



***Hedge Against Skyrocketing  
Electricity Costs***

***Lessons Learned from Industry  
Leaders with Onsite Solar:  
Why Now Is  
the Right Time to Lock in a  
Lower Energy Rate!***

**Seth Parker**

**VP & GM**

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# Introductions

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## Project Team



Seth Parker, CEM  
VP. & GM., Melink Solar & Geo

- Melink Tenure: 7 Years
- B.A. Economics – Wittenberg University
- M.S. Renewable & Clean Energy Engineering - UD
- Over 100 MWs of solar EPC experience
- Fun fact: Amateur bee-keeper





# OUR NET-ZERO HEADQUARTERS

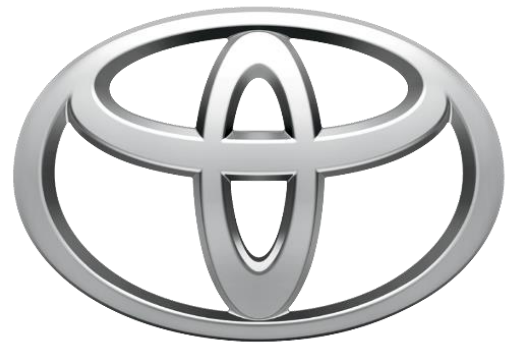
*Come tour Melink HQ in Cincinnati!*



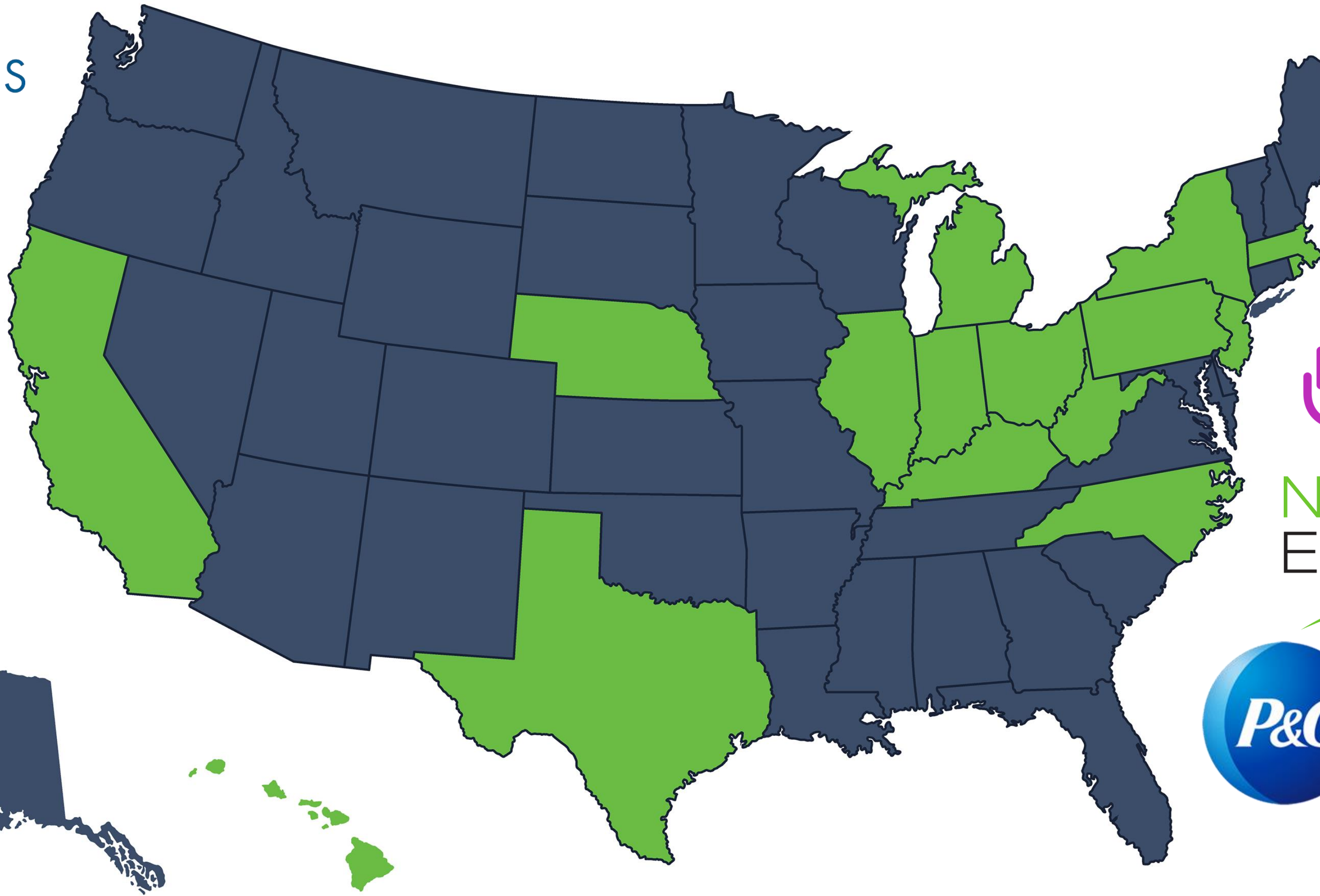
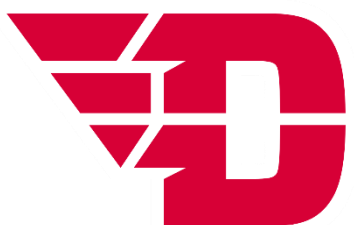


# MELINK SOLAR FOOTPRINT

Designing and building solar PV systems with over 115 MWs of experience nationwide



TOYOTA





# MELINK ELECTRIC BILLS

## Your usage snapshot - Continued

		Choice Service ID 99001770000072110000000000
<u>Meter Number</u>	<u>Usage Type</u>	<u>Billing Period</u>
328933657	Actual	May 10 - Jun 8
<u>Usage Values</u>		
Billed kWh		0.000 kWh
Actual kVA		27.478 kVA
Actual Demand-kW		47.040 kW
Billed Demand-kVA		27.478 kVA
Power Factor		89.822 %

## Billing details - Electric

<b>Billing Period - May 10 to Jun 08</b>	
<b>Meter - 328933657</b>	
Net Metering - Credit	\$-208.82
<b>Duke Energy Delivery</b>	
Service Delivery	
Distribution-Customer Charge	45.95
Delivery Riders	12.08
Generation Riders	0.11
<b>Total Current Charges</b>	<b>\$-150.68</b>

## Your Energy Bill

Page 1 of 3

**Service address**  
MELINK PROPERTIES LLC  
5130 RIVER VALLEY RD  
MILFORD OH 45150

**Bill date** Jun 10, 2022  
**For service** May 10 - Jun 8  
30 days

**Mail your payment at least 7 days before the due date or pay instantly at [duke-energy.com/billing](https://duke-energy.com/billing). Late payments are subject to a 1.5% late charge.**

