	21		21	448
	30	162	22		22	469
	<b>Total</b>	<b>5,283</b>	<b>479</b>	<b>168</b>	<b>469</b>	

# System Operations

## Monitoring Your Solar Energy Production

A fully integrated performance monitor is included with your SunPeak solar system, allowing you to gather useful energy production metrics over time and validate return on investment. Additionally, SunPeak will provide you with an online access portal that can be used to showcase visually the system's benefit to your customers, employees or other stakeholders.

SunPeak's operations and maintenance team also monitors the status of the system's performance. If any issues or power disruptions arise, the platform automatically generates a notification so that support can be provided efficiently via SunPeak's Operations & Maintenance plan.



*Dashboard can be accessed via:*

- ✓ Monitor in lobby or conference room,
- ✓ Any desktop or laptop computer,
- ✓ Any tablet or smartphone,
- ✓ Integrated with energy management,
- ✓ Corporate website.

*SunPeak Integrated Performance Monitoring provides:*

- ✓ Visual display of benefits to stakeholders,
- ✓ Validation of ROI,
- ✓ Immediate notice of any problems,
- ✓ Predictive maintenance capabilities,
- ✓ Communication of sustainability.

# System Operations

## Maintaining Your System & Protecting Your Investment

SunPeak systems are reliable and require minimal day-to-day attention. After SunPeak’s customer training, your facility personnel will be able to perform the necessary routine inspections and simple preventative care procedures easily and cost-effectively.

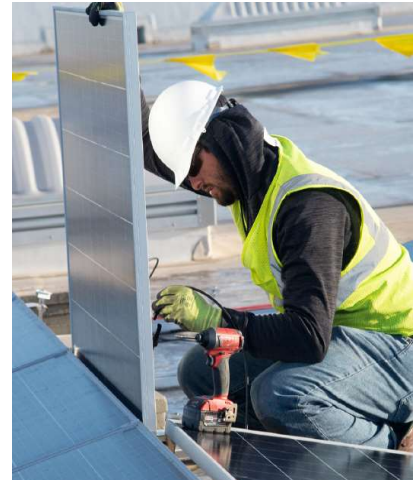
Due to the long-term nature of the solar asset, a SunPeak Operations & Maintenance (O&M) Plan is recommended. With SunPeak’s O&M Plan, skilled technicians regularly audit your system’s performance, respond to and diagnose possible equipment issues, and perform warranty-related work on your behalf, if ever necessary. The plan provides you with complete peace of mind knowing the system is always operating at an optimal level. thus ensuring your investment return is maximized.

### Services Included

First year free with 5-year contract	Warranty claims management
All system errors evaluated by SunPeak techs	Warranty and warranty documentation management
Customer notified of critical errors within 48 hours	Discounted labor rate (50%)
Weekly monitoring services	Annual performance reporting (quarterly by request)
Error root-cause analysis	Live and/or video support and tech support services

Our O&M Plan is a separate agreement from the solar contract. The O&M contract has a 5-year term that is billed yearly at the amounts shown in the table on this page. If you opt-in to the O&M Plan before entering into a solar contract with SunPeak, then the first year of the O&M Plan is free. Customers can opt to renew the O&M contract at the end of the term.

	Year 1	Years 2 - 5
O&M Services	Free	\$1,509 / year
Monitoring Subscriptions	Free	#N/A
<b>Estimated Annual Cost</b>	<b>Free</b>	<b>#N/A</b>



## Assumptions & Clarifications

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- Quotation assumes facility is "solar ready". Facility electrical system or utility upgrades not included.
- Solar production estimates were calculated using Helioscope, using standard loss assumptions.
- System configuration, size, and pricing may need to be altered based on further analysis and information.
- Solar value rate of \$0.059/kWh was used based on current utility rate.
- Inflation in utility energy rate is projected to average 2.90%/year.
- Module degradation averages -0.50%/year on a linear basis.
- O&M costs are not included in ROI calculations.
- Federal Investment Tax Credit (ITC) rate of 30.0%.
- Energy cost savings are pre-tax.
- Estimates for environmental impact were derived from coefficients presented on the EPA's website.
- Electricity usage forecast, utility service rate, shading and energy production are estimates.
- Customer shall provide a network switch with internet access for remote system monitoring.
- Proposal is valid for (30) days.

## Disclaimer

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This proposal is for informational purposes only, using estimates for current and future utility rates, system production, and projected incentives. System quote represents SunPeak's best estimate with the information presently available, but should be treated as budgetary until a detailed engineering analysis can be completed. Please consult with your tax accountant for any tax related information.

This proposal assumes the site is in acceptable condition to install a solar system (structurally, electrical system, access, etc.) unless otherwise stated. This proposal includes forecasts, projections and other predictive statements resulting from an analysis by SunPeak of the information provided to it by the prospective client as well as information from SunPeak's operations and what is available within the marketplace. The forecasts, projections, and other predictive statements, particularly those of energy savings and cost savings, are based on information available to SunPeak at the time made, stated assumptions that were relied upon, and other factors outside the control of SunPeak. Prospective clients should recognize that the forecasts, projections, and other predictive statements stated herein, although based upon information and assumptions that SunPeak believes to be viable and accurate, are projections and that SunPeak does not provide any guarantees for the achievement by the prospective client of the projections noted herein. The prospective client must realize that in the development of any projection there are certain factors that are unforeseen at the time the projection is made and thereby there are certain risks involved that provide for uncertainty. The prospective client's actual performance results may differ from those projected in this proposal. Therefore, there is no guarantee presented or implied as to the accuracy of any specific forecast, projection or predictive statement contained herein.



## NSSD 112 - Oak Terrace Elementary

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AUGUST 26, 2024

### PRELIMINARY PROPOSAL

Proposal No: 230102.02-02

*Contact:*

Alex Thomas  
Project Development Manager  
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1026 Ann Street  
Madison, WI 53713  
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Dave Wilms  
Senior Project Developer  
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847-641-8169  
1026 Ann Street  
Madison, WI 53713  
www.sunpeakpower.com

# Project Goals

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Based on our initial engagement, we identified two primary goals for this potential solar project:

- 1.) Reduce Energy Costs. Reduce electrical costs by using solar to supplement a portion of your facility's current electrical needs, also providing a hedge against future rate increases.
- 2.) Optimize Return on Investment. Optimize return on investment by establishing a design concept that has the best ratio between investment and future benefit.

With your financial and social mission goals in mind, our project developers completed an initial review of your current energy usage, energy rates, and site conditions as a first step to determining an appropriate system size, placement, and the associated system costs and long-term benefits that solar can provide.

## Initial Analysis of Current Situation

Site Name & Location	Current Electrical Consumption Profile	
Oak Terrace Elementary 240 Prairie Ave Highwood, Illinois 60040	Consumption (Estimate)	1,000,000 kWh/yr
	Expense	\$113,331/yr
	Blended Utility Rate (\$/kWh)	\$0.113/kWh
	CO <sub>2</sub> Emissions (est.)	760 tons/yr

Your site located at 240 Prairie Ave in Highwood, Illinois was evaluated using aerial imagery to assess potential areas for solar. Setback requirements, relevant codes, meter location, existing obstructions, and shading considerations were incorporated into the model's design constraints. This analysis informs the site's overall potential for solar size.

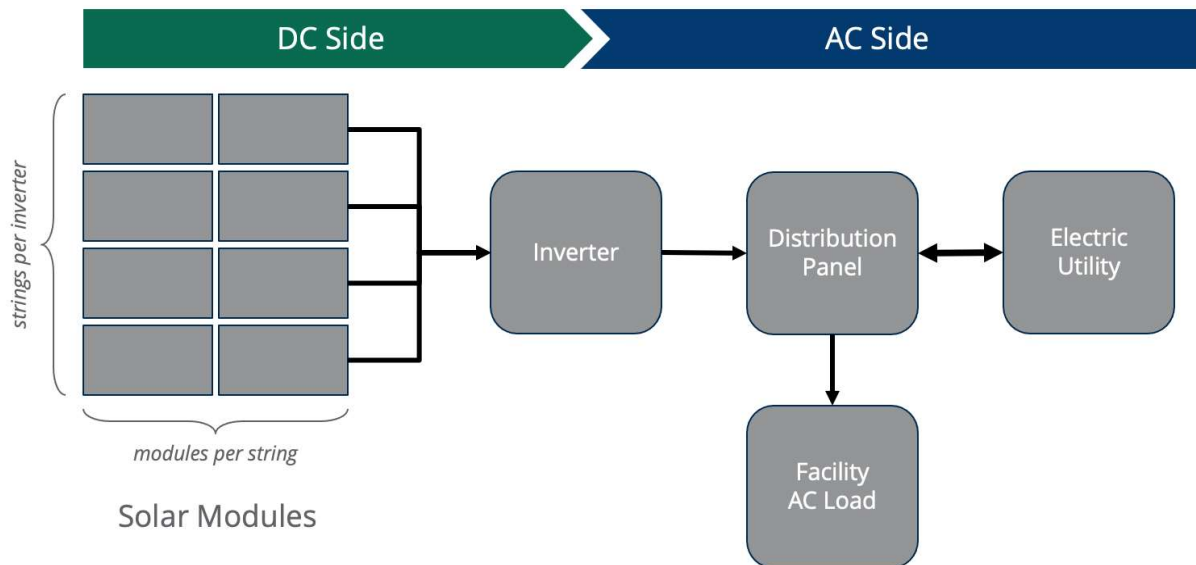
The provided electrical information indicated an estimated 1,000,000 kWh/year of energy consumption. The site's estimated cost of energy is \$113,331 per year and a blended (average) rate of \$0.113/kWh. This combined with ComEd's solar interconnection's policy, and your goals, provided a basis for an initially proposed system size and concept.

The Environmental Protection Agency (EPA) publishes publicly available relationships between the amount of electricity consumed and the amount of carbon dioxide emitted, based on the country's current mix of fuel sources and reliance on fossil fuels. Based on this, the facility contributes an estimated 760 tons per year of carbon dioxide to the atmosphere. While this is not atypical, it demonstrates the impact of our current energy consumption and the opportunity for improvement with solar.

ComEd does provide a net metering program up to 2,000 kWac of system size. Net metering is a program that provides full retail rate compensation for surplus energy delivered to the grid during times when the solar system may be producing more electricity than the facility's current demand. This program can economically justify solar being a larger share of the overall energy mix than would otherwise be appropriate. This program was considered when initially sizing the solar system.

