



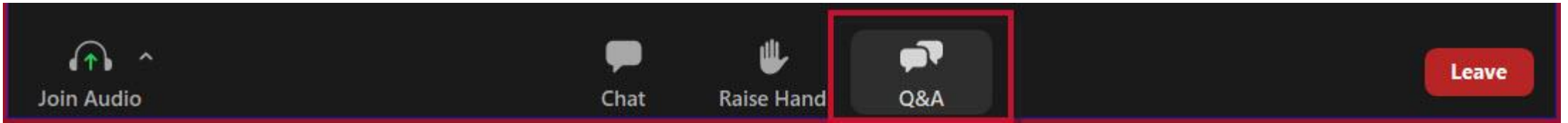
SUNSHARES

SOLAR MADE SIMPLE



Housekeeping

- Use the Q&A function to submit questions anytime during the presentation.



- Webinar is being recorded and will be posted at cityofpaloalto.org/workshops

Agenda

- SunShares Overview
- Solar Resources and Tools
- Planning and Optimizing Your Solar System
- Solar and Your Utility Bill
- Q&A

Benefits of Going Solar



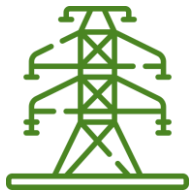
Financial

- Predictable electricity costs
- Discounted prices through SunShares
- 26% Federal Tax Credit for systems installed by Dec. 31, 2022
- [Improve the value of your home](#)



All-electric Future

- Charge your EV and electric appliances with your own electricity*
- Future-proof your home



Resiliency

- Rooftop solar combined with battery storage can provide back-up power during power outages

* Your solar system alone will not provide power during a blackout since it is connected to the grid. Consider adding battery storage for backup power.

SunShares





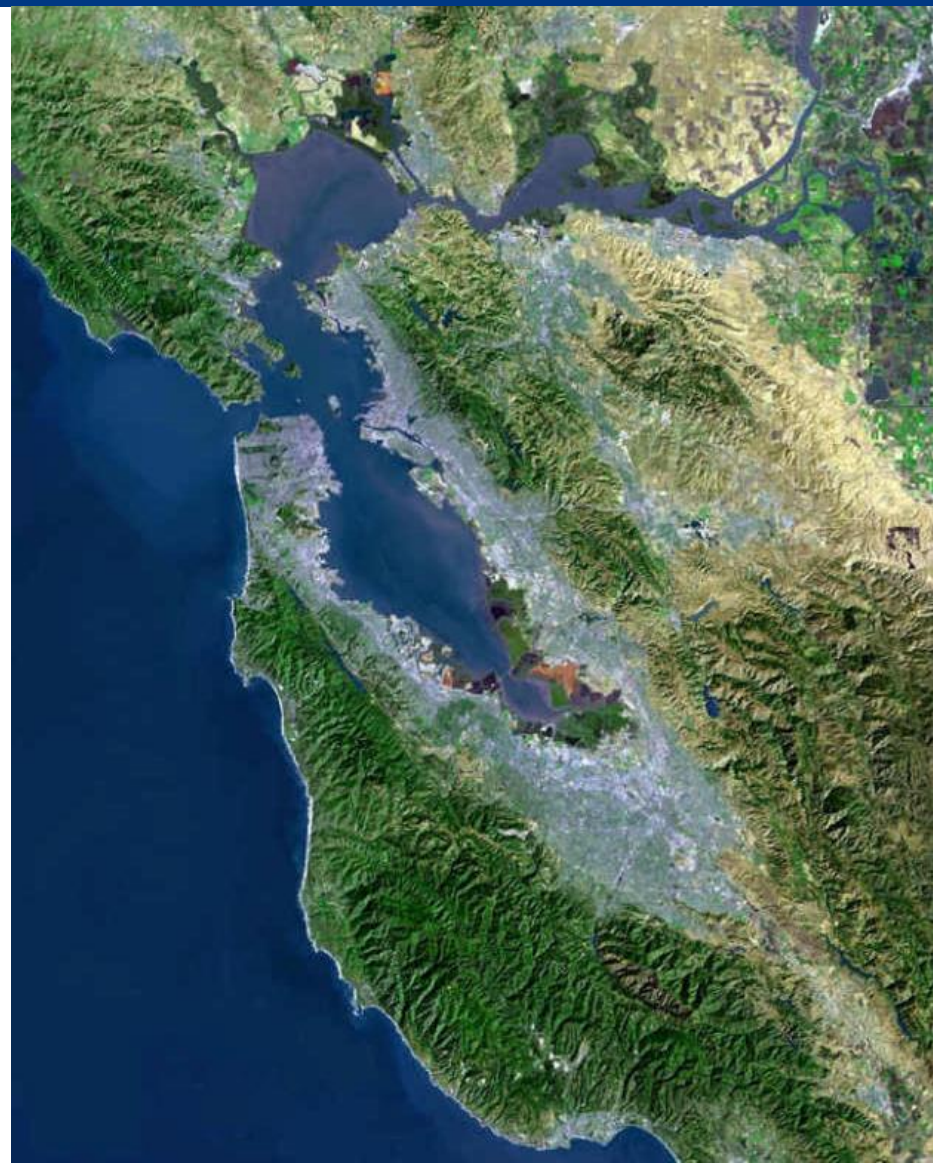
SUNSHARES

Simple. Affordable. Together.

Fall 2021 Informational Webinar

Bay Area SunShares

- **Solar + Storage discount program**
 - 15% on solar; 10% on battery storage
 - All Bay Area residents can participate
- **Our Goal:** Make clean energy more accessible and affordable, for a more sustainable and resilient Bay Area!
- **Annually from Sept 1st - Nov 30th**

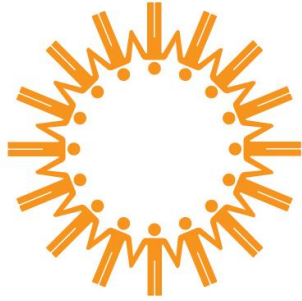


The Business Council on Climate Change

We are a membership nonprofit dedicated to incubating, scaling and sharing climate solutions.



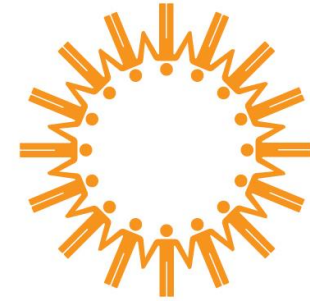
Why SunShares?



Work with pre-vetted,
quality solar installers
to make the **best**
decision for you



15% discount on Turnkey
Solar Installs, and **10%**
discount on Battery
Storage



Compare up to three
no-commitment solar
proposals -
for free!