Amount due

**\$0.00**

*No payment is required at this time.*





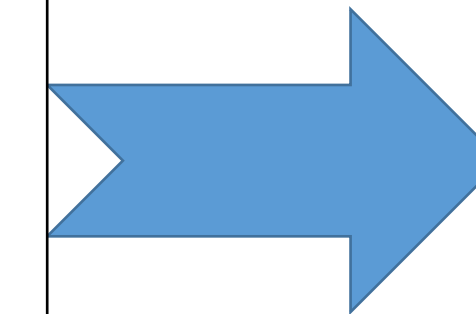
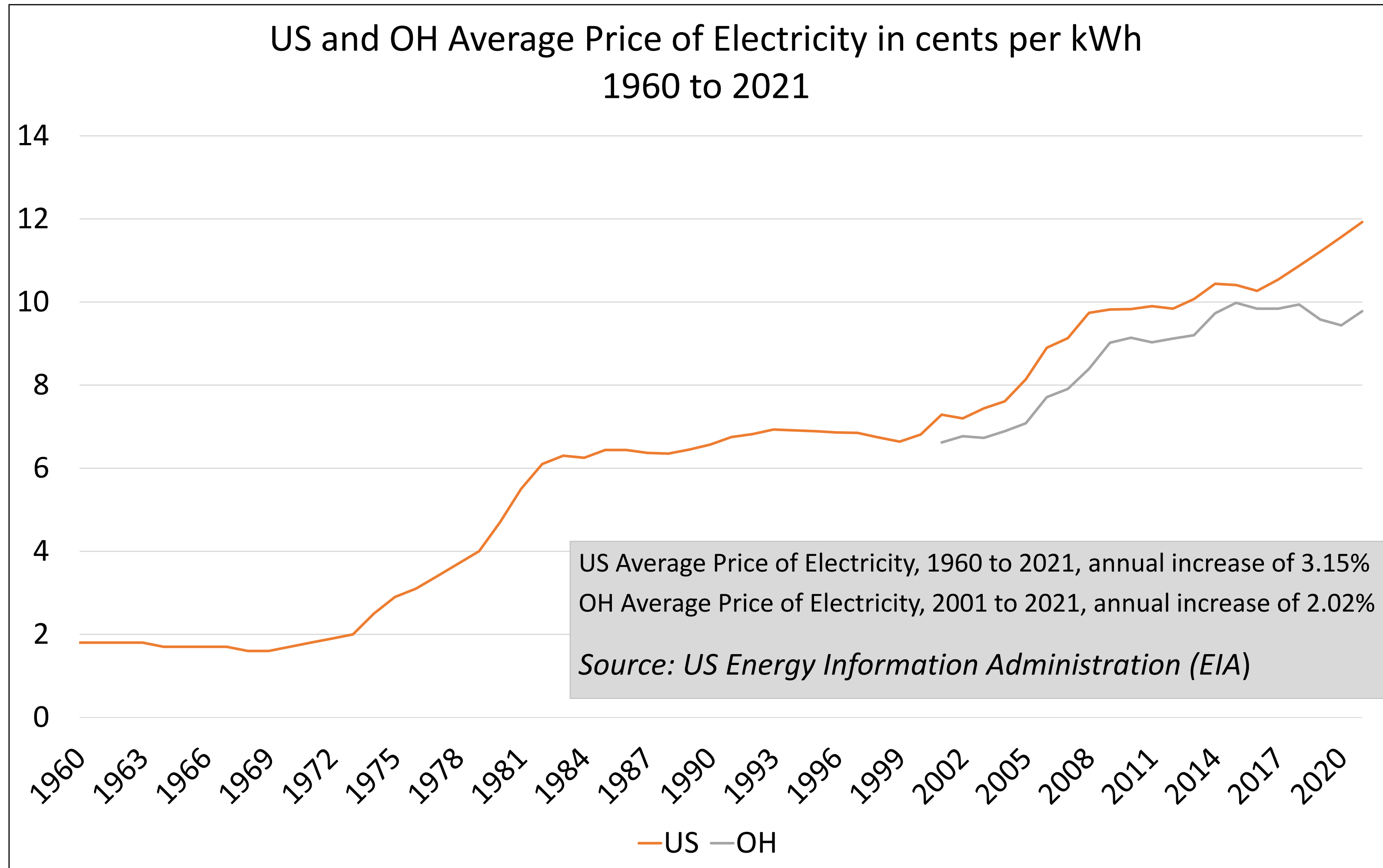
# YOUR COST OF ELECTRICITY



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# Increasing Electricity Price Trends

National average increase of 3.15% per year between 1960 and 2021



What impact will future unpredictable operational costs have on your organization?

**YOU CAN PREVENT THIS FROM HAPPENING!**



CONFIDENTIAL

# Grid Power: Rising Costs and Our Future



- Aging and Future Strain on Grid
- Infrastructure Spending
- Future Energy Prices
- Utility Plant Need Upgrades
- Geo-Political

- Lowest Cost Option
- Carbon Tax
- Shift Towards Clean Energy
- No Longer Burning Dirty Fossil Fuels
- Federal Incentives



# Grid Power: Rising Costs and Our Future

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- **Electricity prices jumped 51%**, to \$80.28/MWh, in the first quarter of 2022 from \$53.30/MWh in that period a year ago in the PJM Interconnection wholesale market, partly driven by an increase in natural gas prices.
- In New England, **wholesale power costs soared 83%, to \$137/MWh**, in the first three months this year compared with \$75/MWh in the same period last year.
- “The culprit is the high and accelerating price of natural gas, largely driven by LNG exports,” Paul Cicio, President and CEO of Industrial Energy Consumers of America, a trade group, said Friday in an email.
- Duke Energy Indiana asked the Indiana Utility Regulatory Commission to approve rate hikes of up to 16% for residential customers, **up to 20.3% for commercial customers and up to 25.7% for industrial customers in response to rising fuel costs**
- **AES Ohio supply charges to rise from 4.8 cents to 10.9 cents per kWh**
- Sources:
- <https://www.whio.com/news/local/aes-ohio-supply-charges-rise-48-cents-109-cents-per-kwh-how-that-changes-your-bill/HF3V7Y3GP5BIRA6UMGEWSLWIVY/>
- [https://www.utilitydive.com/news/power-electricity-prices-pjm-new-england-gaslng/623724/?utm\\_source=SolarWakeup&utm\\_campaign=95fc721da0SolarWakeup\\_2\\_182\\_16\\_2013\\_COPY\\_01&utm\\_medium=email&utm\\_term=0\\_5eaa0aab62-95fc721da0-44297456&mc\\_cid=95fc721da0&mc\\_eid=d4a645598](https://www.utilitydive.com/news/power-electricity-prices-pjm-new-england-gaslng/623724/?utm_source=SolarWakeup&utm_campaign=95fc721da0SolarWakeup_2_182_16_2013_COPY_01&utm_medium=email&utm_term=0_5eaa0aab62-95fc721da0-44297456&mc_cid=95fc721da0&mc_eid=d4a645598)



# COST IMPLICATIONS OF WAITING

Utility prices skyrocketing = Missed Savings Now!

Supplier	2021-2022 rate (per kWh)	2022-2023 rate (per kWh)	Percent Increase	Monthly Increase to Electric Bill (if using 1,000 kWh/month)
AES Ohio	\$0.04805	\$0.1091	127.1%	\$61.05
AEP Ohio	\$0.0515	\$0.0693	34.6%	\$17.80
Duke Energy	\$0.0507	\$0.0648	27.8%	\$14.15
FirstEnergy – Ohio Edison	\$0.0521	\$0.0651	24.9%	\$13.03
FirstEnergy – Cleveland Electric Illuminating	\$0.0537	\$0.0656	22.2%	\$11.85
FirstEnergy – Toledo Edison	\$0.0544	\$0.0658	20.9%	\$11.43

**HOW MUCH WILL THE COST OF GRID POWER CONTINUE TO INCREASE?**



# Why Solar Now?



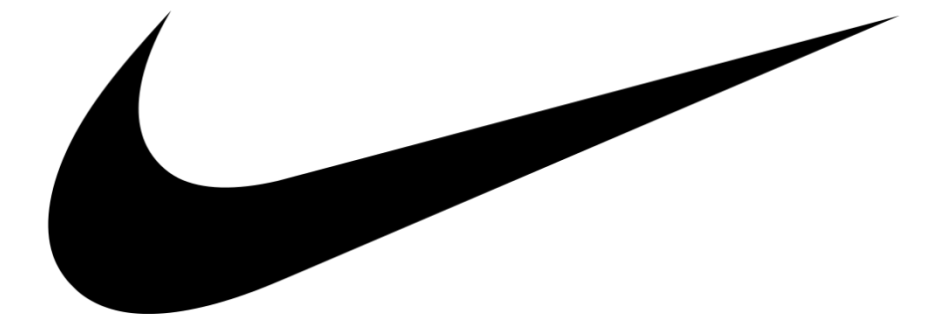


# Market Trends – The Future of Renewables

Sustainable practices don't just benefit the environment— they help organizations' bottom lines