## SunPeak Standard System Architecture

All grid-connected solar systems are comprised of two electrical sides: DC and AC. Solar modules (panels) generate direct current (DC) electricity. To convert DC into a form usable by the facility (and compatible with the electrical grid) a component named an inverter is installed to output alternating current (AC). The inverter is the central building block to each subsystem. Once a subsystem architecture has been established, the general system size can be achieved by scaling the number of inverters/subsystems.



The module wattage (Wp) and number of solar modules determines the DC capacity (kWdc) of the system. This capacity is directly proportional to the amount of annual energy the system will produce and is the most important metric when discussing system size. The AC capacity (kWac) of the system is determined by the inverter nameplate capacity and the number of inverters in the system. AC capacity is most often discussed in the context of utility interconnection and occasionally financial incentive calculations.

The DC capacity (kWdc) is sized larger than the AC capacity (kWac), leading to the DC:AC ratio. Optimization of this ratio allows effective utilization of the inverter, important for value engineering.

SunPeak's design philosophy is centered on providing the best long-term value, which includes both an efficient upfront installation as well as reduced operating and maintenance costs over the life of the system. Also, a holistic design approach considers all the factors that contribute to the "performance to cost ratio," including system efficiency and material, labor and soft cost considerations.

SunPeak has engineered and adopted a standardized system architecture for all of its projects. By doing so, project-specific engineering needs are reduced, supply channels are simplified and overall system reliability is improved. SunPeak's system architecture contains the highest quality equipment components from the world's leading solar manufacturers.

# Preliminary System Sizing & Layout

This solar design concept is preliminary based on initial information received from you and our initial efforts. We expect through continued interaction with you that this concept will evolve once additional details are addressed. Once our detailed site assessment is fully incorporated and additional analysis complete, a final design concept will be established and presented to you.

DC		AC		
686 modules	<b>281 kWdc</b>	1.41 DC/AC	200 kWac	5 inverters

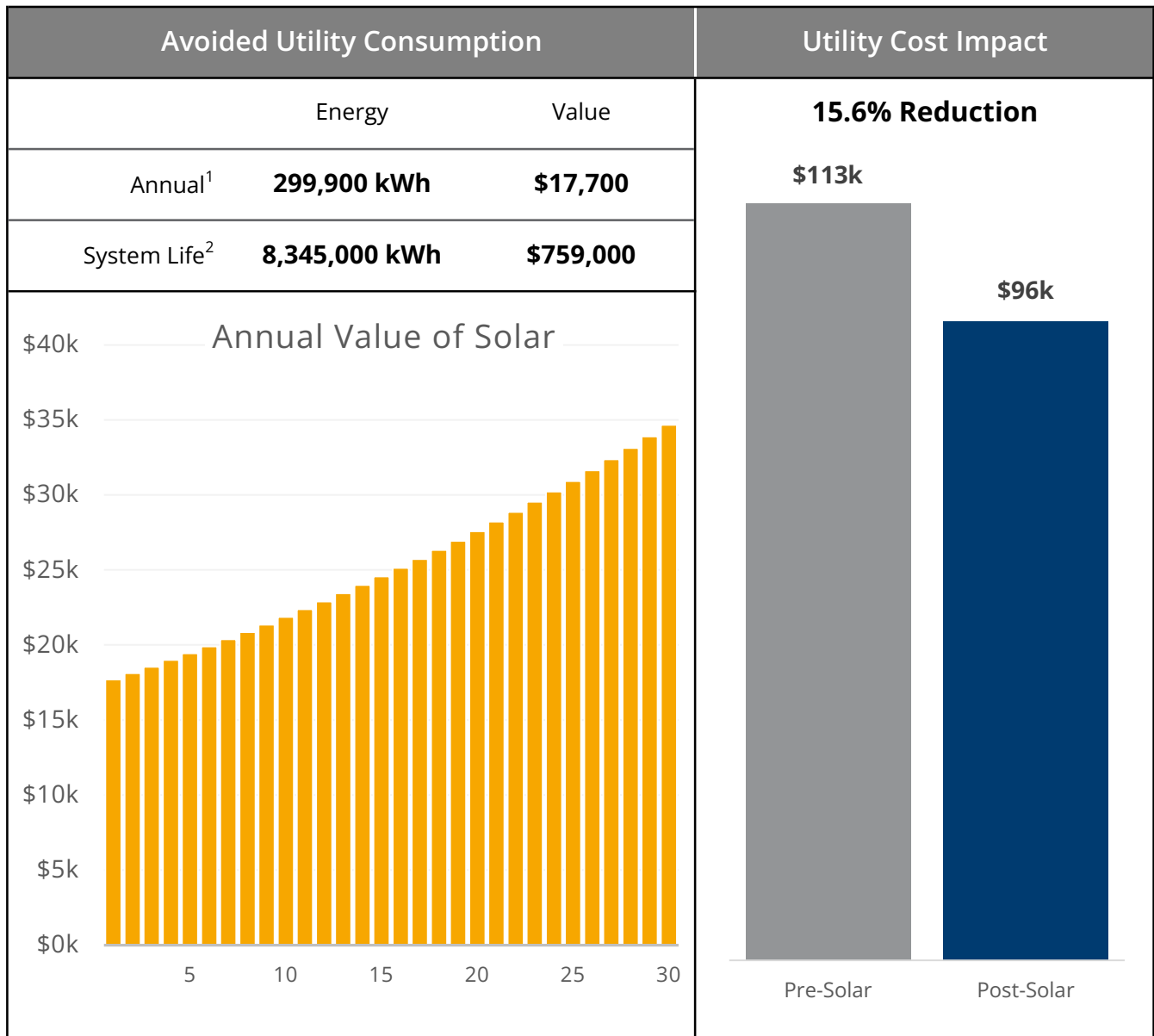


# Solar Energy Impact

## Reducing Your Utility Costs

The energy produced by your new solar system will directly reduce the energy required from your utility. With the current system size of 281 kWdc, utility electrical consumption will decrease by 299,900 kWh per year, or approximately 30.0%. Using a current estimate of \$0.059/kWh utility rate, this equates to annual savings of \$17,700.

These annual savings will accumulate over time at an increasing rate due to expected continued inflation in the cost of utility rates. Over the past 20 years, utility rates have risen annually by about 2.9%. If this rate continues in the future, the total reduction in utility costs will total \$759,000.



1.) First year energy production and estimated value. Module degradation and inflation will influence subsequent years.

2.) Module degradation of -0.5% and assumed utility rate inflation of 2.9% included in 30-year lifespan.

## Investment Overview

### Available Incentives & Net Investment

SunPeak is a full turnkey integrator of solar systems. Our pricing reflects the total cost to engineer, construct, and commission the project. Beyond the future energy cost savings, additional tax and cash incentives are available, which are detailed below:

	\$	\$/kWdc
<b>System Price</b>	<b>580,100</b>	<b>2,063</b>
Federal Investment Tax Credit (ITC)	(174,030)	(619)
ComEd DG Rebate	(70,300)	(250)
<b>Net Investment at Year 1</b>	<b>335,770</b>	<b>1,194</b>
Illinois Shines Contract - Group B	(265,460)	(944)
<b>Lifetime Net Investment</b>	<b>70,310</b>	<b>250</b>

**System Price.** This is the preliminary total turnkey cost to install the system, which includes engineering, materials, labor, permitting and utility management. Final system quotation will be established after site assessment and detailed conceptual design.

**Federal Investment Tax Credit (ITC).** Since your organization is a non-tax entity, the project qualifies for an elective payment from the federal government equal to 30.0% of the system price. You must separately register the project with the IRS prior to being granted the elective payment.

**ComEd DG Rebate.** ComEd offers a Distributed Generation Rebate equal to \$250/kWdc, which is paid in full after system commissioning. Redemption of this rebate typically requires forgoing full net metering benefits.

**Net Investment at Year 1.** The system investment after all rebates and incentives that can be gained in the first year after the system is commissioned.

**Illinois Shines Contract - Group B.** This program (also known as the Adjustable Block Program) offers payments for the Solar Renewable Energy Credits (SRECs) generated by your system. Contract amount is based on forecasted energy production in first 15 years of system life, and is paid out over first 6 years.

**Lifetime Net Investment.** The net final system investment, including both contributed capital and financial incentives available. Does not include any electrical cost savings, which is treated elsewhere as the payback on net investment. Does not include O&M costs.

## Project Financing

### Customer-Owned + Cash Financed

The simplest option is to own the system outright and finance with 100% equity. All available tax and financial incentives are retained by the system owner. In the below table, net installation cash flow is noted using positive figures to indicate cash flowing in and negative figures to indicate cash flowing out.

<b>Installation Cash Flow</b>	<b>\$</b>
System Price	(580,100)
Federal Investment Tax Credit (ITC)	174,030
ComEd DG Rebate	70,300
Net Cash Flow after Incentives	(335,770)

The above table does not include any value the system produces while in operation, and is limited only to the installation cash flow up to the point of system operation. Various return on investment metrics follow:

Net Cash Flow after Incentives <b>(\$335,770)</b>	Calculated in above table, the net cash flow at installation time. Positive (negative) values indicate positive (negative) net cash flow.
Net Annual Cash Flow <b>\$59,700</b>	Annual value of avoided utility costs and operating financial incentives that may be available. 5-year average. For specific annual figures, see next page.
Avoided Utility Cost <b>\$759,000</b>	Projected lifetime value of energy the solar system will offset, based on a 1st year solar value rate of \$0.059/kWh and 2.90%/yr. in forecasted inflation.
Net Investment <b>\$70,310</b>	Net lifetime cost of system, including all capital investments, net of tax and financing incentives available.
Lifetime Energy Production <b>8,345,000 kWh</b>	Amount of energy the system is forecasted to generate in its first 30 years of operation, including impact of module degradation of -0.5%.
Simple Payback <b>5.6 years</b>	Timeframe (in years) system needs to operate to fully repay Net Cash Flow at Installation. Based on annual operating cash flow, detailed on next page.
Internal Rate of Return (IRR) <b>12.5%</b>	Based on Net Cash Flow at Installation and subsequent Annual Cash Flows during operation, estimates the annual rate of return of the investment.
Return on Net Investment (ROI) <b>1,080%</b>	Lifetime Avoided Utility Cost (benefit) divided by Net Investment (cost). Simple benefit-to-cost ratio. Disregards time value of money.
SunPeak Cost of Energy (SCOE) <b>\$0.008/kWh</b>	Simple proxy for average cost of electricity generate by solar system over its projected 30-year lifetime. Net Investment (\$) divided by Lifetime Energy Production yields units of \$/kWh, comparable to utility rate units.

# Project Financing

## Customer-Owned + Cash Financed (con'd)

The following table details the system pro forma for a customer-owned system, financed with 100% equity (no debt). The Installation timeframe is considered Year 0, and subsequent Year 1-30 associate with the projected operating years of the system during its useful life.