***Since 2016, SunShares has helped 900+ homes install 4.5 Megawatts of solar energy
and 100+ battery storage units!***

SunShares in Palo Alto

Since 2016, Palo Alto has consistently led all cities in SunShares participation

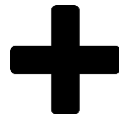
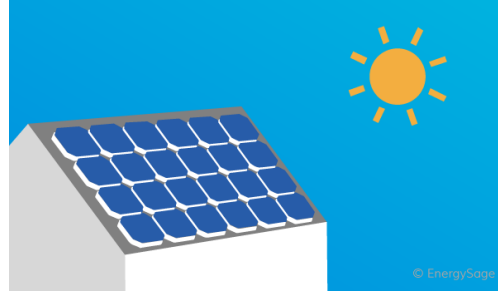
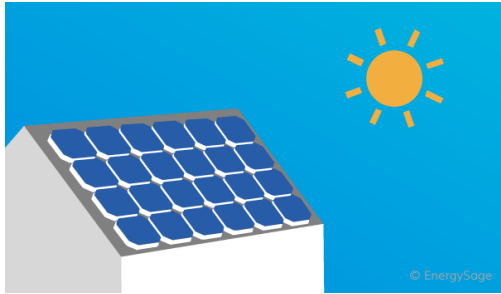
- Through Sunshares, 85 Palo Alto households have installed
 - over 480 kW of solar
 - 10 battery storage systems
- Currently, 5 contracts already signed



A photograph of a residential roof with solar panels. The roof is covered in brown shingles. Several large, dark blue solar panels are mounted on the roof, arranged in rows. In the background, there are green trees and a sky with soft, colorful clouds, suggesting a sunset or sunrise. An orange banner with white text is overlaid on the middle of the image.

How SunShares Works

Your Options with SunShares



**Already have
Solar**



Which option are you most interested in learning more about?

Our Selected Installers



The SunShares Process

What happens when you sign up?

1. Hear from selected installer(s) within 5-7 days
2. Installer conducts virtual roof evaluation, and a socially distant/ contactless site-visit
3. Receive and review your solar proposals
4. Sign a contract **by December 31, 2021**






Solar Discounts

- All prices reflect the **15% SunShares discount**
- Prices include system design, permits, warranties, equipment, labor, and monitoring.

Selected Installer	Module	Wattage	SunShares Price (\$/W)
	Misson Solar	345	\$2.95/W
	Hanwha Q.Cel Q.Peak-Duo-L-G8.2-430	430	\$2.97/W
	Solaria Power XT-400R-PM (Black on Black)	400	\$3.30/W
	LG All Black 425	425	\$3.50/W
	SunPower	410	\$3.70/W
	SunPower	335 Black Backsheet	\$3.35/W
	SunPower	415 White Backsheet	\$3.95/W

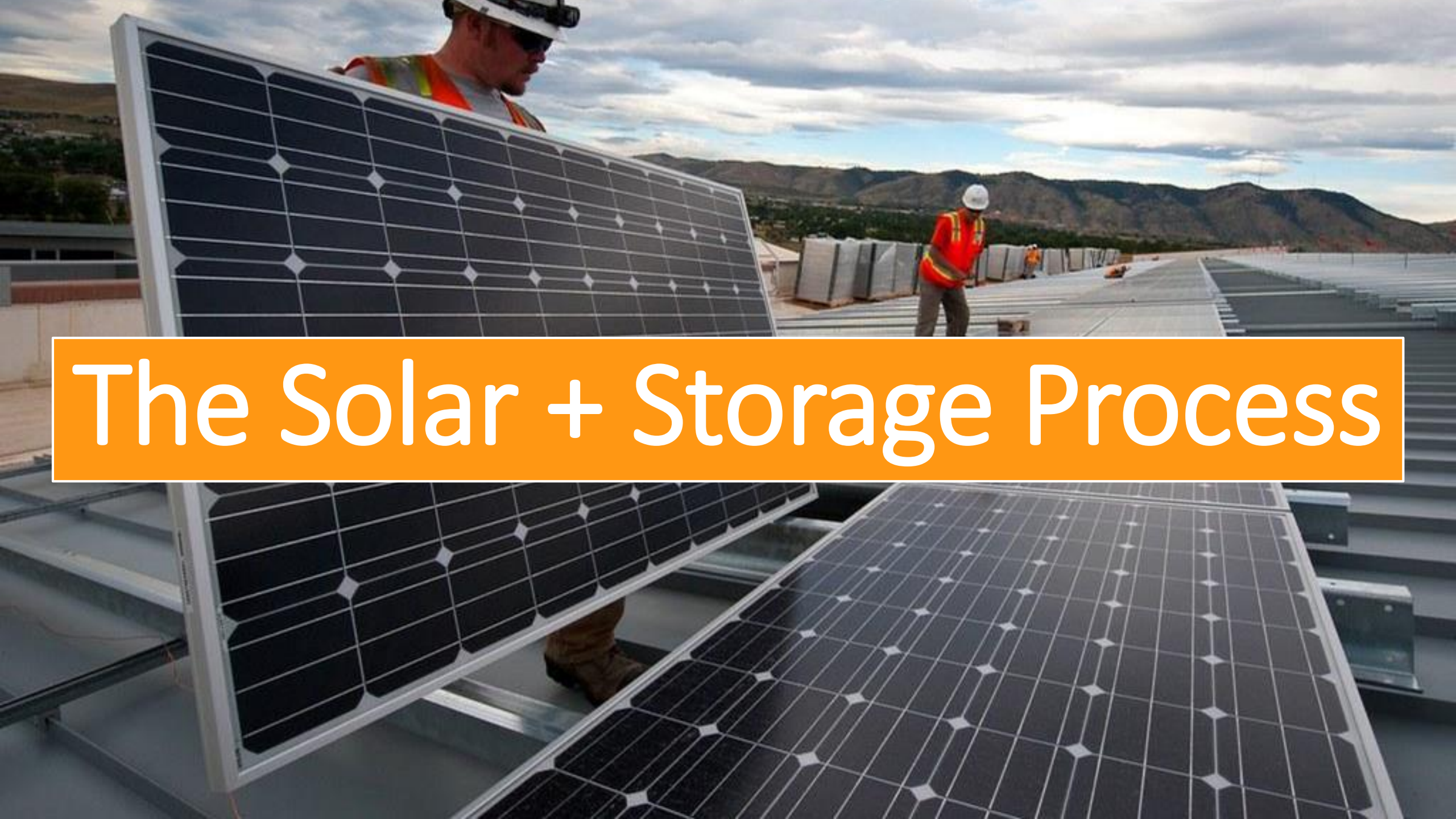
Battery Storage Discounts

- All prices reflect the **10% SunShares discount**
- Prices include battery unit, system design, permit, labor, and installation materials

Selected Installer	Module	Storage Capacity (kWh)	Paired with Solar Installation		Added to Existing Solar System	
			First unit price	Second unit price	First unit price	Second unit price
	Electriq	15 kWh	\$16,200	\$16,200	\$16,200	\$16,200
	Enphase Encharge	10 kWh	\$12,800	\$12,800	Not available	\$13,300*
	LG Chem RESU16H**	16 kWh	\$15,900	\$14,900	\$16,500	\$15,500
	Tesla Powerwall 2	13.5 kWh	\$14,500	\$13,500	\$15,500	\$16,500
	Tesla Powerwall 2	13.5 kWh	\$14,880	\$13,500	\$14,880	\$13,500

*Must purchase minimum of two Enphase Encharge batteries if adding storage to an existing solar system with Infinity Energy.

**The LG battery comes with a SolarEdge Energy Hub which has many added functions in addition to serving as an inverter.



The Solar + Storage Process

The Solar + Storage Proposal Process

Installers will evaluate...

- Roof exposure to sunlight
- Roof type, angle, and condition
- Energy usage
- Essential Loads (for battery storage)



Evaluating your Storage Options

- **Maximum usable capacity:** The total amount of electricity that your battery can store.
- **Power rating:** The amount of electricity that can be discharged at any one time.
- **Round trip efficiency:** The percentage of the electricity fed into your battery that can be discharged out of it.