## Over 300 Companies

Committed to going 100% renewable





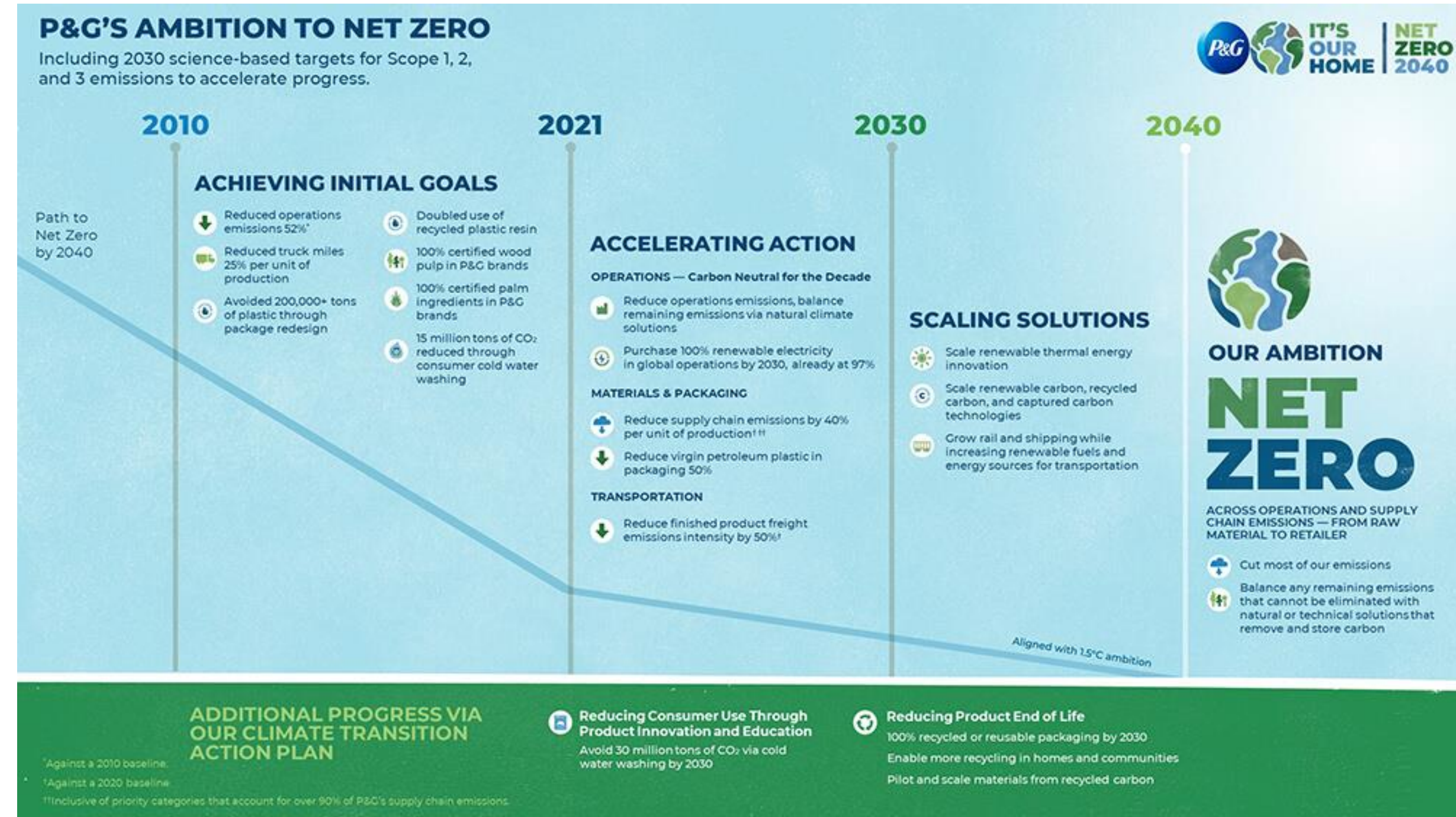
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# P&G Improving Bottom-Line AND Brand



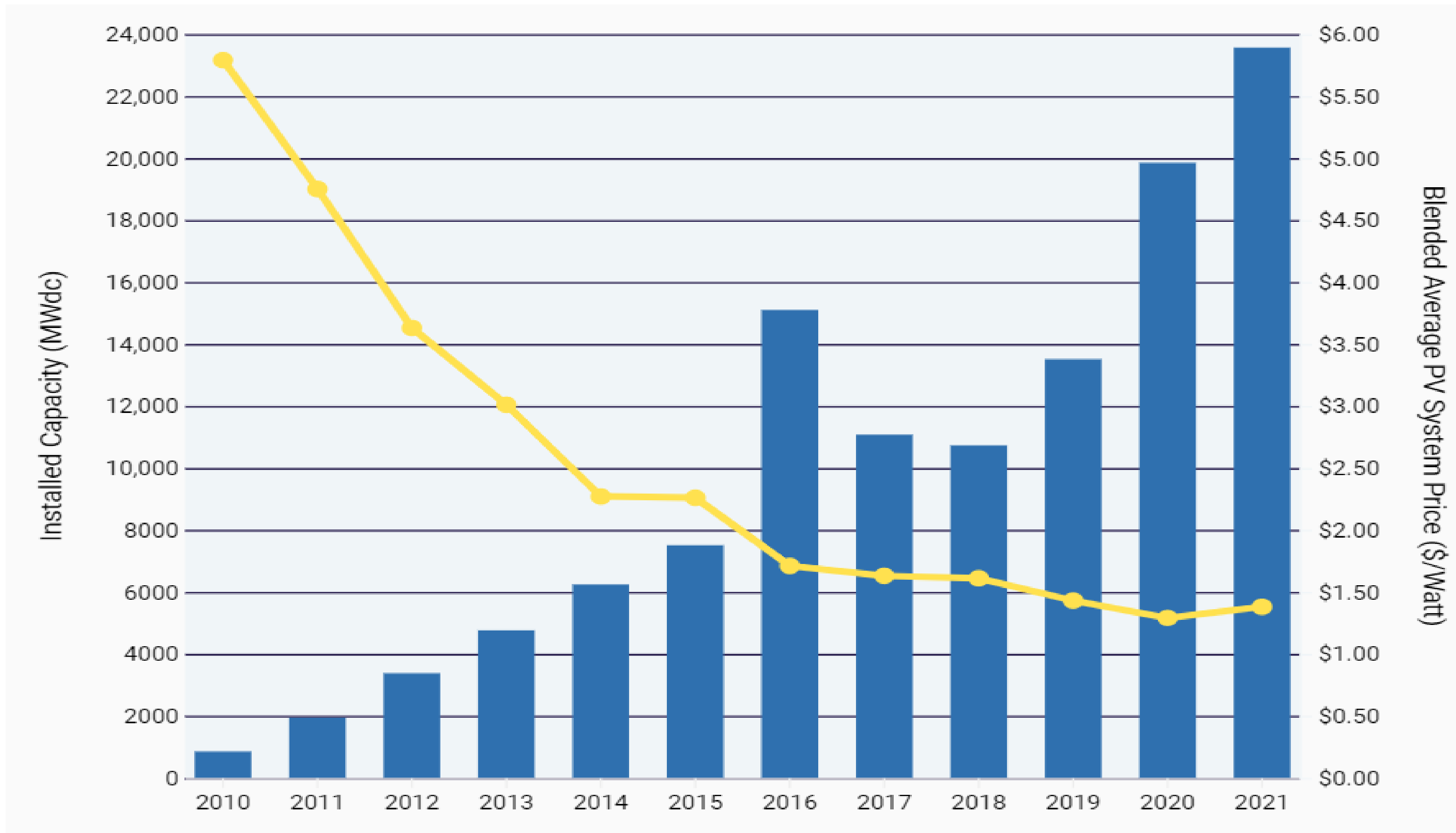
Cincinnati firm turning empty land into long-term energy cost savings, reducing carbon emissions

## P&G's PATH TO NET ZERO: ONSITE SOLAR





# Historic Price Trends



Source: [SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight 2020 Q2](#)











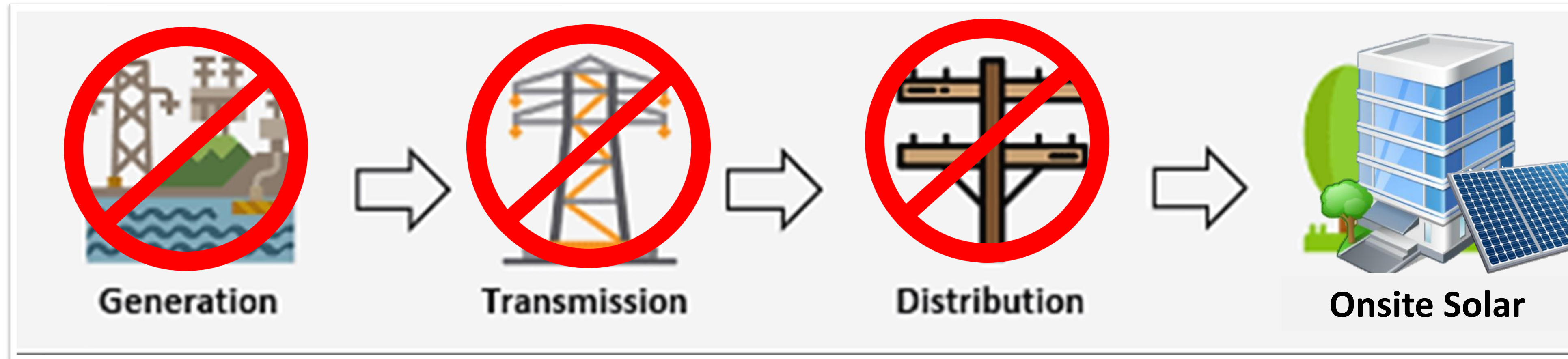
A large array of solar panels is shown in a grassy field under a blue sky with light clouds. The panels are arranged in rows and are tilted towards the sun. The text "Onsite Solar" is overlaid in the center of the image.