### System Pro Forma: Energy, Solar Value and Cash Flows

*all units in thousands of dollars (\$), except solar energy (MWh)*

	Year	Solar Energy (MWh)	Value of Solar (\$k)	SRECs (\$k)	Annual Cash Flow (\$k)	Cum Cash Flow (\$k)
<b>Installation</b>	0				(336)	(336)
	1	300	18	50	68	(268)
	2	298	18	39	57	(211)
	3	297	19	39	58	(153)
	4	295	19	39	58	(95)
	5	294	19	39	58	(37)
<b>Operation</b>	6	292	20	39	59	22
	7	291	20		20	42
	8	289	21		21	63
	9	288	21		21	84
	10	286	22		22	106
	11	285	22		22	129
	12	283	23		23	151
	13	282	23		23	175
	14	280	24		24	199
	15	279	25	21	45	244
	16	277	25		25	269
	17	276	26		26	295
	18	274	26		26	321
	19	273	27		27	348
	20	271	28		28	376
	21	270	28		28	404
	22	268	29		29	433
	23	267	30		30	462
	24	265	30		30	493
	25	264	31		31	524
	26	262	32		32	555
	27	261	32		32	588
	28	259	33		33	621
	29	258	34		34	655
	30	256	35		35	689
	<b>Total</b>	<b>8,345</b>	<b>759</b>	<b>265</b>	<b>689</b>	

# System Operations

## Monitoring Your Solar Energy Production

A fully integrated performance monitor is included with your SunPeak solar system, allowing you to gather useful energy production metrics over time and validate return on investment. Additionally, SunPeak will provide you with an online access portal that can be used to showcase visually the system's benefit to your customers, employees or other stakeholders.

SunPeak's operations and maintenance team also monitors the status of the system's performance. If any issues or power disruptions arise, the platform automatically generates a notification so that support can be provided efficiently via SunPeak's Operations & Maintenance plan.



*Dashboard can be accessed via:*

- ✓ Monitor in lobby or conference room,
- ✓ Any desktop or laptop computer,
- ✓ Any tablet or smartphone,
- ✓ Integrated with energy management,
- ✓ Corporate website.

*SunPeak Integrated Performance Monitoring provides:*

- ✓ Visual display of benefits to stakeholders,
- ✓ Validation of ROI,
- ✓ Immediate notice of any problems,
- ✓ Predictive maintenance capabilities,
- ✓ Communication of sustainability.

# System Operations

## Maintaining Your System & Protecting Your Investment

SunPeak systems are reliable and require minimal day-to-day attention. After SunPeak’s customer training, your facility personnel will be able to perform the necessary routine inspections and simple preventative care procedures easily and cost-effectively.

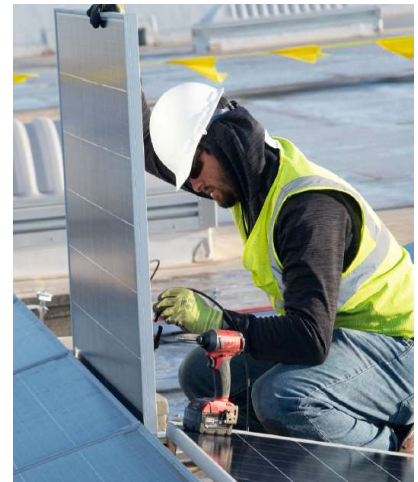
Due to the long-term nature of the solar asset, a SunPeak Operations & Maintenance (O&M) Plan is recommended. With SunPeak’s O&M Plan, skilled technicians regularly audit your system’s performance, respond to and diagnose possible equipment issues, and perform warranty-related work on your behalf, if ever necessary. The plan provides you with complete peace of mind knowing the system is always operating at an optimal level. thus ensuring your investment return is maximized.

### Services Included

First year free with 5-year contract	Warranty claims management
All system errors evaluated by SunPeak techs	Warranty and warranty documentation management
Customer notified of critical errors within 48 hours	Discounted labor rate (50%)
Weekly monitoring services	Annual performance reporting (quarterly by request)
Error root-cause analysis	Live and/or video support and tech support services

Our O&M Plan is a separate agreement from the solar contract. The O&M contract has a 5-year term that is billed yearly at the amounts shown in the table on this page. If you opt-in to the O&M Plan before entering into a solar contract with SunPeak, then the first year of the O&M Plan is free. Customers can opt to renew the O&M contract at the end of the term.

	Year 1	Years 2 - 5
O&M Services	Free	\$2,813 / year
Monitoring Subscriptions	Free	\$410 / year
<b>Estimated Annual Cost</b>	<b>Free</b>	<b>\$3,223 / year</b>



## Assumptions & Clarifications

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- Quotation assumes facility is "solar ready". Facility electrical system or utility upgrades not included.
- Solar production estimates were calculated using Helioscope, using standard loss assumptions.
- System configuration, size, and pricing may need to be altered based on further analysis and information.
- Solar value rate of \$0.059/kWh was used based on current utility rate.
- Inflation in utility energy rate is projected to average 2.90%/year.
- Module degradation averages -0.50%/year on a linear basis.
- O&M costs are not included in ROI calculations.
- Federal Investment Tax Credit (ITC) rate of 30.0%.
- Energy cost savings are pre-tax.
- Estimates for environmental impact were derived from coefficients presented on the EPA's website.
- Electricity usage forecast, utility service rate, shading and energy production are estimates.
- Estimated annual usage and electric rates are based on bill information from Edgewood Middle School.
- Customer shall provide a network switch with internet access for remote system monitoring.
- Proposal is valid for (30) days.

## Disclaimer

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This proposal is for informational purposes only, using estimates for current and future utility rates, system production, and projected incentives. System quote represents SunPeak's best estimate with the information presently available, but should be treated as budgetary until a detailed engineering analysis can be completed. Please consult with your tax accountant for any tax related information.

This proposal assumes the site is in acceptable condition to install a solar system (structurally, electrical system, access, etc.) unless otherwise stated. This proposal includes forecasts, projections and other predictive statements resulting from an analysis by SunPeak of the information provided to it by the prospective client as well as information from SunPeak's operations and what is available within the marketplace. The forecasts, projections, and other predictive statements, particularly those of energy savings and cost savings, are based on information available to SunPeak at the time made, stated assumptions that were relied upon, and other factors outside the control of SunPeak. Prospective clients should recognize that the forecasts, projections, and other predictive statements stated herein, although based upon information and assumptions that SunPeak believes to be viable and accurate, are projections and that SunPeak does not provide any guarantees for the achievement by the prospective client of the projections noted herein. The prospective client must realize that in the development of any projection there are certain factors that are unforeseen at the time the projection is made and thereby there are certain risks involved that provide for uncertainty. The prospective client's actual performance results may differ from those projected in this proposal. Therefore, there is no guarantee presented or implied as to the accuracy of any specific forecast, projection or predictive statement contained herein.

- Ret. AP Environmental Science Teacher Stevenson High School

## **Sustainability:**

- Dept. of Energy - Solar Energy Technology Office Grant Committee

**Enough.... for all....Forever!**

Member

**Dave Wilms**

- Metropolitan Mayor Caucus - Environment and Energy Committee
- Sustain Libertyville Commission
- Developed 5 Megawatts of Solar in Lake County (12 million lbs/year)
- Senior Project Developer for Sunpeak Solar

***“We must all act that as we do is the law for all to follow.”***

# Education is Critical

Solar For Architects

Part 1

## Solar: A Building Electrification Trend That's Here to Stay



BY: DAVE WILMS, SUNPEAK

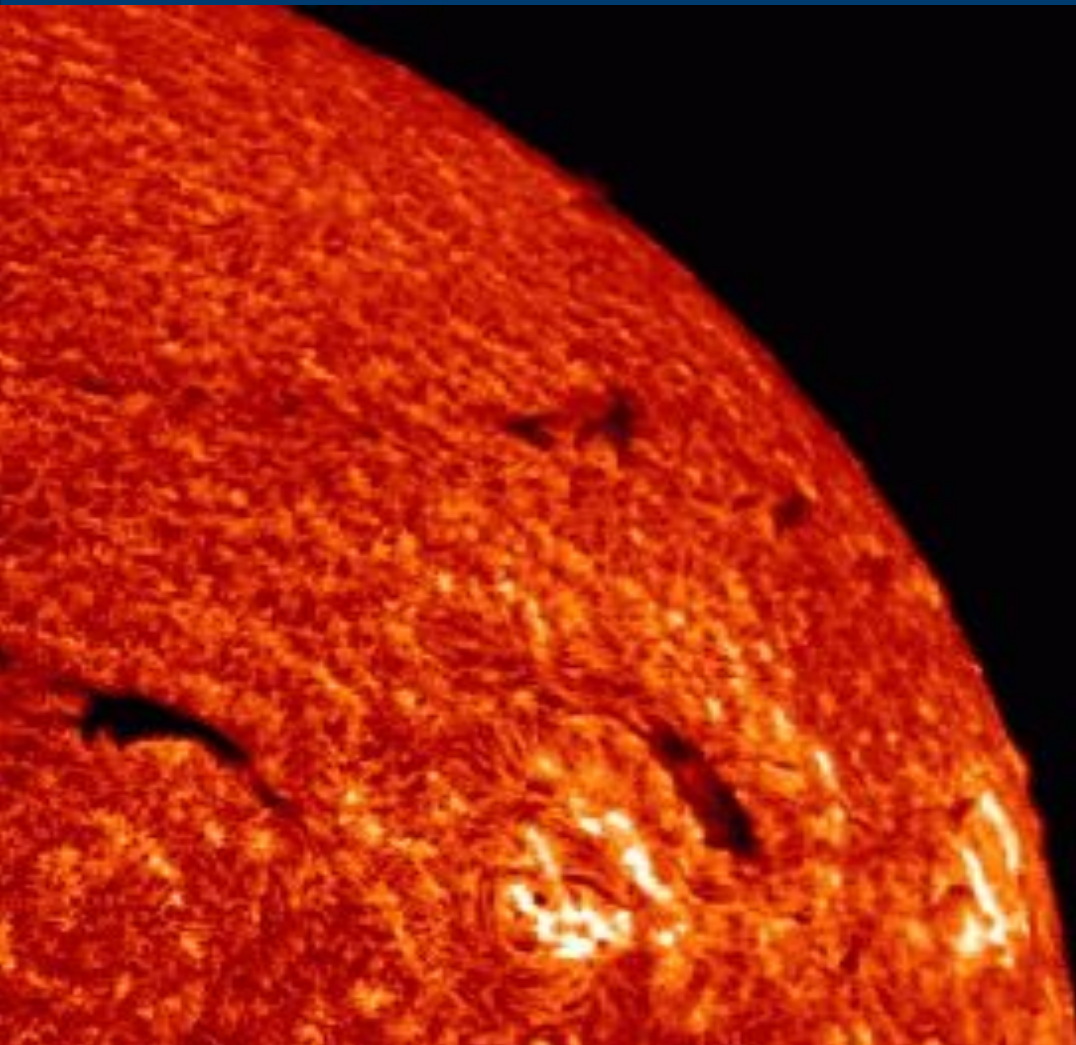
### **Making Rooftop Solar Part of Your Next Client Discussion**

While climate change and energy prices continue to

This two-part series aims to provide architects with relevant and up-to-date information on solar energy technology and how to plan for the design and implementation of these systems. Below, we'll examine the current state of solar

# All Energy Comes from the Sun today or yesterday

(Coal, Oil Natural Gas) (Except Nuclear)  
Fusion Power Works & Safe



Mother Nature gives us sunlight daily...  
Let's use her generosity to the fullest!  
No Digging... No Drilling... No CO2!