Storage Timeline

Batteries are in high demand, and low supply.

- Timeline varies based on the model that you choose
- Solar system can be installed before batteries arrive
- Ask our installers about your options.



Sign Up at bayareasunshares.org by November 30!



Bay Area SunShares

[Home](#)

[About](#) ▼

[Solar + Storage Discounts](#) ▼

[Webinars](#)

[Resources](#) ▼

[Sign Up!](#)

Sign up for Bay Area SunShares

Basic Information

First Name *

Last Name *

Email *

Phone *

City of Residence *

Where did you hear about this program? *

Please select... ▼

Bay Area cities and businesses conducted outreach about the SunShares program. Please let us know if you heard about the program from one of these cities or organizations. If not, select Other (Referral).

Which SunShares offering interests you? *

Please select... ▼

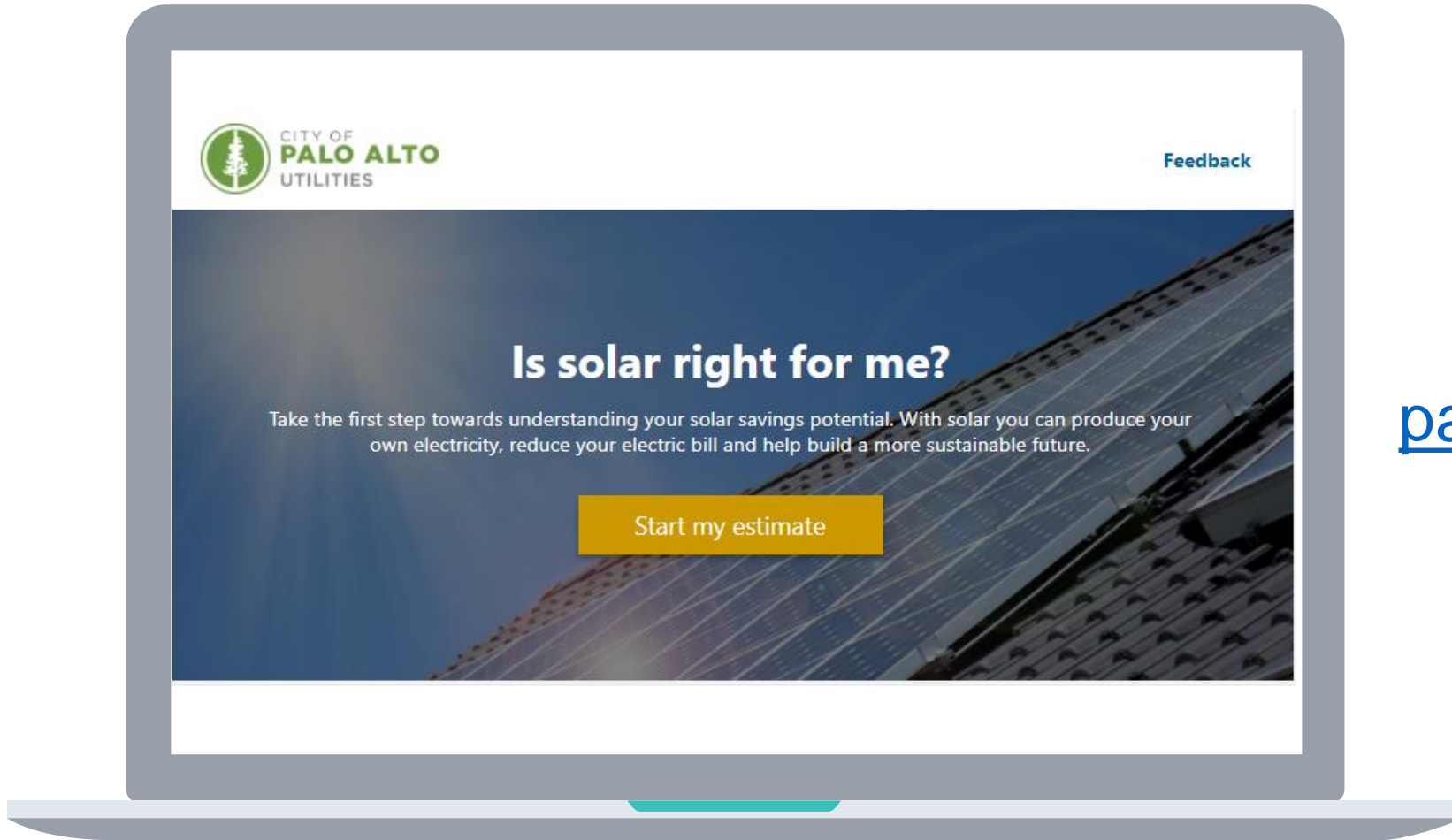
Resources and Tools

Solar Resources




cityofpaloalto.org/solar

Solar Calculator Tool




paloalto.wattplan.com/pv

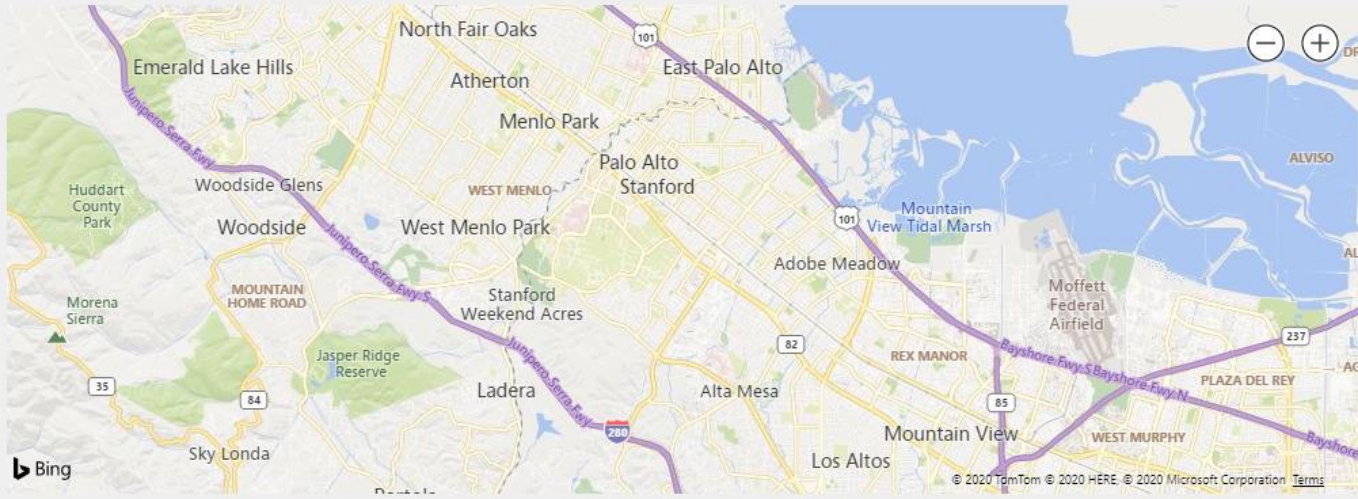
Enter Address



Enter your address


This will help personalize your estimate with the most accurate information.