# Onsite Solar



# WHY ONSITE SOLAR?

**Onsite Solar: Avoidance of generation costs, transmission and distribution charges**

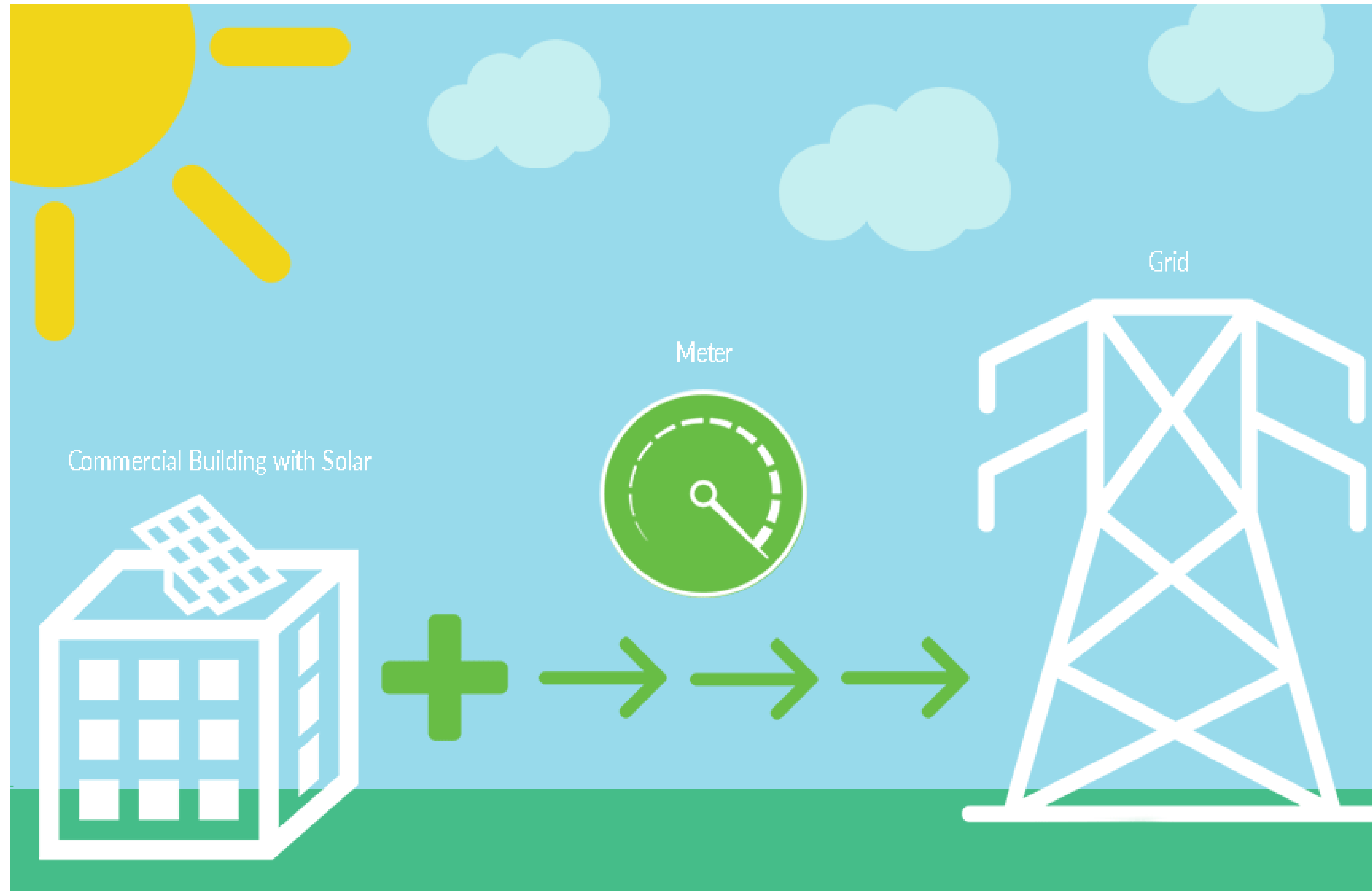


**Offsite Solar: ONLY avoiding generation costs – Swap supplier – Less savings**



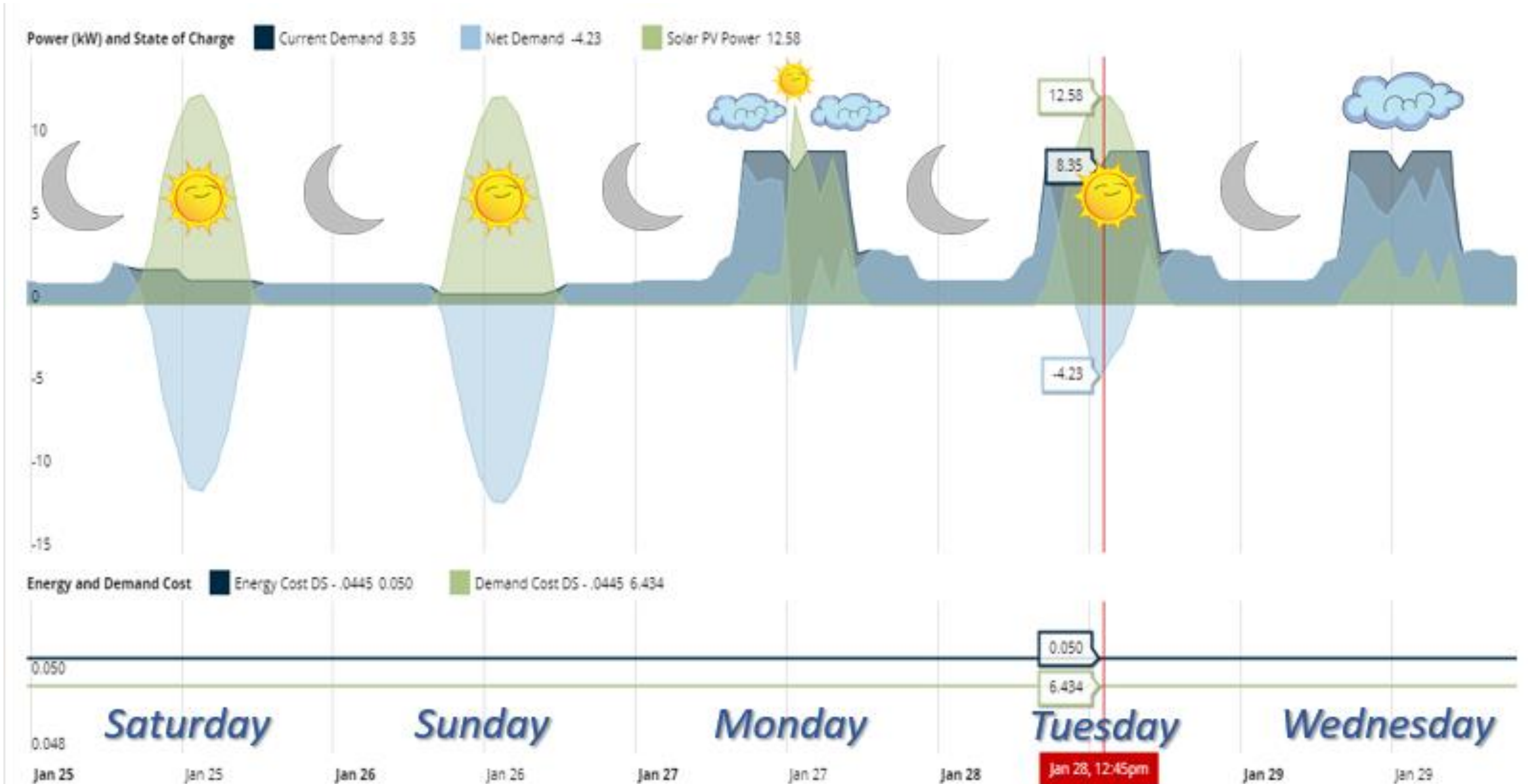


# ONSITE SOLAR: BEHIND THE METER





# Net Metering Graph - Office Building Example





A large array of solar panels is shown in a grassy field under a blue sky with light clouds. The panels are arranged in rows and are tilted towards the sun. The text "Financing Options" is overlaid in the center of the image.