# The The First Net-Zero Classroom in the State?!

Students learn by what we do ...more than by what we say!



Room 8000 AP Env. Science Room



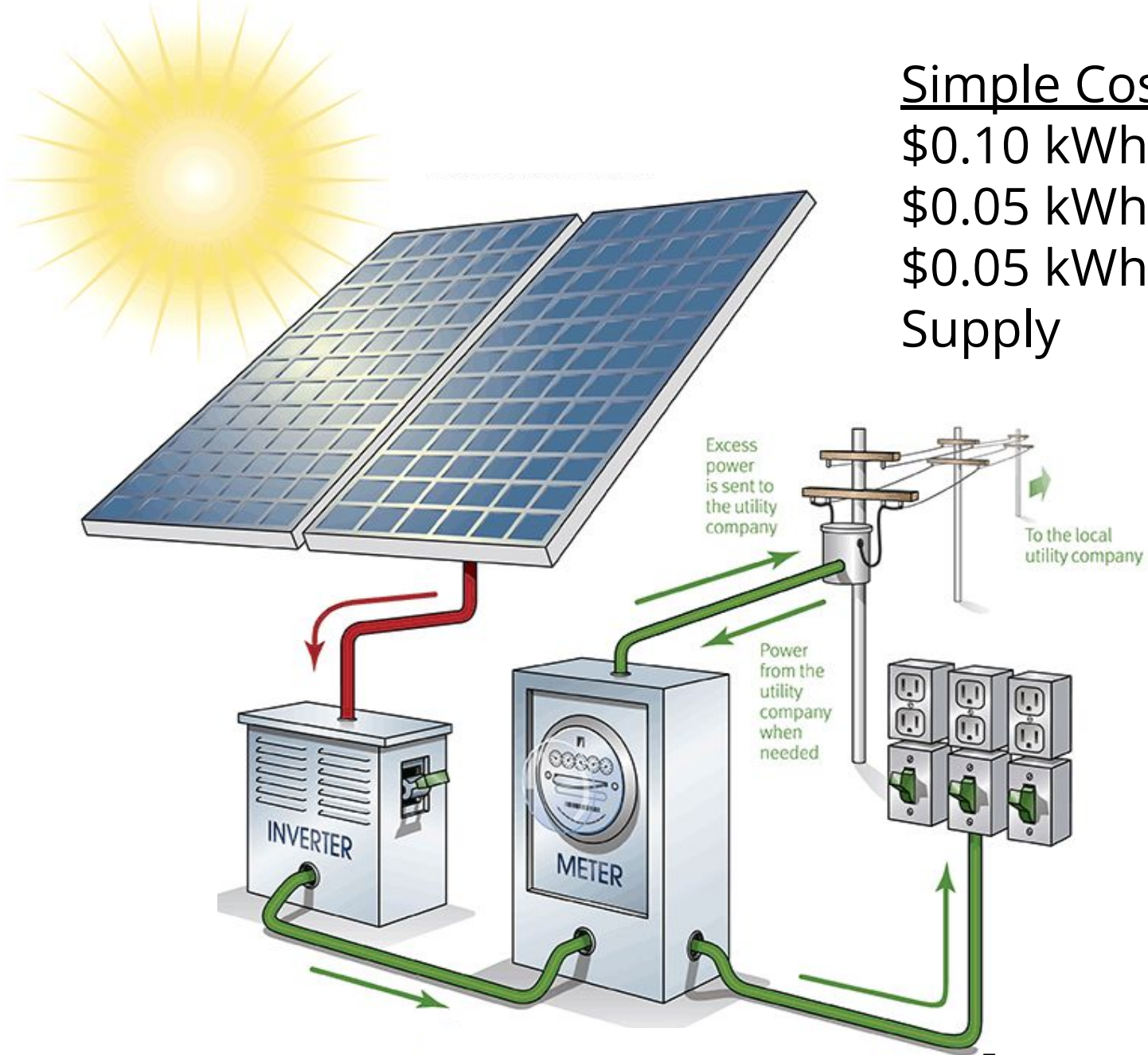
The Technology Exists (16 Years Ago)

# Stevenson High School Today



# I will cover this evening:

1. WHY we need solar and how it works.
2. Solar for Edgewood and Oak Terrace
3. Economics and Options
4. Solar in Curriculum - Is it important?

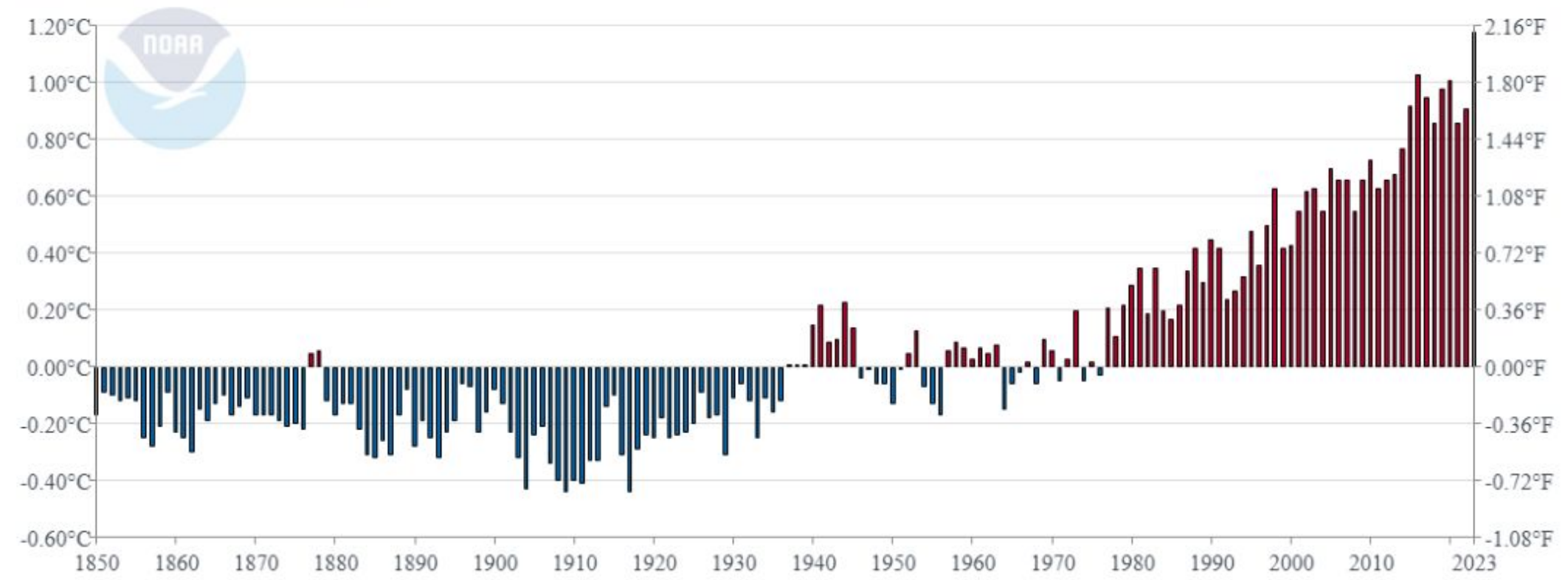


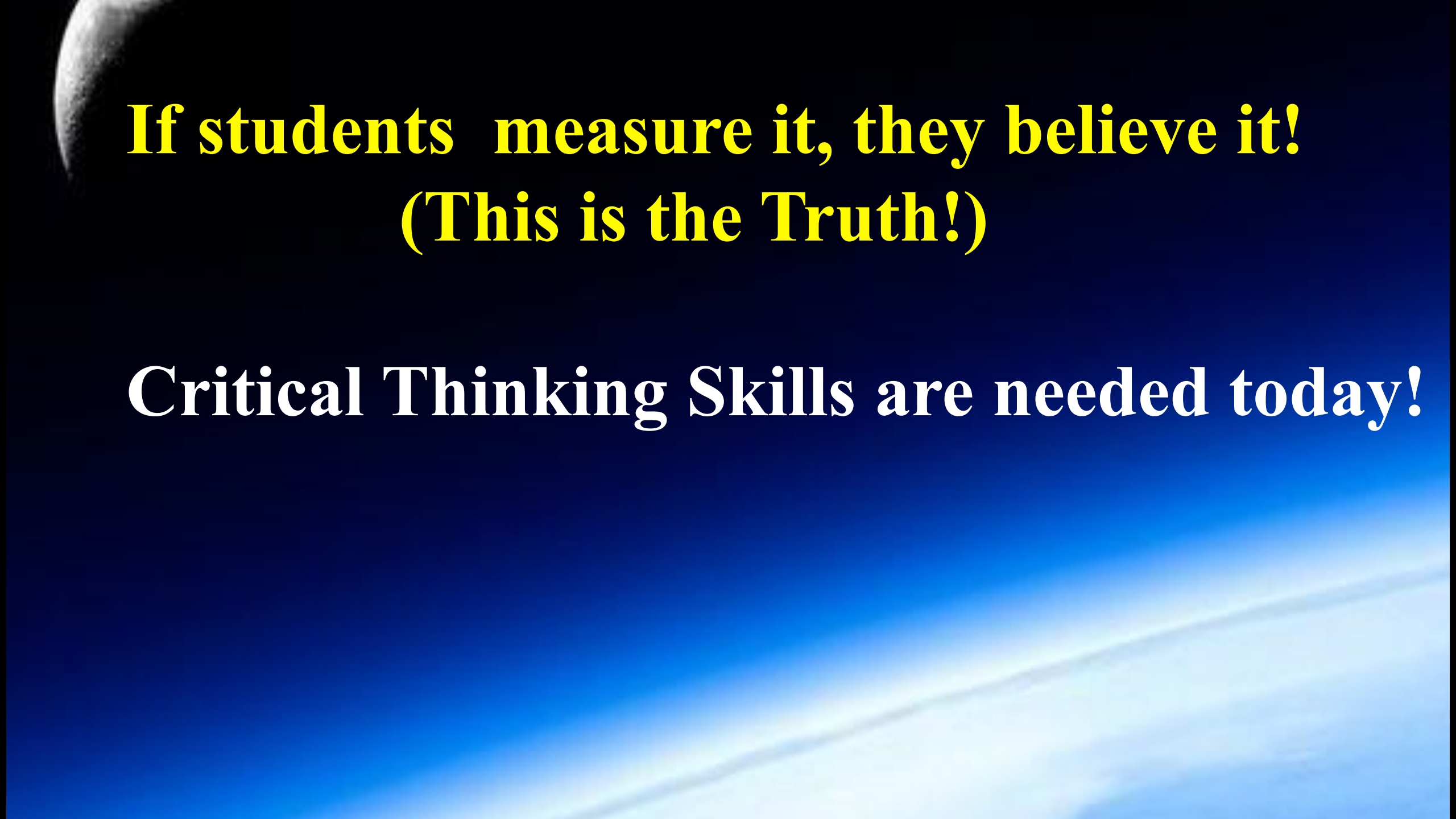
Simple Cost Breakdown  
\$0.10 kWh - Meter Cost  
\$0.05 kWh Transmission  
\$0.05 kWh Energy Supply