© 2020 TomTom © 2020 HERE © 2020 Microsoft Corporation [Terms](#)


Enter Electricity Usage: Quick or Detailed




Tell us about your energy usage



Select average bill
Quick estimate

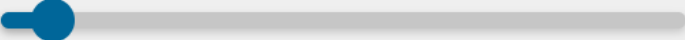


Enter monthly usage
Detailed estimate




For best results, approximate your average monthly electric bill based on the most recent 12 months.

\$100 / month


\$25  \$1,000

[< Back](#) [Next >](#)


Enter Detailed Monthly Usage




Tell us about your energy usage



Select average bill
Quick estimate



Enter monthly usage
Detailed estimate

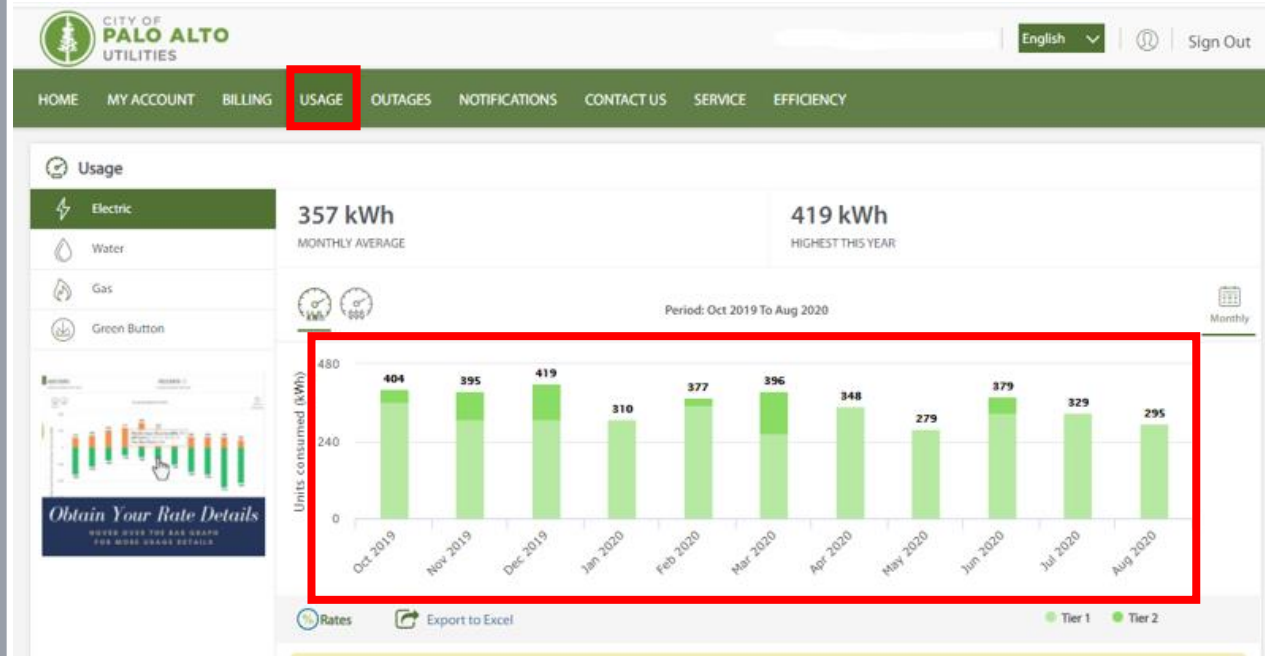


Visit [MyCPAU](#) to obtain your total energy (kWh) values for the most recent 12 months. Future use may be lower if you improve your home's efficiency with a [home energy audit](#), or may increase from remodeling, buying an electric vehicle, or switching from gas appliances to electric.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh


[← Back](#)[Next →](#)

Calculate Monthly Usage for Detailed Estimate




MyCPAU.cityofpaloalto.org


Enter Detailed Monthly Usage Data




Tell us about your energy usage



Select average bill
Quick estimate



Enter monthly usage
Detailed estimate



Visit [MyCPAU](#) to obtain your total energy (kWh) values for the most recent 12 months. Future use may be lower if you improve your home's efficiency with a [home energy audit](#), or may increase from remodeling, buying an electric vehicle, or switching from gas appliances to electric.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
310	377	396	348	279	379	329	295	285	404	395	419
kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh	kWh

[← Back](#)[Next →](#)

Tool Suggests System Size and Estimates Savings

Here's a summary of your new plan

After reviewing your summary, explore the other sections of your estimate to better understand your bill and energy savings potential as well as your financing options.

Save on electric bill
\$966 First year
[View complete financial results](#)

Incentives available
🌱 \$2,184 Solar federal tax credit
[View incentives details](#)

Sustainability
Maximizing home efficiency and adopting EVs powered by clean electricity are primary paths to achieving a sustainable and low-carbon future.


Steps

- ✓ Maximize home efficiency
- ✓ Install solar
- ✓ Become a Net Energy Metering Successor (NEM 2) customer as part of installing solar

[View next steps](#)

Let's review each step of your new plan

The "Traditional plan" section describes your rates and costs without solar, and the "My new plan" section shows the details of your new energy plan. You can modify any of the steps according to your preferences.

 Install solar [Modify](#)

Traditional plan

No solar

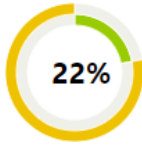
Without solar, all your electricity comes from your utility.

My new plan

Electricity comes from utility & solar

2.4 kW
System size (DC)

8
Number of panels




22%

■ Solar
■ Utility

Annual electricity from solar

[Show solar details](#) ▾

 CITY OF
PALO ALTO

30

Customize Parameters and Compare Bids

The screenshot shows a web application for customizing solar parameters. On the left is a vertical sidebar with a blue background and white text. It contains a 'Solar Menu' icon (three horizontal sliders) at the top, followed by the text 'Solar Menu'. Below this are five menu items: 'My Home', 'Solar System', 'Financing', 'Storage', and 'Solar Equipment'. The 'Solar Menu' icon and its label are highlighted with a red rectangular border. The main content area has a white background and is divided into two columns. The left column is titled 'Price' in a blue header. It displays 'Unit Price: \$3.50 per Watt-DC' with a small question mark icon, followed by a horizontal slider. Below the slider, it shows 'System Price: \$8,400' with a question mark icon. The right column is titled 'Loan' in a blue header with a dropdown arrow. It displays 'Rate: 5.00%' with a question mark icon, followed by a horizontal slider. Below this is 'Term: 20 years' with a question mark icon, followed by another horizontal slider. At the bottom of the right column, it shows 'Down Payment: 10%' with a question mark icon, followed by a third horizontal slider. At the bottom center of the main content area is a blue button with the text 'Update'.

Solar Menu

My Home

Solar System

Financing

Storage

Solar Equipment

Price

Unit Price: \$3.50 per Watt-DC ?

System Price: \$8,400 ?

Loan ▼

Rate: 5.00% ?

Term: 20 years ?

Down Payment: 10% ?