# Financing Options



# Cash Purchase vs. PPA

	Purchase	Property Assessed Clean Energy (PACE)	Power Purchase Agreement (PPA)
Upfront Cost	\$\$\$	Zero	Zero
Tax Benefits:	Owner	Owner	Third party investor
Payments	100% Upfront	Tax bill	Monthly
Typical Term	N/A	20-30 years	20-30 years
Long Term Benefits	Best ROI	Cash flow neutral	Fixed rate for 30-years
O&M	Owner	Owner	Third party investor



# Net-Zero Energy – Case Study





# Specifications and Production

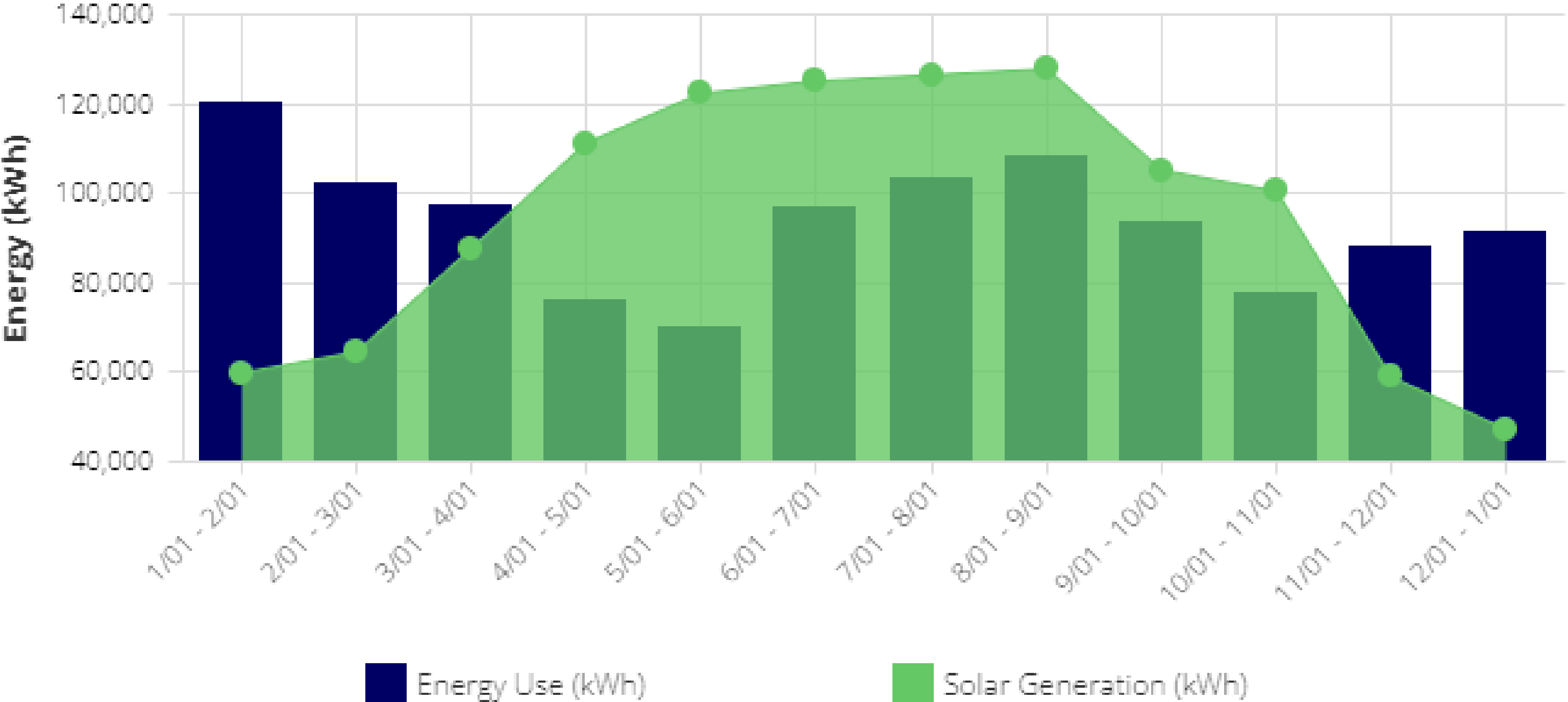
## SYSTEM SIZE

Equipment Power Rating: 854.1 kW-DC  
 Nameplate Power Rating: 625.0 kW-AC

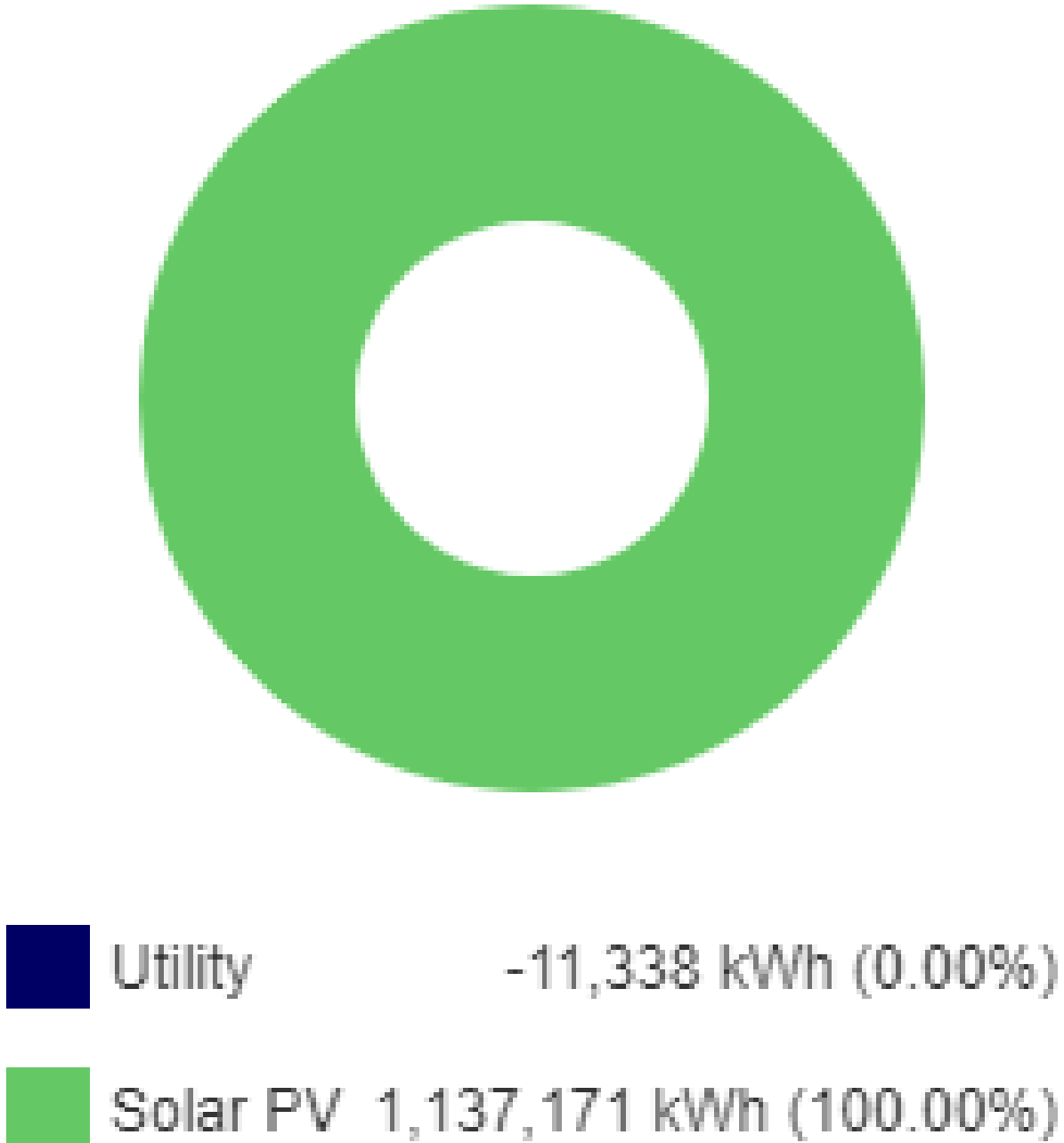
## SYSTEM PRICE

Solar PV System Cost and Incentives	
Solar PV System Cost	\$1,600,000
Federal - MACRS Bonus Depreciation	-\$285,600
State (OH) Depreciation	-\$48,000
Federal Tax Credit	-\$480,000
<b>Net Solar PV System Cost</b>	<b>\$786,400</b>