**"net metering"**

# Why Solar? What is going on here? Climate = 30+ years, Weather = Daily

**Global Land and Ocean**  
January-December Temperature Anomalies



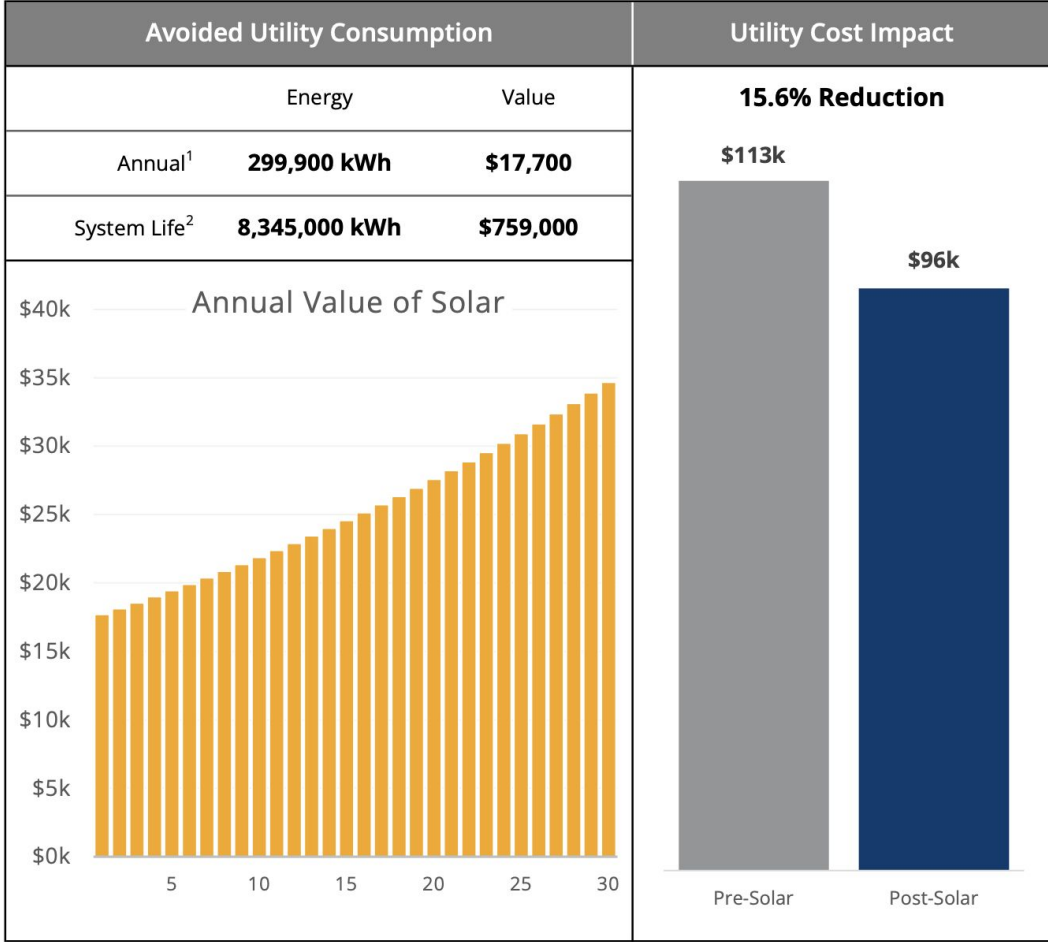


**If students measure it, they believe it!**  
**(This is the Truth!)**

**Critical Thinking Skills are needed today!**

# Oak Terrace Elementary School

DC		AC		
686 modules	<b>281 kWdc</b>	1.41 DC/AC	200 kWac	5 inverters



1.) First year energy production and estimated value. Module degradation and inflation will influence subsequent years.  
 2.) Module degradation of -0.5% and assumed utility rate inflation of 2.9% included in 30-year lifespan.

# Oak Terrace Elementary School

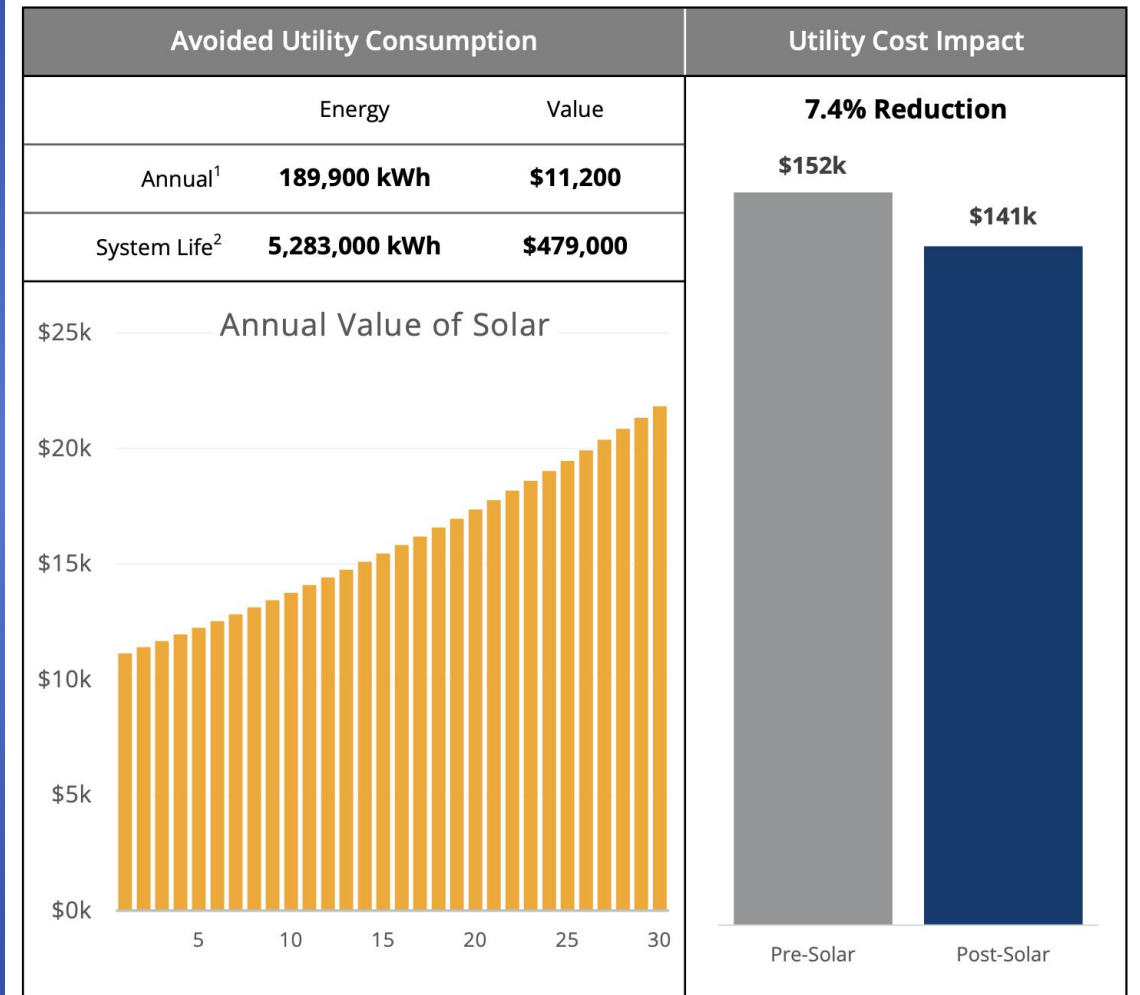
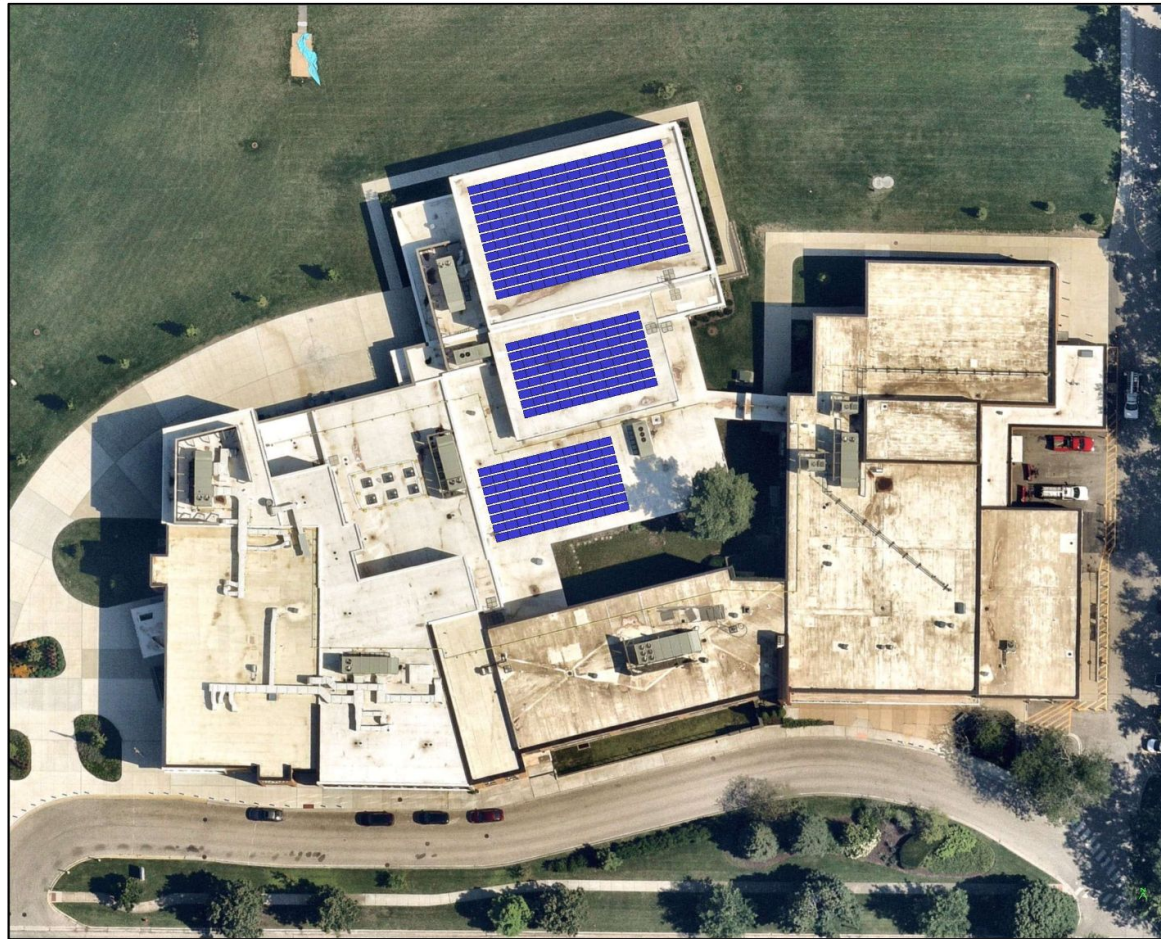
	\$	\$/kWdc
<b>System Price</b>	<b>580,100</b>	<b>2,063</b>
Federal Investment Tax Credit (ITC)	(174,030)	(619)
ComEd DG Rebate	(70,300)	(250)
<b>Net Investment at Year 1</b>	<b>335,770</b>	<b>1,194</b>
Illinois Shines Contract - Group B	(265,460)	(944)
<b>Lifetime Net Investment</b>	<b>70,310</b>	<b>250</b>