Update

Side-by-Side Comparison of Financing Options

Select a solar financing method

<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cash	Loan	Lease	PPA
\$9,450	\$9,450 20 yrs @ 5% 10% down	\$9,450 20 yrs, \$35/mo 2.90% escalator \$0 upfront	\$9,450 20 yrs @ \$0.11/kWh 2.90% escalator \$0 upfront
\$9,450 Upfront cost before incentives	\$945 Upfront cost before incentives	\$0 Upfront cost before incentives	\$0 Upfront cost before incentives
\$0 First year average monthly payment	\$56 First year average monthly payment	\$35 First year average monthly payment	\$31 First year average monthly payment
\$2,382 Lifetime savings	(\$174) Lifetime savings	(\$166) Lifetime savings	\$1,700 Lifetime savings

[Cancel](#) [Save](#)

Add Options – Efficiency & Battery Storage

Here are other steps to consider



Make efficiency improvements

You can maximize savings by making energy efficiency improvements.

[Compare options](#)




Install battery storage

You can store the electricity produced by solar and use it later in the day. Plus, during outages, you can power critical appliances without the emissions of a backup generator.

[Compare options](#)

EV Calculator Tool


Traditional plan ?

Nissan Altima S 
2021 | Gasoline

\$24,300
Price


32
Miles per gallon


My new plan

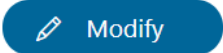
Nissan Leaf SV Plus 
2022 | Plug-in electric

\$26,400
Price after incentives

215
Electric range (miles)



 Install solar



Traditional plan

No solar

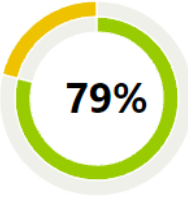
Without solar, all your electricity comes from your utility.

My new plan



Electricity comes from utility & solar

11.1 kW
System size (DC)

37
Number of panels



79%

 Solar
 Utility

Annual electricity from solar

paloalto.wattplan.com/ev

Solar Permitting in Palo Alto

Residential PV Permitting



Overview

Interested in installing a residential Solar Photovoltaic (PV) system in Palo Alto? Follow the 4 steps below to properly develop plans, submit an application for a permit, and receive approval for your residential PV system. Visit the [commercial PV Permitting page](#) to learn more about PV installations at commercial sites. If you're interested in installing battery storage, the permitting process is similar to the PV permitting process outlined here. In lieu of the Small or Large Submittal package, refer to the City's [Energy Storage Systems Submittal Guidelines](#).

cityofpaloalto.org/PVpermitting

aca-prod.accela.com/PaloAlto

Planning & Optimizing Your Solar System

Sizing Your Solar System for Current & Future Needs



Future decreases in energy consumption:

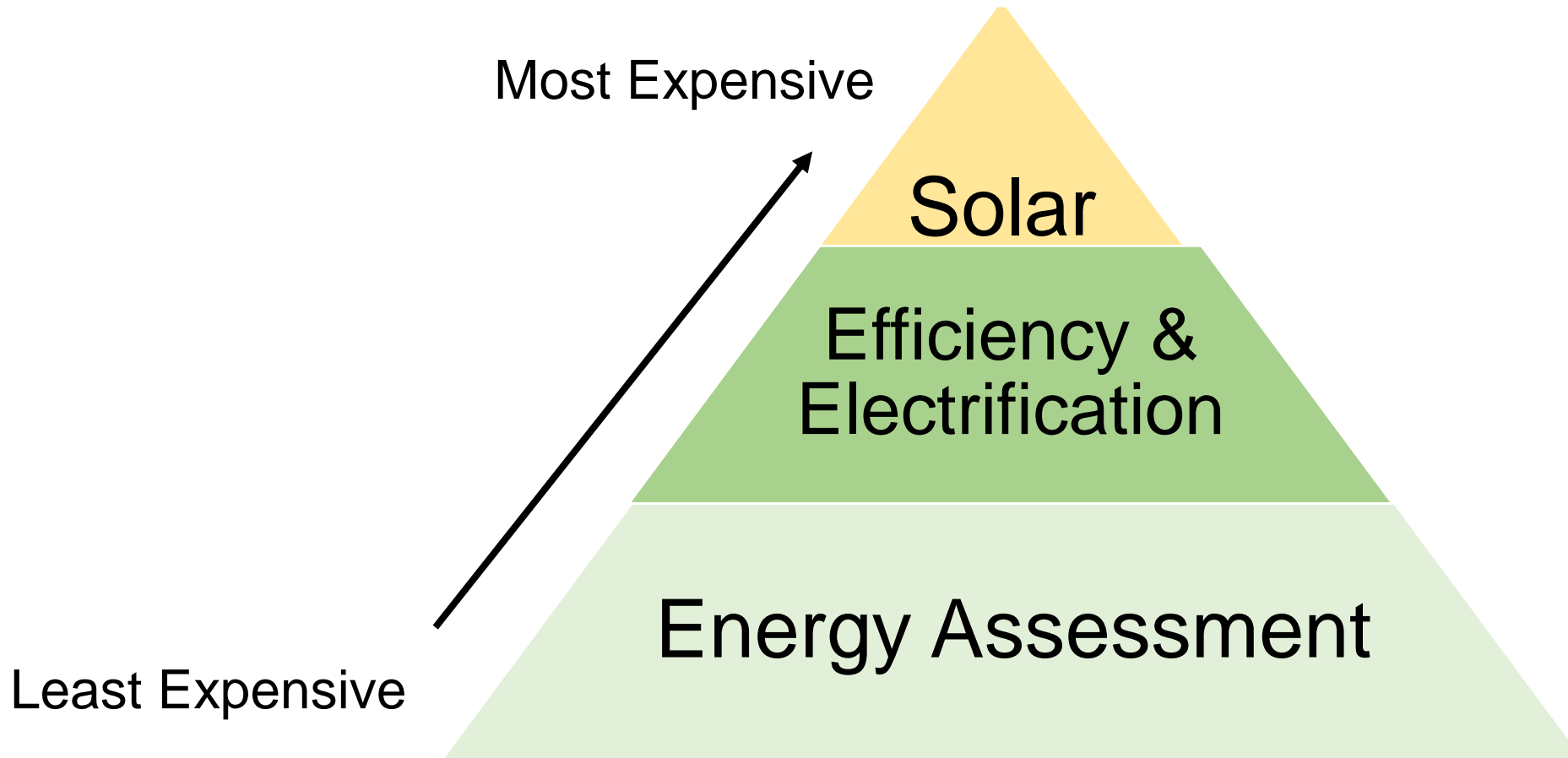
- Increase in home efficiency *Call the Genie! (650) 713-3411*



Future increases in electricity consumption with electrification:

- Electric vehicle *EV cost calculator, rebates & incentives: cityofpaloalto.org/ev*
- Heat pump water heater *Up to \$1,500 rebate. Apply now: cityofpaloalto.org/hpwh*
- Heat pump space heater (air source heat pump)
- Induction cooktop
- Heat pump clothes dryer

Where do I start?



Call the Home Efficiency Genie for an Assessment to Start

Energy & Water Phone Consultation (Free)	Genie Home Efficiency Assessment (\$49-\$149)	Home Electrification Readiness Assessment (included)
<ul style="list-style-type: none">• Third-party unbiased advice• Utility bill review• Information on rebates & programs• Discuss energy goals and home concerns	<ul style="list-style-type: none">• Virtual or in-person home evaluation with expert• Uncover energy waste• Electrification opportunities• Comprehensive report	<ul style="list-style-type: none">• Expert evaluation of electric panel capacity• Determine if old appliances are ready to be replaced• Home Electrification Readiness Report

(650) 713-3411 or advisor@efficiencygenie.com
cityofpaloalto.org/efficiencygenie

Why Should I Consider Efficiency Before Solar?