Monthly Energy Use vs Solar Generation



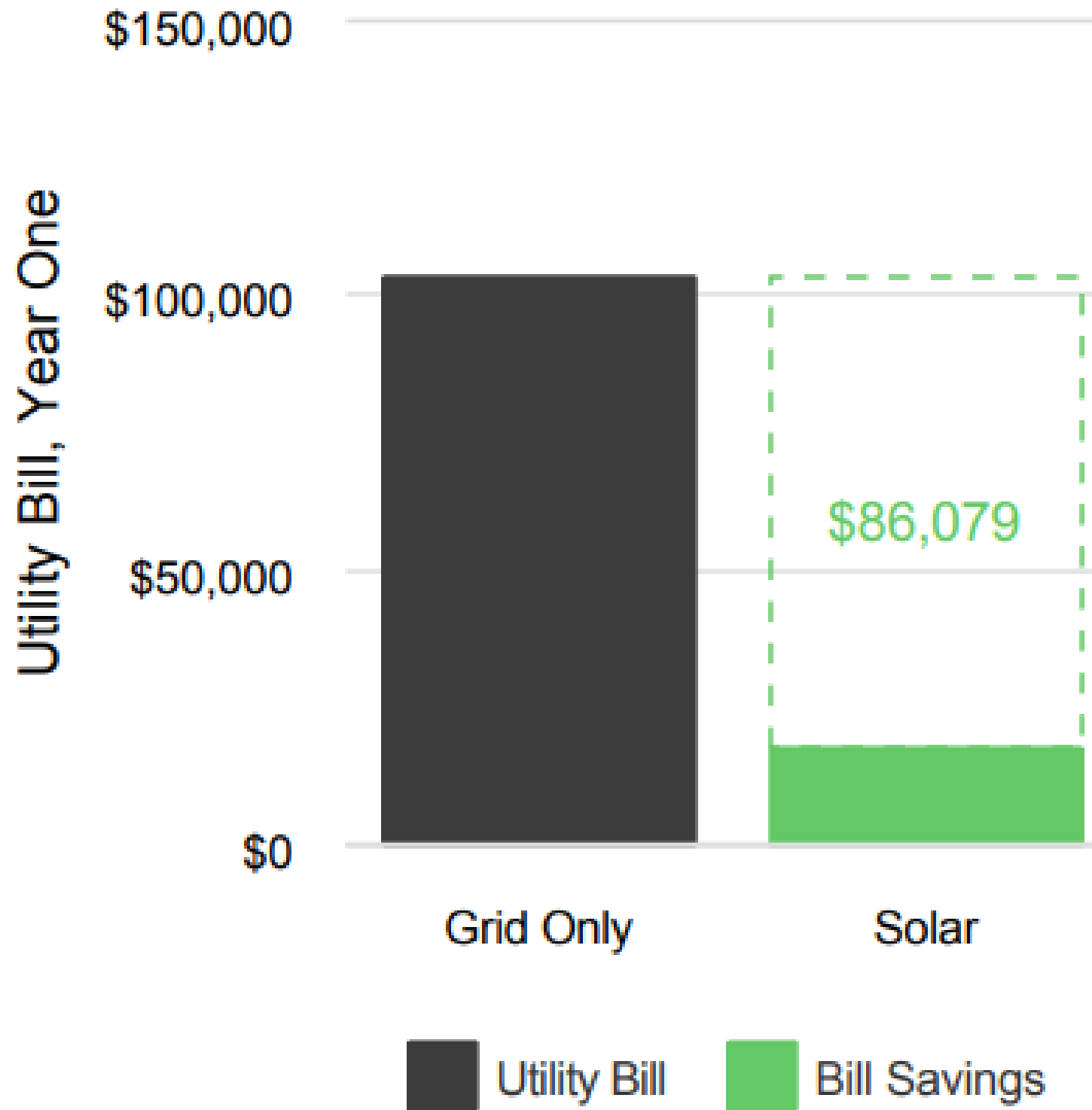
Energy Mix





# Solar PV Economics

## ELECTRIC BILL



## BLENDED ELECTRIC RATE

**Current Blended Electric Rate = \$0.092/kWh**  
**Blended Rate Savings, Year One = \$0.076/kWh**

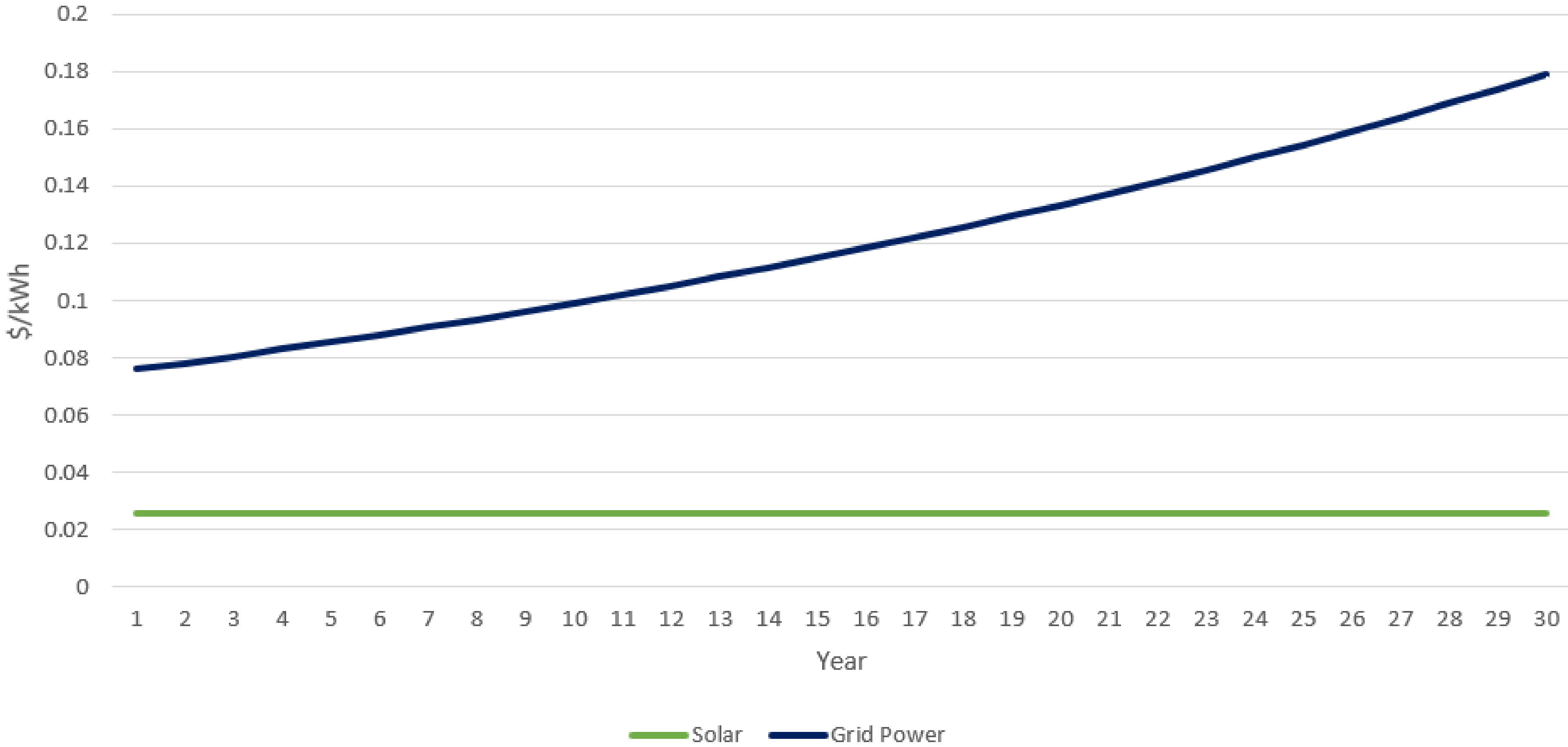
Your Blended Electric Rate is the sum of all annual fixed, energy, and demand charges on your electric bill, divided by the total energy consumption (kWh) on the following page. Because solar doesn't impact fixed charges and some demand charges, you'll see the Blended Rate Savings is less than your Blended Electric Rate.