# Oak Terrace Elementary School

Net Cash Flow after Incentives <b>(\$335,770)</b>	Calculated in above table, the net cash flow at installation time. Positive (negative) values indicate positive (negative) net cash flow.
Net Annual Cash Flow <b>\$59,700</b>	Annual value of avoided utility costs and operating financial incentives that may be available. 5-year average. For specific annual figures, see next page.
Avoided Utility Cost <b>\$759,000</b>	Projected lifetime value of energy the solar system will offset, based on a 1st year solar value rate of \$0.059/kWh and 2.90%/yr. in forecasted inflation.
Net Investment <b>\$70,310</b>	Net lifetime cost of system, including all capital investments, net of tax and financing incentives available.
Lifetime Energy Production <b>8,345,000 kWh</b>	Amount of energy the system is forecasted to generate in its first 30 years of operation, including impact of module degradation of -0.5%.
Simple Payback <b>5.6 years</b>	Timeframe (in years) system needs to operate to fully repay Net Cash Flow at Installation. Based on annual operating cash flow, detailed on next page.
Internal Rate of Return (IRR) <b>12.5%</b>	Based on Net Cash Flow at Installation and subsequent Annual Cash Flows during operation, estimates the annual rate of return of the investment.
Return on Net Investment (ROI) <b>1,080%</b>	Lifetime Avoided Utility Cost (benefit) divided by Net Investment (cost). Simple benefit-to-cost ratio. Disregards time value of money.
SunPeak Cost of Energy (SCOE) <b>\$0.008/kWh</b>	Simple proxy for average cost of electricity generate by solar system over its projected 30-year lifetime. Net Investment (\$) divided by Lifetime Energy Production yields units of \$/kWh, comparable to utility rate units.

# Edgewood Middle School

DC		AC		
368 modules	<b>151 kWdc</b>	1.21 DC/AC	125 kWac	2 inverters



1.) First year energy production and estimated value. Module degradation and inflation will influence subsequent years.

2.) Module degradation of -0.5% and assumed utility rate inflation of 2.9% included in 30-year lifespan.

# Edgewood Middle School

	\$	\$/kWdc
<b>System Price</b>	<b>307,500</b>	<b>2,038</b>
Federal Investment Tax Credit (ITC)	(92,250)	(611)
ComEd DG Rebate	(37,700)	(250)
<b>Net Investment at Year 1</b>	<b>177,550</b>	<b>1,177</b>
Illinois Shines Contract - Group B	(168,077)	(1,114)
<b>Lifetime Net Investment</b>	<b>9,473</b>	<b>63</b>

# Edgewood Middle School

Net Cash Flow after Incentives <b>(\$177,550)</b>	Calculated in above table, the net cash flow at installation time. Positive (negative) values indicate positive (negative) net cash flow.
Net Annual Cash Flow <b>\$37,800</b>	Annual value of avoided utility costs and operating financial incentives that may be available. 5-year average. For specific annual figures, see next page.
Avoided Utility Cost <b>\$479,000</b>	Projected lifetime value of energy the solar system will offset, based on a 1st year solar value rate of \$0.059/kWh and 2.90%/yr. in forecasted inflation.
Net Investment <b>\$9,473</b>	Net lifetime cost of system, including all capital investments, net of tax and financing incentives available.
Lifetime Energy Production <b>5,283,000 kWh</b>	Amount of energy the system is forecasted to generate in its first 30 years of operation, including impact of module degradation of -0.5%.
Simple Payback <b>4.7 years</b>	Timeframe (in years) system needs to operate to fully repay Net Cash Flow at Installation. Based on annual operating cash flow, detailed on next page.
Internal Rate of Return (IRR) <b>16.1%</b>	Based on Net Cash Flow at Installation and subsequent Annual Cash Flows during operation, estimates the annual rate of return of the investment.
Return on Net Investment (ROI) <b>5,055%</b>	Lifetime Avoided Utility Cost (benefit) divided by Net Investment (cost). Simple benefit-to-cost ratio. Disregards time value of money.
SunPeak Cost of Energy (SCOPE) <b>\$0.002/kWh</b>	Simple proxy for average cost of electricity generate by solar system over its projected 30-year lifetime. Net Investment (\$) divided by Lifetime Energy Production yields units of \$/kWh, comparable to utility rate units.

# Operations and Maintenance

## Services Included

First year free with 5-year contract	Warranty claims management
All system errors evaluated by SunPeak techs	Warranty and warranty documentation management
Customer notified of critical errors within 48 hours	Discounted labor rate (50%)
Weekly monitoring services	Annual performance reporting (quarterly by request)
Error root-cause analysis	Live and/or video support and tech support services

	Year 1	Years 2 - 5
O&M Services	Free	\$2,813 / year
Monitoring Subscriptions	Free	\$410 / year
<b>Estimated Annual Cost</b>	<b>Free</b>	<b>\$3,223 / year</b>

	O/M	Electric Savings
<b>Edgewood</b>	\$1,509.00	\$11,000.00
<b>Oak Terrace</b>	\$2,813.00	\$18,000.00
<b>Totals</b>	\$4,322.00	\$29,000.00
<b>% of Elec. Savings</b>	14.9%	

## METER INFORMATION

Read Dates	Meter Number	Load Type	Reading Type	Previous	Present	Difference	Multiplier	Usage
5/28-6/26	230248882	General Service	Off Pk kW	Actual	Actual			322.08
5/28-6/26	230248882	General Service	On Pk kW	Actual	Actual			348.36
5/28-6/26	230248882	General Service	Total kWh	Actual	Actual			111836

## CHARGE DETAILS

Commercial Hourly - 400 kW to 1000 kW 5/28/24 - 6/26/24 (29 Days)

SUPPLY - ComEd			\$4,773.98
Electricity Supply Charge	111,836 kWh		\$3,608.18
Capacity Charge	427.41 kW X 0.90385		\$386.31
Transmission Services Charge	111,836 kWh X 0.00985		\$1,101.58
Misc Procurement Components Chg	111,836 kWh X 0.00049		\$54.80
Purchased Electricity Adjustment			-\$376.89

DELIVERY - ComEd			\$4,384.35
Customer Charge			\$145.43
Standard Metering Charge			\$11.61
Distribution Facility Charge	348.36 kW X 11.74000		\$4,089.75
IL Electricity Distribution Charge	111,836 kWh X 0.00123		\$137.56

TAXES & FEES			\$3,519.19
Environmental Cost Recovery Adj	111,836 kWh X 0.00033		\$36.91
Renewable Portfolio Standard	111,836 kWh X 0.00502		\$561.42
Zero Emission Standard	111,836 kWh X 0.00195		\$218.08
Carbon-Free Energy Resource Adj	111,836 kWh X 0.00880		\$984.16
Energy Efficiency Programs	111,836 kWh X 0.00691		\$772.79
Energy Transition Assistance	111,836 kWh X 0.00072		\$80.52
Franchise Cost	\$4,318.93 X 2.11800%		\$91.47
State Tax			\$346.37

Municipal Tax \$427.47

Service Period Total **\$12,677.52**

**MISCELLANEOUS \$0.00**

Charges/Credits from previous bill \$13,387.10

Thank You for Your Payment of \$13,387.10 on June 10, 2024

Total Amount Due **\$12,677.52**

# How we (SunPeak) calculate savings.

Charges	Value (\$/kWh)	Notes
Electricity Supply	0.03226	\$3,608.18/111,836kWh = \$0.03226
Transmission Services	0.00985	Will not receive credits if export due to ComEd DG Rebate
Misc Procurement Components	0.00049	
IL Electricity Distribution	0.00123	
Environmental Cost Recovery Adj	0.00033	
Renewable Portfolio Standard	0.00502	
Zero Emission Standard	0.00195	
Carbon-Free Energy Resource Adj	N/A	Typically disregarded as this could be a positive or negative value and will change.
Energy Efficiency Programs	0.00691	Will not receive credits if export due to ComEd DG Rebate
Energy Transition Assistance	0.00072	
Total	0.05876	This is the "value of solar" that represents the estimated savings provided by solar.