- Most cost-effective energy upgrade
- Improved insulation reduces heating/cooling needs
- Ensure year-round comfort with less drafts & uneven temperatures
- Well-sealed homes reduce outdoor particle pollution (wildfires, allergens, etc.)



Attic, floor, wall
insulation



Duct insulation or
sealing

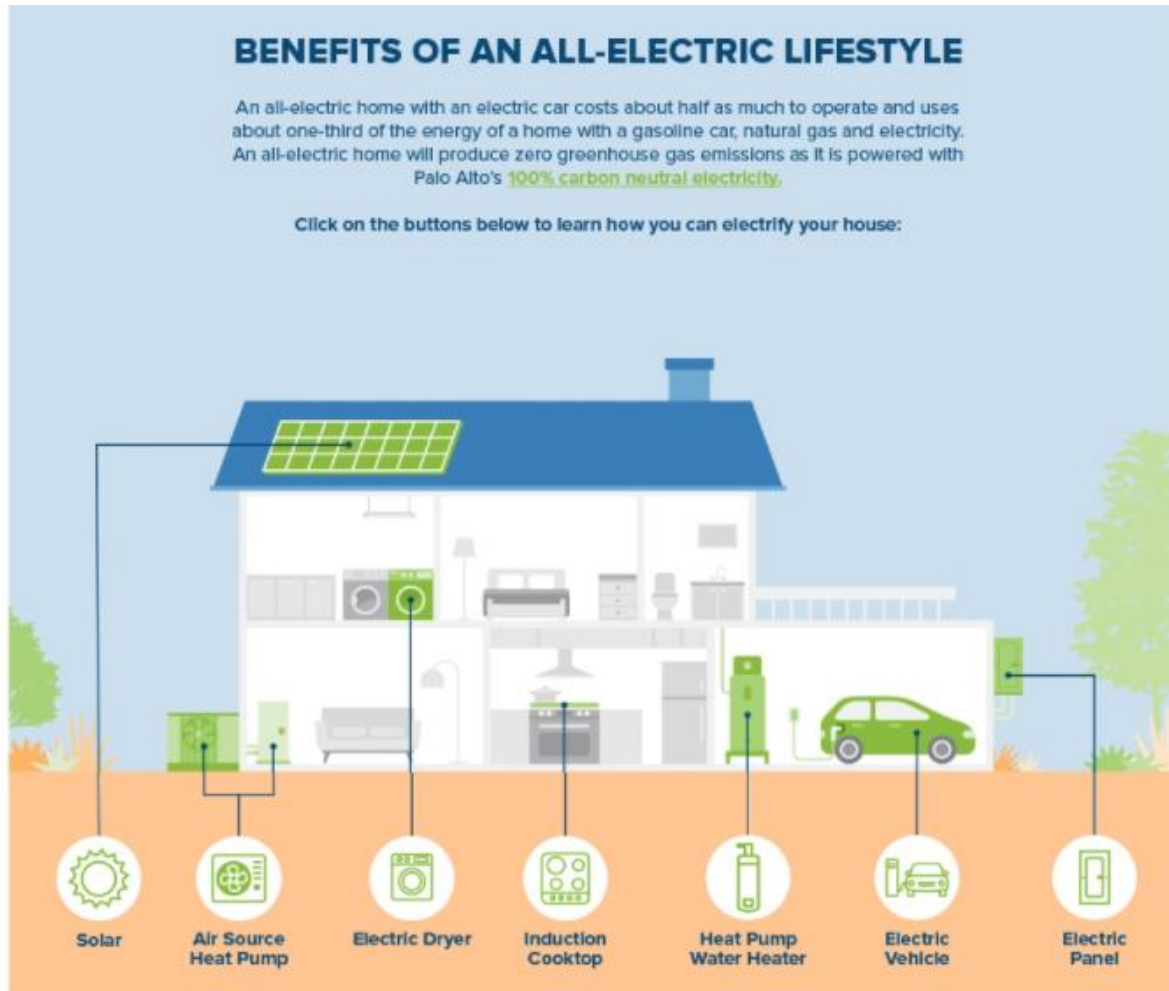


Air sealing



Right-sized HVAC
system

Why Should I Electrify My Home?



Improving home efficiency and switching from natural gas to clean electricity:

- Reduces harmful pollutants (CO, NOx, etc.) in and out of your home
- Allows you to power electric appliances with solar electricity*
- Helps meet Palo Alto's climate goals

cityofpaloalto.org/electrification

* Your solar system alone will not provide power during a blackout since it is connected to the grid. Consider adding battery storage for backup power.

Do I Need an Electrical Panel Upgrade if I Electrify?



- *Possibly*, especially if you go solar or EV
- Get a **Home Electrification Readiness Assessment** with the Genie
- Reasons to upgrade:
 - Keep your home safe from electrical fires
 - Protect electrical system and new appliances
 - Future-proof your home

For permits steps and FAQs:

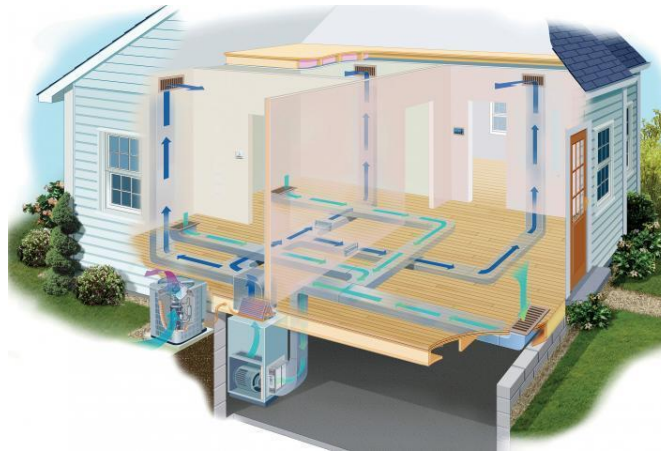
cityofpaloalto.org/electricpanelupgrade

Heat Pumps - Efficient Electric Alternatives to Natural Gas

- Works by moving ambient heat from one place to another
 - Most common heat pump is a refrigerator or AC unit (moves hot air outside and cold air inside)
- Can be used for:



Water Heating



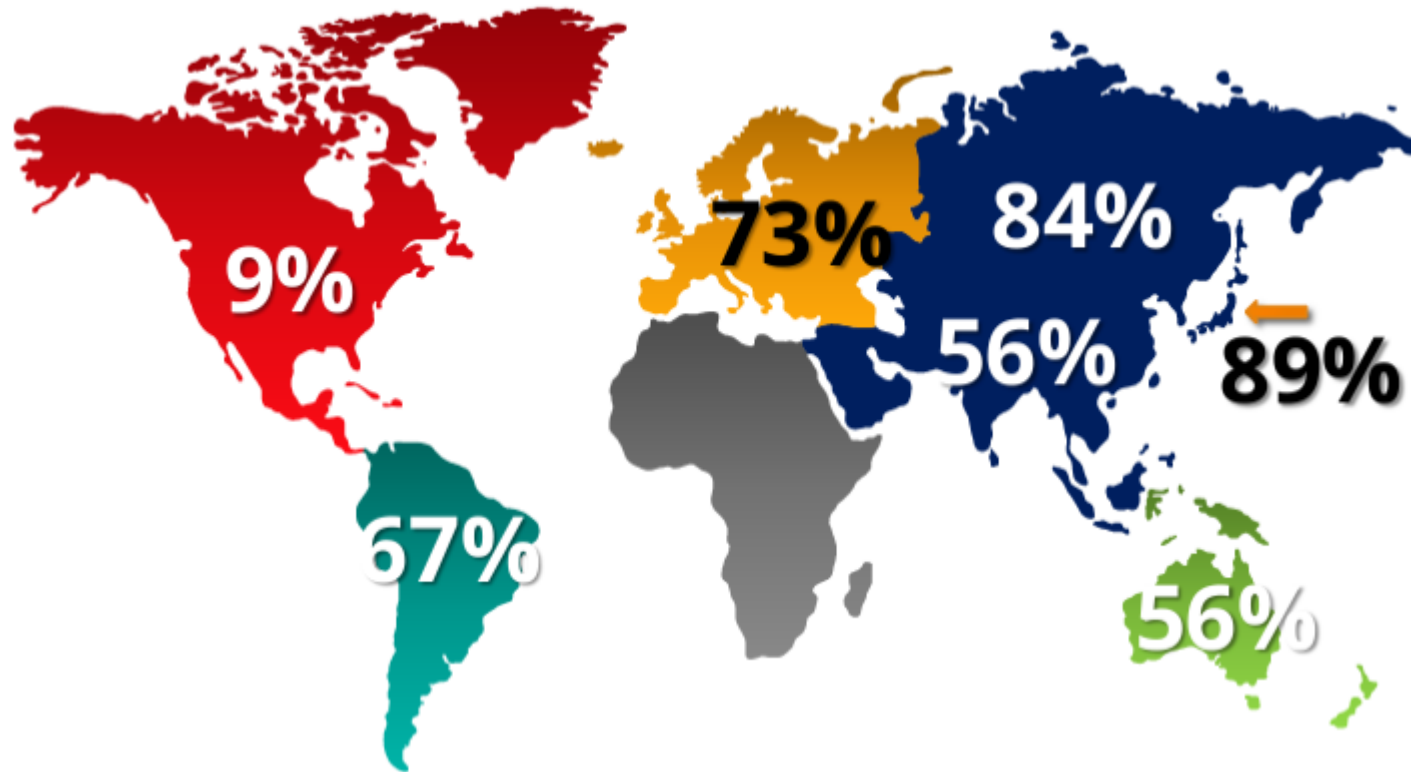
Space Heating/Cooling



Clothes Drying

Heat Pumps - Efficient Electric Alternative to Natural Gas

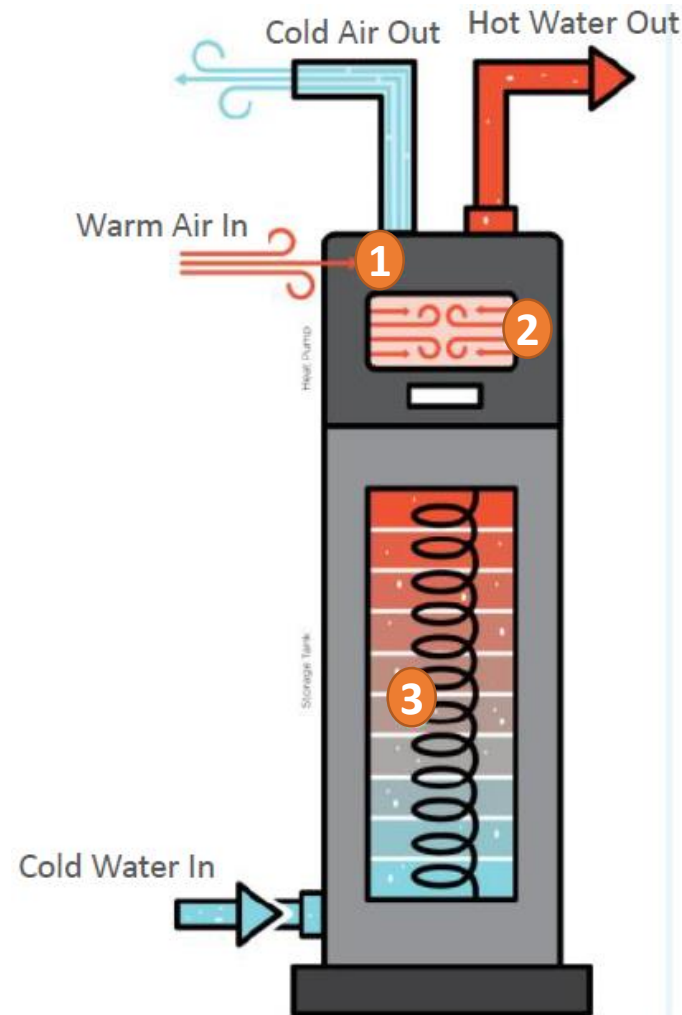
- Highly efficient, proven technology used worldwide



International Adoption of Heat Pumps

Electric Heat Pump Water Heater (HPWH)

- 3 times more efficient than natural gas water heater
- Runs like a refrigerator in reverse
- Ideally located in garage or basement for air flow



- 1 Heat pump pulls heat from the air
- 2 Refrigerant is compressed, increasing its temperature
- 3 Condenser coils transfer heat to the water

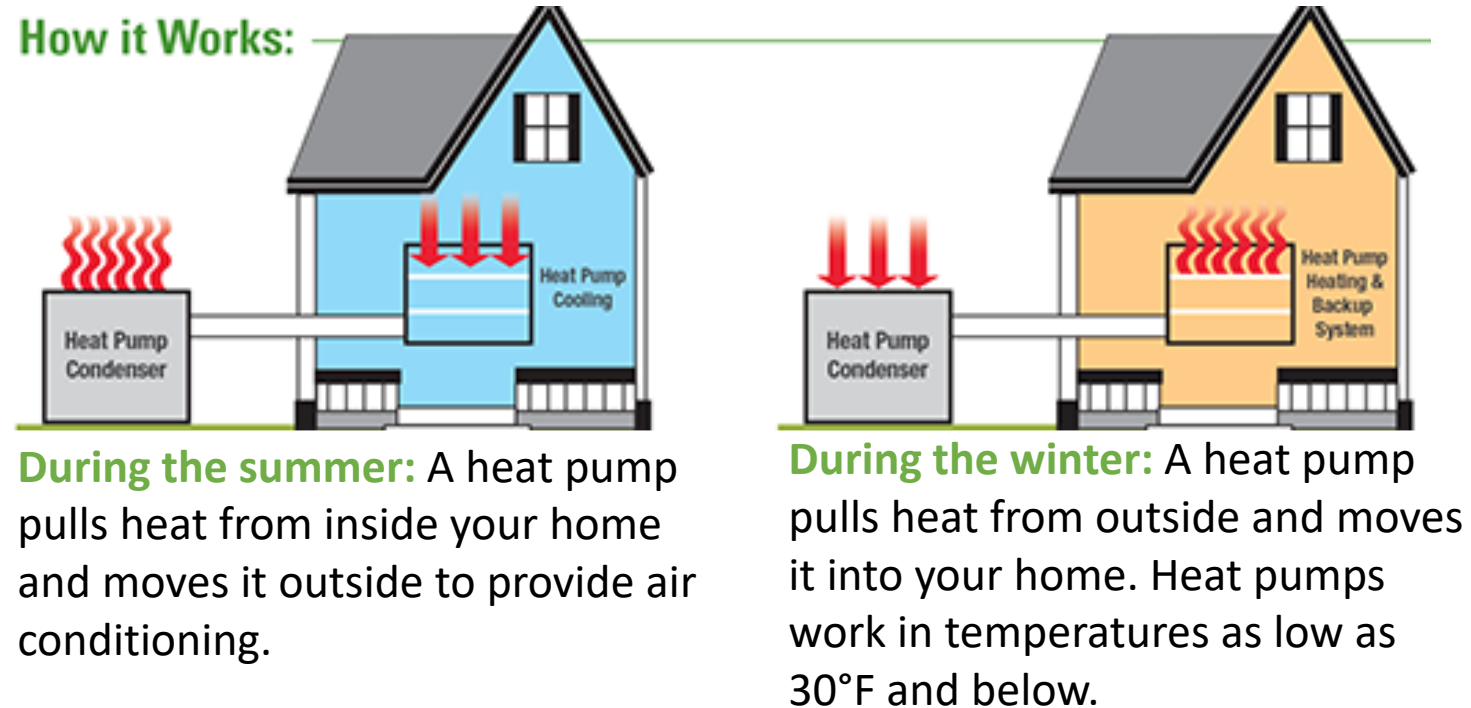
Electric Heat Pump Water Heater (HPWH) Rebate