## 30-YEAR LEVELIZED COST OF ENERGY (LCOE)

**Cash Purchase - W/ Inverters**  
**Current LCOE: \$0.146/kWh**  
**PV LCOE: \$0.026/kWh**

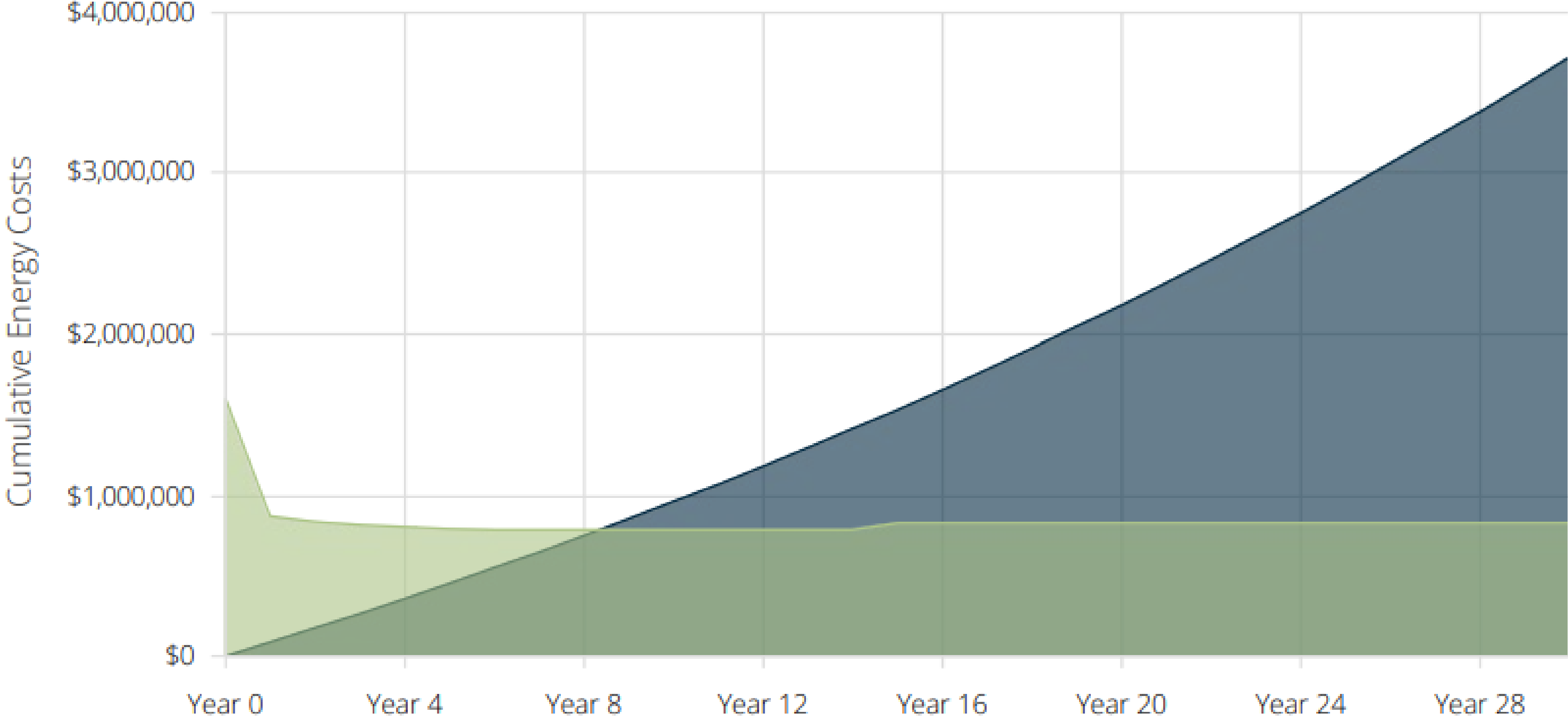


# Levelized Cost of Energy (LCOE)





# Cumulative Cost of Energy





# Cashflow

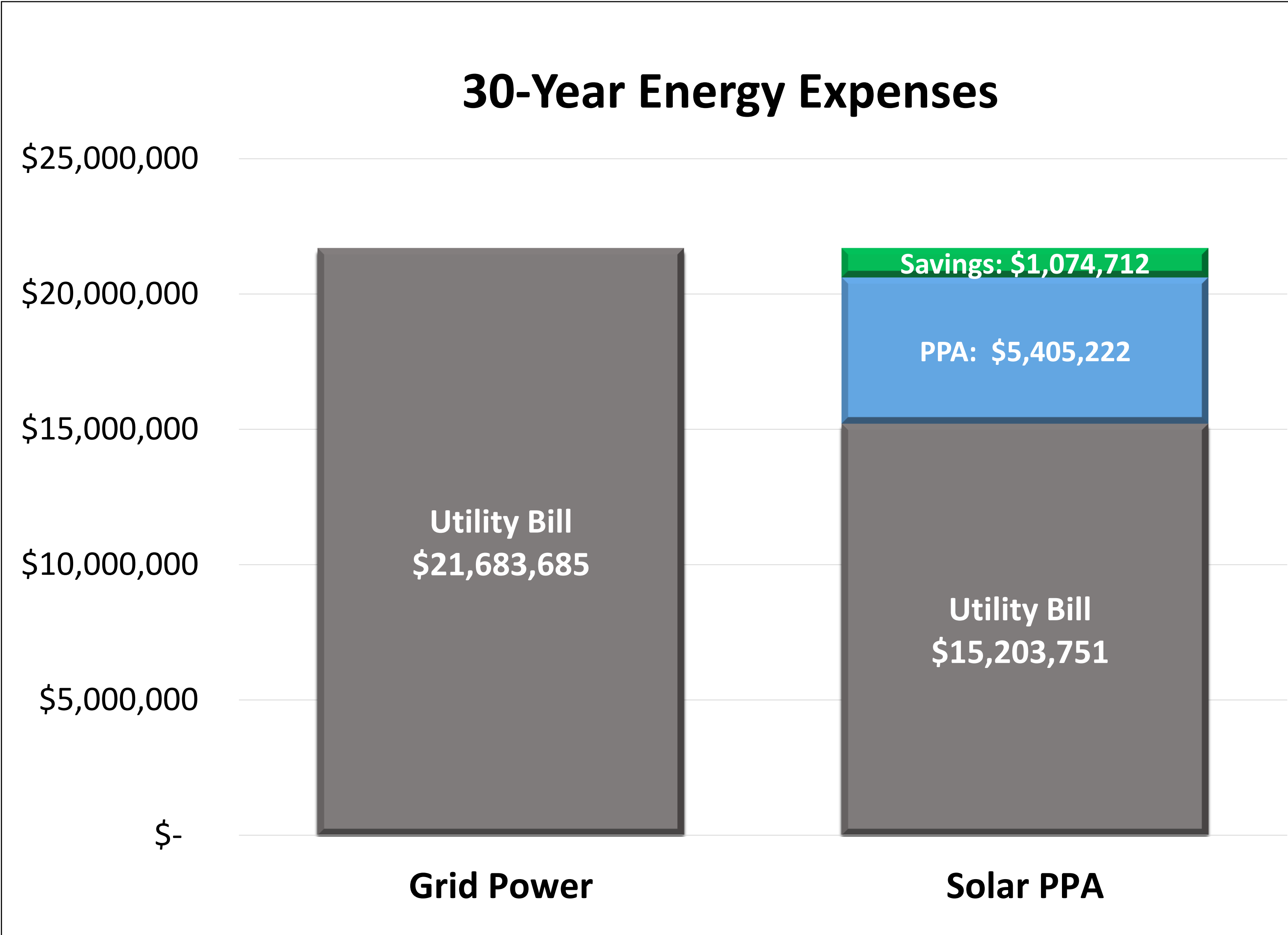
Years	Cash			PV Generation (kWh)	State Taxes Income Decrease (State (OH) Depreciation)	Federal Taxes		Total Cash Flow	Cumulative Cash Flow
	Project Costs	New Inverters	Electric Bill Savings			Income Decrease (Federal - MACRS Bonus Depreciation)	Federal Tax Credit		
Upfront	<b>-\$1,600,000</b>	-	-	-	-	-	-	<b>-\$1,600,000</b>	<b>-\$1,600,000</b>
1	-	-	\$86,079	1,137,172	\$9,600	\$239,904	\$480,000	\$815,583	<b>-\$784,417</b>
2	-	-	\$88,174	1,130,917	\$15,360	\$18,278	-	\$121,812	<b>-\$662,605</b>
3	-	-	\$90,317	1,124,663	\$9,216	\$10,967	-	\$110,500	<b>-\$552,105</b>
4	-	-	\$92,509	1,118,409	\$5,530	\$6,580	-	\$104,619	<b>-\$447,486</b>
5	-	-	\$94,751	1,112,154	\$5,530	\$6,580	-	\$106,861	<b>-\$340,625</b>
6	-	-	\$97,045	1,105,900	\$2,765	\$3,290	-	\$103,100	<b>-\$237,525</b>
7	-	-	\$99,391	1,099,645	-	-	-	\$99,391	<b>-\$138,134</b>
8	-	-	\$101,790	1,093,391	-	-	-	\$101,790	<b>-\$36,344</b>
9	-	-	\$104,244	1,087,136	-	-	-	\$104,244	\$67,901
10	-	-	\$106,754	1,080,882	-	-	-	\$106,754	\$174,655
11	-	-	\$109,320	1,074,627	-	-	-	\$109,320	\$283,975
12	-	-	\$111,945	1,068,373	-	-	-	\$111,945	\$395,920
13	-	-	\$114,628	1,062,119	-	-	-	\$114,628	\$510,548
14	-	-	\$117,372	1,055,864	-	-	-	\$117,372	\$627,919
15	-	<b>-\$42,705</b>	\$120,177	1,049,610	-	-	-	\$77,472	\$705,391
16	-	-	\$123,044	1,043,355	-	-	-	\$123,044	\$828,435
17	-	-	\$125,976	1,037,101	-	-	-	\$125,976	\$954,411
18	-	-	\$128,973	1,030,846	-	-	-	\$128,973	\$1,083,384
19	-	-	\$132,036	1,024,592	-	-	-	\$132,036	\$1,215,420
20	-	-	\$135,167	1,018,337	-	-	-	\$135,167	\$1,350,587
21	-	-	\$138,367	1,012,083	-	-	-	\$138,367	\$1,488,954
22	-	-	\$141,637	1,005,829	-	-	-	\$141,637	\$1,630,591
23	-	-	\$144,979	999,574	-	-	-	\$144,979	\$1,775,570
24	-	-	\$148,394	993,320	-	-	-	\$148,394	\$1,923,964
25	-	-	\$151,883	987,065	-	-	-	\$151,883	\$2,075,847
26	-	-	\$155,449	980,811	-	-	-	\$155,449	\$2,231,296
27	-	-	\$159,091	974,556	-	-	-	\$159,091	\$2,390,387
28	-	-	\$162,812	968,302	-	-	-	\$162,812	\$2,553,199
29	-	-	\$166,613	962,047	-	-	-	\$166,613	\$2,719,813
30	-	-	\$170,496	955,793	-	-	-	\$170,496	\$2,890,309
Totals:	<b>-\$1,600,000</b>	<b>-\$42,705</b>	\$3,719,414	31,394,473	\$48,000	\$285,600	\$480,000	\$2,890,309	-