# Oak Terrace

	Year	Solar Energy (MWh)	Value of Solar (\$k)	SRECs (\$k)	Annual Cash Flow (\$k)	Cum Cash Flow (\$k)
<b>Installation</b>	0				(336)	(336)
	1	300	18	50	68	(268)
	2	298	18	39	57	(211)
	3	297	19	39	58	(153)
	4	295	19	39	58	(95)
	5	294	19	39	58	(37)
	6	292	20	39	59	22
	7	291	20		20	42
	8	289	21		21	63
	9	288	21		21	84
	10	286	22		22	106
<b>Operation</b>	11	285	22		22	129
	12	283	23		23	151
	13	282	23		23	175
	14	280	24		24	199
	15	279	25	21	45	244
	16	277	25		25	269
	17	276	26		26	295
	18	274	26		26	321
	19	273	27		27	348
	20	271	28		28	376
	21	270	28		28	404
	22	268	29		29	433
	23	267	30		30	462
	24	265	30		30	493
	25	264	31		31	524
	26	262	32		32	555
	27	261	32		32	588
	28	259	33		33	621
	29	258	34		34	655
	30	256	35		35	689
	<b>Total</b>	<b>8,345</b>	<b>759</b>	<b>265</b>	<b>689</b>	

# Edgewood

	Year	Solar Energy (MWh)	Value of Solar (\$k)	SRECs (\$k)	Annual Cash Flow (\$k)	Cum Cash Flow (\$k)
<b>Installation</b>	0				(178)	(178)
	1	190	11	32	43	(135)
	2	189	11	25	36	(99)
	3	188	12	25	36	(62)
	4	187	12	25	37	(26)
	5	186	12	25	37	11
	6	185	13	25	37	49
	7	184	13		13	61
	8	183	13		13	75
	9	182	13		13	88
	10	181	14		14	102
<b>Operation</b>	11	180	14		14	116
	12	179	14		14	130
	13	178	15		15	145
	14	178	15		15	160
	15	177	15	13	29	189
	16	176	16		16	205
	17	175	16		16	221
	18	174	17		17	237
	19	173	17		17	254
	20	172	17		17	272
	21	171	18		18	290
	22	170	18		18	308
	23	169	19		19	326
	24	168	19		19	345
	25	167	19		19	365
	26	166	20		20	385
	27	165	20		20	405
	28	164	21		21	426
	29	163	21		21	448
	30	162	22		22	469
	<b>Total</b>	<b>5,283</b>	<b>479</b>	<b>168</b>	<b>469</b>	

# Curriculum - How and Why we need it.

- Biggest Transformation in our Human History!
- Kids are connected and know there is a problem with our Climate.
- Economically, solar and wind are 1/2 the price of Fossil Fuels.
- No black lung disease or oil pollution or leaking gas lines.
- Social Justice. Some burn it and others suffer from droughts.
- It literally allows our kids to have a better future to live in.
- It is easy to inspire teachers with ideas for authentic education making education relevant for their students and they do not need to rewrite what they are already teaching!
- The topic excites kids. Brings joy to learning.









# Carbon Impact

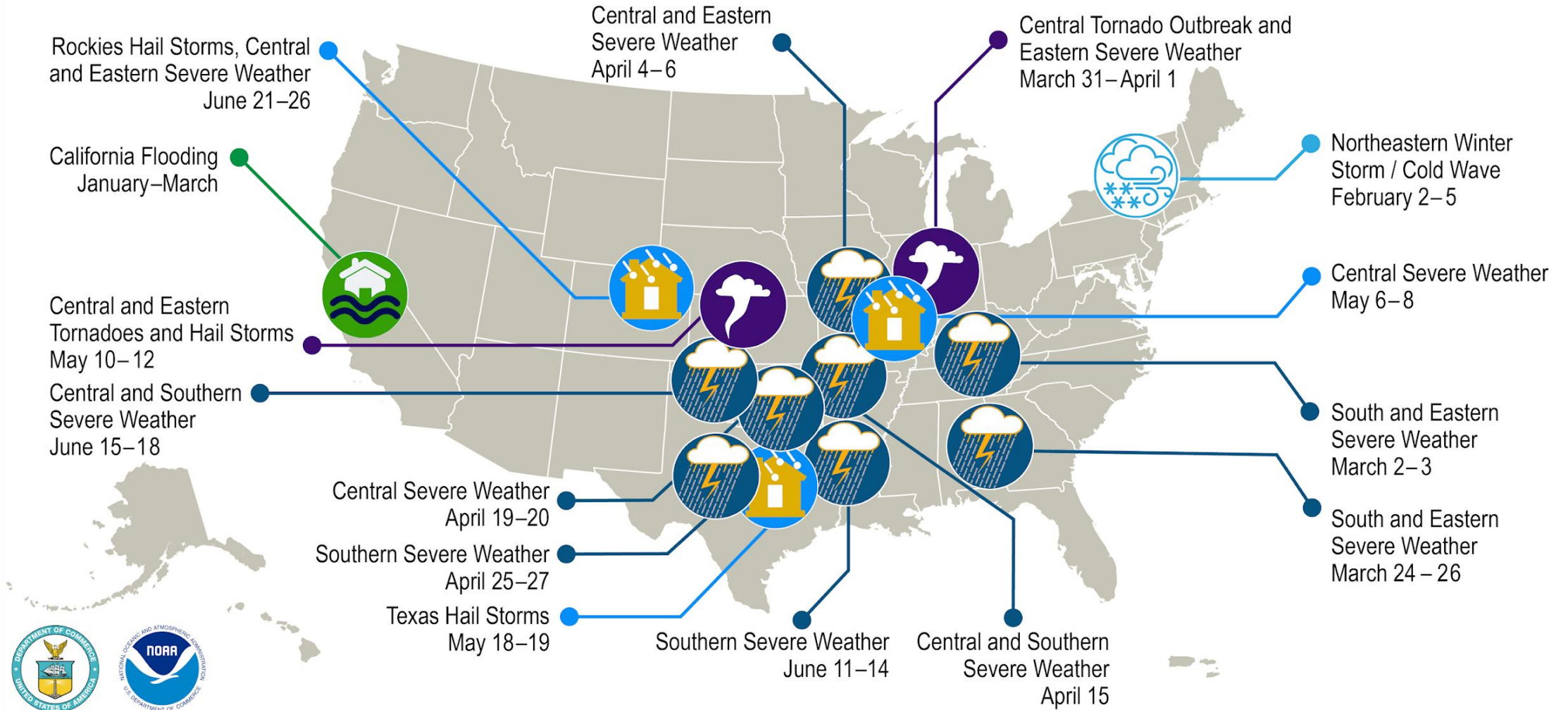
	Edgewood	Oak Terrace
Electricity Production kWh	8,345,000	5,283,000
Carbon Reduction Over Life of System (lbs)	18,359,000	11,622,600
<b>Total CO2</b>	<b>29,981,600</b>	

# Questions?

**Dave Wilms : 847-641-8169**

# U.S. 2023 Billion-Dollar Weather and Climate Disasters

-  Drought/Heat Wave
-  Flooding
-  Hail
-  Hurricane
-  Severe Weather
-  Tornado Outbreak
-  Wildfire
-  Winter Storm/Cold Wave



*This map denotes the approximate location for each of the 15 separate billion-dollar weather and climate disasters that impacted the United States through July 2023.*

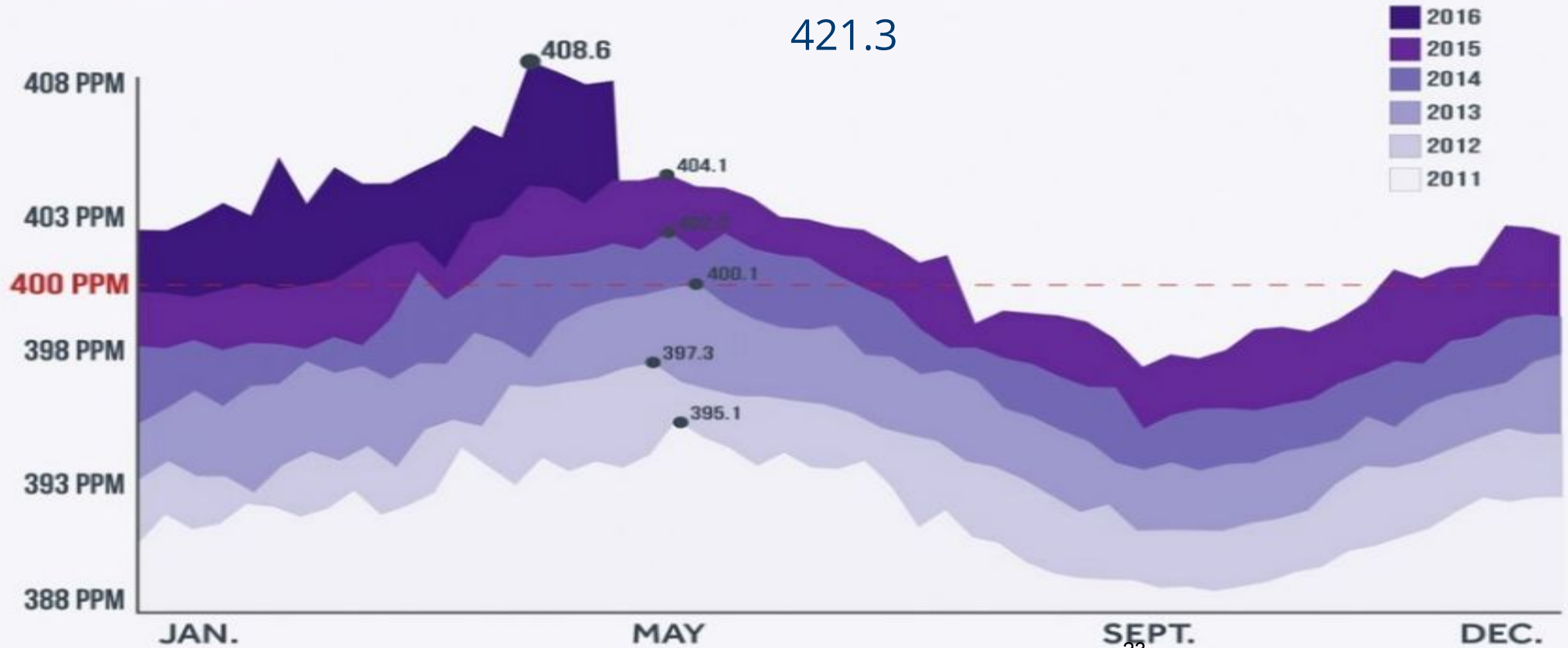
2022 was also third highest in total costs (behind 2017 and 2005), with a price tag of at least \$165.0 billion. This total annual cost may rise by several billion when we've fully accounted for the costs of the December 21-26 Central and Eastern winter storm/cold wave.