- When paired with solar, HPWHs can save solar energy as hot water
- Check the age of your water heater
- May need to increase solar system by 1 kW
- May require panel upgrade as HPWH needs 15-30 amp breaker
- Receive up to **\$1,500** to replace an existing water heater. Apply online at cityofpaloalto.org/hpwh



Heat Pump HVAC – rebate planned for 2022

- Runs like AC unit, but you get both heating and cooling
- Can be ducted or ductless (central or mini-split system)
- Good solution for Eichlers



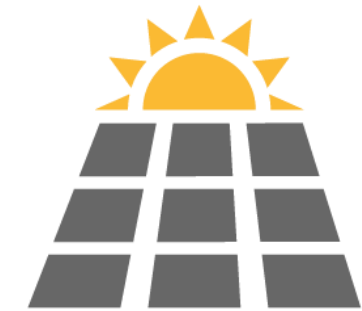
Sign up for the [Utilities Newsletter](#) to be first to know about the rebate!

Solar & Your Utility Bill



Net Energy Metering (NEM 2)

- All new rooftop solar customers will be served as NEM 2 customers
- Receive a bill credit for exported solar to the grid
- Charged for electricity consumed from the grid



**Energy You
Produce
(Export)**



**Energy You
Consume
(Import)**



**Net
Energy**

cityofpaloalto.org/NEM2

NEM 2 Solar Customer Utility Bill

Billing Details for Current Period

Meter Reading Information (A = Actual Read E = Estimate Read)						
Service	Meter Number	Meter Reads Current - Prior	Reading Difference	Meter Multiplier	Therm Factor	Units
ELECTRIC		3497A - 2769A	728	1		728 KWH
ELECTRIC - Export		3626A - 2571A	1055	1		1,055 KWH
GAS		1250E - 1238A	12	1.017	1.025	12.509 THM
GAS		1274A - 1250E	24	1.017	1.025	25.018 THM
WATER		202A - 189A	13	1		13 CCF

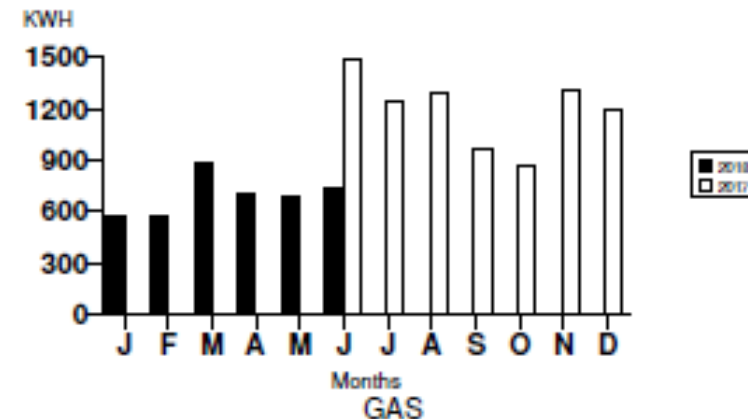
ELECTRIC

E1 COMMODITY	58.13
E1 DISTRIBUTION	42.97
E1 PUBLIC BENEFITS	2.56
EEC-1 SOLAR EXPORT CREDIT	-78.97
STATE ENERGY SURCHARGE	0.21

GAS

CARBON OFFSET CHARGE	1.50
G1 COMMODITY CHARGE SUMMER	11.30
G1 DISTRIBUTION SUMMER	24.19
GAS CAP AND TRADE COMPLIANCE	0.98
MONTHLY SERVICE CHARGE	10.32
TRANSPORTATION CHARGE	4.66

ELECTRIC



Residential Electricity Rates



Energy Produced (Exported)

- Customers are compensated at the **Export Electricity Compensation (EEC-1)** rate
- Current rate: 10.78 ¢/kWh



Energy Consumed (Imported)

- Customers are charged **Electric Service (E1)** rate
- Current two-tiered rates: *
 - 13.76 ¢/kWh for up to 330 kWh
 - 19.37 ¢/kWh for more than 330 kWh

* Based on 30 day billing period and 11 kWh for Tier 1 per day

How to Maximize Your Solar Savings

- Best value comes from maximizing solar used on-site and minimizing the amount exported (i.e. consume energy when you generate it)
- Therefore, shift usage to middle of the day where possible



Next Steps

1. Schedule consultation with The Genie and mention “Sunshares” for the \$50 discount at (650) 713-3411 or advisor@efficiencygenie.com **ASAP**
2. Register for discounts at BayAreaSunShares.org by **November 30, 2021**
3. Schedule consultations with SunShares and other solar installers
4. Compare bids using the Solar Calculator Tool: palalto.wattplan.com/pv
5. Select SunShares installer and sign contract by **December 31, 2021**
6. Install system by **December 31, 2022** to receive 26% Federal Tax Incentive

Additional Resources

Current Programs and Rebates

- [City of Palo Alto Energy and Water Programs](#)

Tax Incentive Guides

- [Homeowner's Guide to the Federal Tax Credit for Solar Photovoltaics](#)
- [Equipment Tax Credits for Primary Residences](#)

All-Electric Home Construction Guides

- [Pocket Guide to All-Electric Retrofits of Single-Family Retrofits](#)
- [Zero Emissions All-Electric Single Family Construction](#)

Next Webinar – Lawn Conversion, Native Trees and Plants



**Wednesday, November 17
6 - 7:30 PM**

[Register for this webinar](#) to learn how converting your lawn to native trees and plants can help you save money while benefiting the planet. Plus, learn about landscape rebates to help convert your lawn.

Contact Us – Program Administrators



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Scott Mellberg
Scott.Mellberg@cityofpaloalto.org

Contact Us – Solar & Storage Installers



Lucas and Renee LaFontaine

[Website](#)

1-888-244-2513



Colin Swan

[Website](#)

415-826-2503



Kyle Severns

[Website](#)

831-200-8763

Thank you!

Please submit questions using Q&A button