**RESULTS IN 20+  
YEARS OF FREE  
ELECTRICITY**

**PLUS ADDITIONAL  
CASHFLOW**



# PPA Example

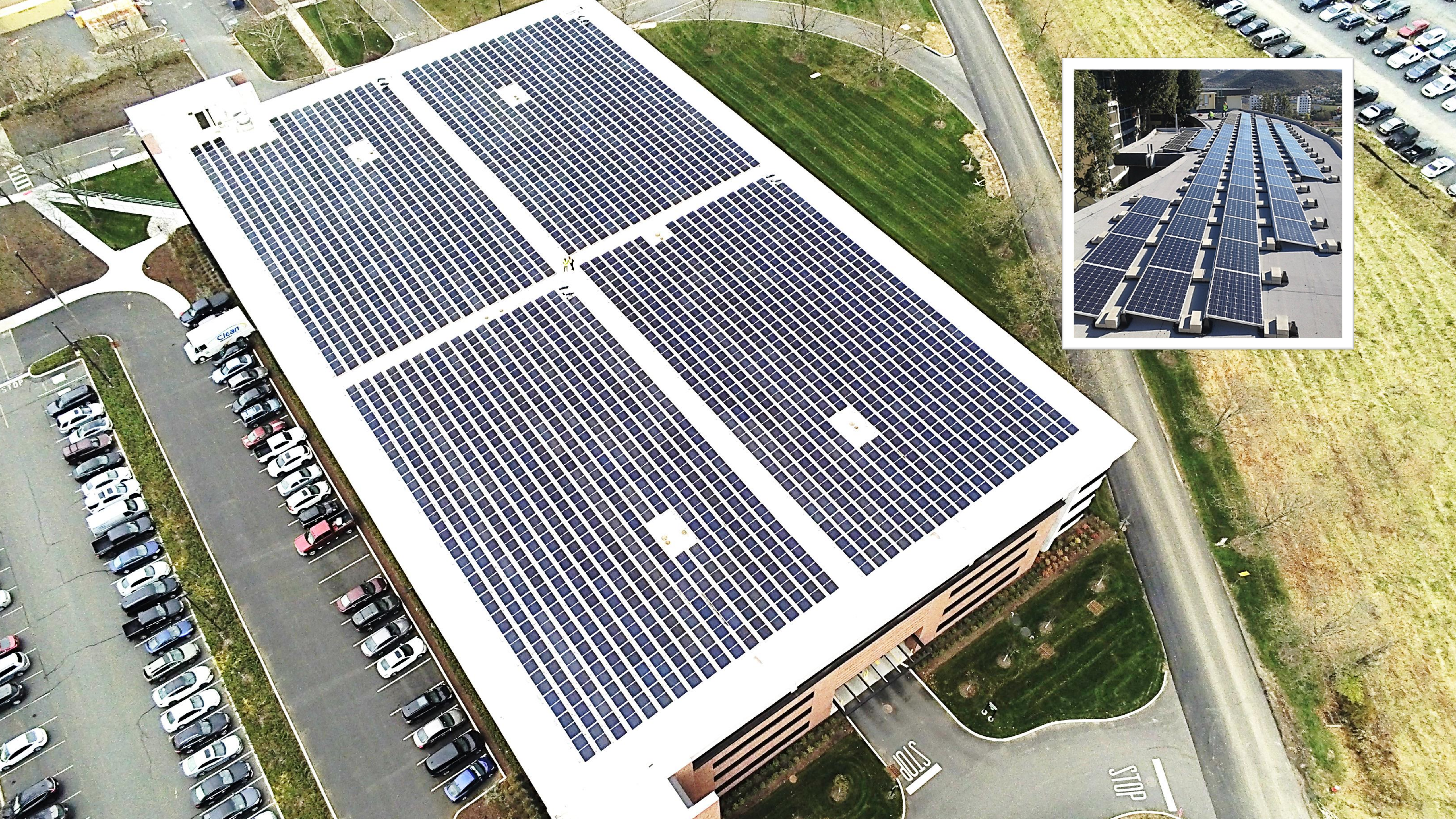






# INSTALLATION TYPES















# Villa Rose · Waialua Egg

Oahu, Hawaii

Fresh Air Chicken Canopies

1.4 MW DC

Completed 2018

COMMERCIAL SOLAR ENGINEERING,  
PROCUREMENT, AND CONSTRUCTION







COMMERCIAL SOLAR ENGINEERING,  
PROCUREMENT, AND CONSTRUCTION



Northern Ohio  
Fixed Tilt Ground Mounts  
2.25 MW DC  
Completed 2021

Kent State  
University















# LinkedIn

Omaha, Nebraska

Parking Lot Canopy

550 kW DC

Completed 2022

COMMERCIAL SOLAR ENGINEERING,  
PROCUREMENT, AND CONSTRUCTION

**Melink Solar**™





# Electrify America: Westfield Valley Fair Mall

San Jose, California

Parking Canopy

78 kW DC

Completed 2021

COMMERCIAL SOLAR ENGINEERING,  
PROCUREMENT, AND CONSTRUCTION











***ANY QUESTIONS?***

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Seth Parker joined Melink in 2015 to help change the world, one building at a time by assisting Melink's growing number of clients who are joining the clean energy revolution. Seth's primary responsibilities at Melink involve helping customers implement Solar PV systems at their commercial facilities to help them reach Net-Zero Energy. Before joining Melink, Seth specialized in conducting energy audits and implementing energy efficiency programs for large commercial facilities.

Seth holds a M.S. in Renewable and Clean Energy from the University of Dayton and a B.A. in Economics from Wittenberg University.

## **Melink Solar**

Melink Solar delivers the highest-quality solar PV engineering, procurement, and construction for Mid-Market to Fortune 100 companies, organizations, governments, developers, and utilities in the USA. Our Net Zero Energy campus in Cincinnati, Ohio serves as a model and test platform for some of the country's most energy-efficient buildings. One of the country's Top Solar Contractors, Melink Solar has been making solar power a reality since 2009. For more information, visit [www.melinksolar.com](http://www.melinksolar.com)