# Waste Energy adds to CO2 (Blanket)

## Climbing CO2

A higher peak each year

Today...  
we are at  
421.3



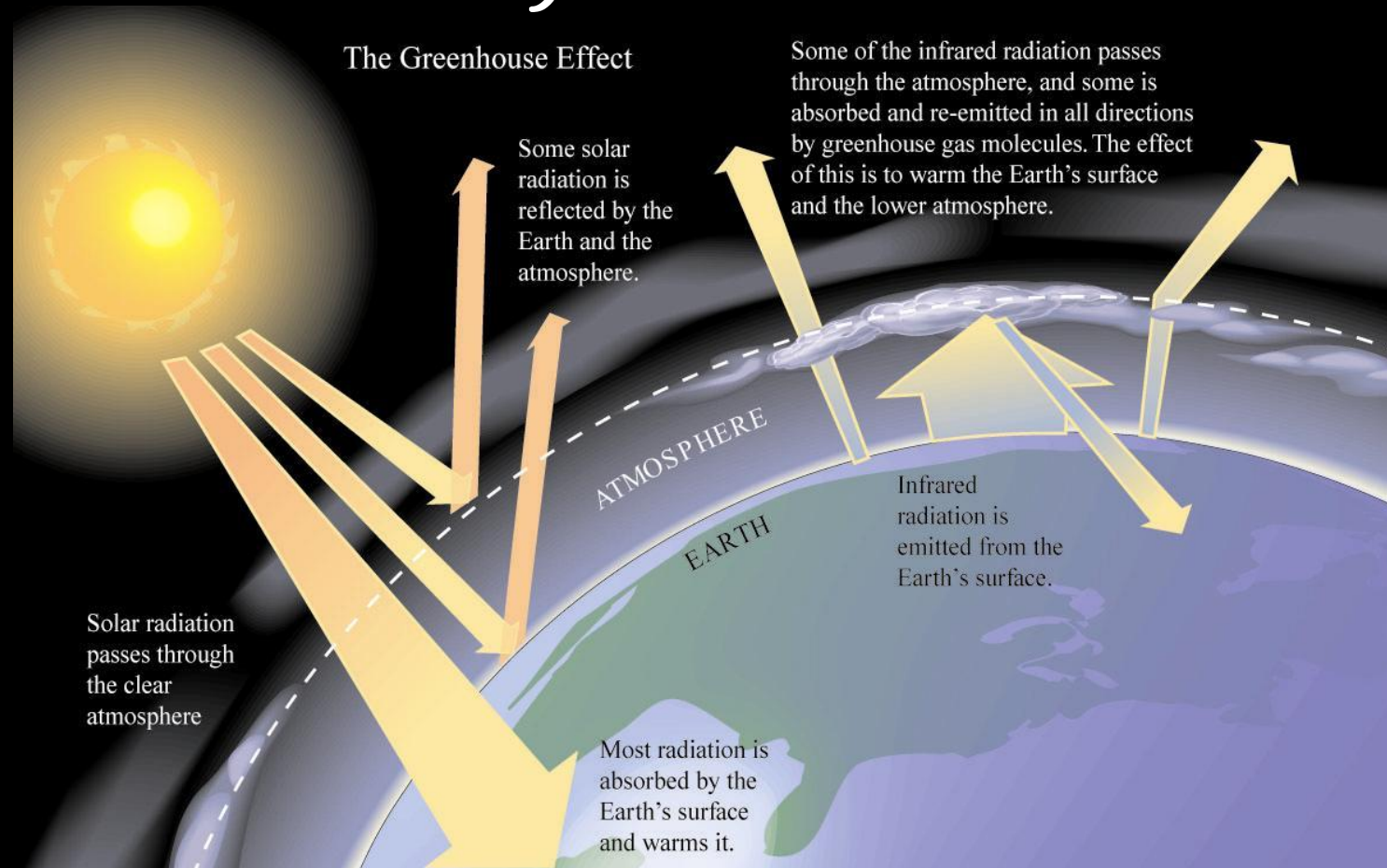
# Physics of Climate Change

Energy In = Energy Out

CO<sub>2</sub> and Methane slows escaping heat.

Last 50 years global temperature up 2 degrees.

Fever.....98.6 F to 100.6 F.



# The Price of Carbon in Lives! Europe??

The Human Cost of climate change

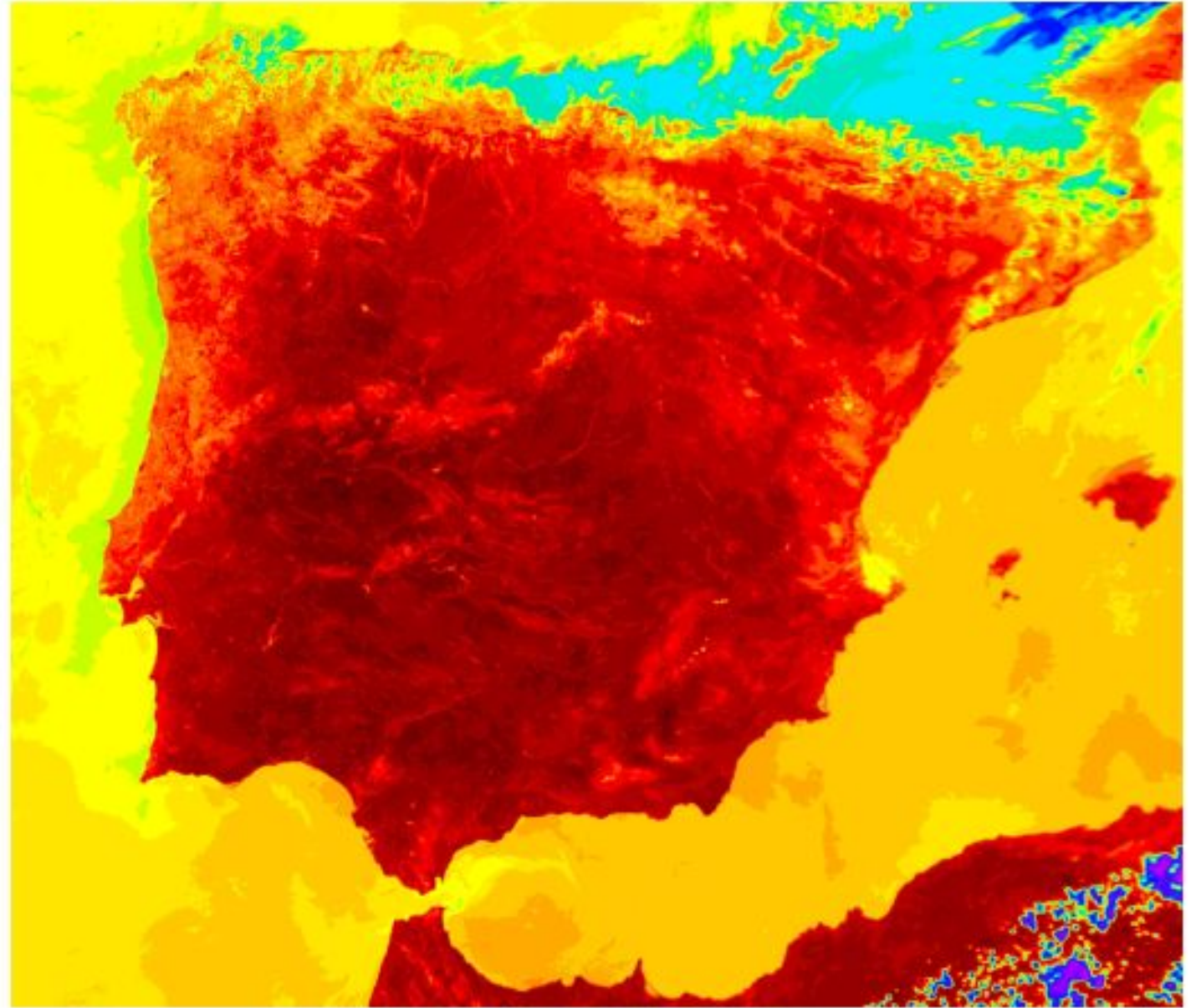
(37,000 people died in Spain in 2003)

2004

Surface = 138 F

Air = 117 F

Heat waves



Less than a year after a devastating 2003 heat wave killed over 37,000 people across Europe, another heat wave struck the region. On July 1, 2004, this image from NASA's Moderate Resolution Imaging Spectroradiometer (MODIS) recorded land surface temperatures of 138°F (59°C) in Spain. In this false-color image, red represents the warmest temperatures, yellow is intermediate, and light and dark blue are progressively cooler. Air temperatures in both countries soared over 104°F (40°C). Three days after this image was taken, Spain set a new air temperature

**North Shore School District 112  
Investment Tax Credit Summary**

Project	Begin Construction	Eligible Basis	Base 6% Credit	PWA Compliance			Does Not Meet Domestic Content PWA Compliance			Tax-Exempt Financed PWA Compliance				Tax-Exempt Financed Does Not Meet Domestic Content PWA Compliance				
				30% Credit	Energy Community	Domestic Content	Total Credits	Base Credit	Energy Community	Total Credits	Base Credit	Energy Community	Domestic Content	Total Credits	Base Credit	Energy Community	Domestic Content	Total Credits
					10% Bonus	10% Bonus			Bonus			Bonus	Bonus			Bonus		
Ravinia	2024	7,081,000	424,860	2,124,300	708,100	708,100	3,540,500	1,911,870	637,290	2,549,160	1,805,655	601,885	601,885	3,009,425	1,593,225	531,075	2,124,300	
Wayne Thomas	2025	5,050,000	303,000	1,515,000	505,000	505,000	2,525,000	1,287,750	429,250	1,717,000	1,287,750	429,250	429,250	2,146,250	1,136,250	378,750	1,515,000	
Sherwood	2025	4,350,000	261,000	1,305,000	435,000	435,000	2,175,000	1,109,250	369,750	1,479,000	1,109,250	369,750	369,750	1,848,750	978,750	326,250	1,305,000	

Notes:

Not meeting Domestic Content for beginning of construction in 2024 result in a 10% reduction in the base tax credits.  
 Not meeting Domestic Content for beginning of construction in 2025 result in a 15% reduction in the base tax credits.  
 Not meeting Domestic Content for beginning of construction in 2026 result in NO tax credits for direct pay taxpayers.

Using tax-exempt financing results in a separate 15% reduction in the base tax credits.