

**City of Palo Alto Utilities SunShares Webinar**  
**October 26, 2021**  
**Questions and Answers**

The following questions were asked by participants on the webinar. Questions are categorized by topic below and were edited for clarity.

## SunShares Program Questions

**Is the assessment free of charge?**

Yes, each vendor will give you a no-cost, no-commitment solar and/or battery storage proposal.

**Might your discounts be available after November 30? I may not be ready to decide now.**

Participants must register on [www.bayareasunshares.org](http://www.bayareasunshares.org) by November 30, 2021 to access the 15% discount on solar installations and 10% discount on battery installations. There is no commitment to participate by registering. In order to receive 2021's pricing and discounts, your contract must be signed by December 31, 2021. Please note that while this program is offered annually, products and pricing are subject to change in subsequent years.

**If we sign up this year to get the proposals, but then decide to wait on install, do we lose the SunShares benefit?**

SunShares is an annual program so if you decide that this is not the time for you, you can always sign up again in the future. Please note that while this program is offered annually, products and pricing are subject to change in subsequent years.

**How long can we work on solar panels installation after signing a contract with a SunShares vendor?**

After signing a contract, your vendor will work with you to start the permitting and installation process immediately. Installation times can vary based on a variety of factors including local permitting processes and any necessary repairs or renovations to the home.

**With the SunShares program, what is the cost per watt for a solar installation? Is the cost per watt indicative of kWh per year?**

Please visit [www.bayareasunshares.org/products-and-pricing](http://www.bayareasunshares.org/products-and-pricing) to find a list of products and pricing offered by the three vendors. The price is in terms of dollars per watt, which corresponds to the electric generation capacity of your system. kWh/year depends on the specific conditions of your installation (shading on your panels, tilt and orientation of your roof, inverter efficiency etc).

**There are (at least) 3 types of systems: own, lease, or don't own and pay fixed amount for power (also known as a power purchase agreement or PPA). What options are available through SunShares?**

SunShares vendors offer a wide range of options including the ones you describe. The vendors also offer a variety of financing options for owned installations. They are your best resource for learning about your options and choosing the right one for you and your finances.

**What if I applied and have only heard from 2/3 of the providers? Is that normal?**

If you indicated that you wanted to hear from all three of our installers, you should hear from each of them within 5-7 days. If you have not heard from one of them after that time has elapsed, please reach out to [sunshares@bc3sfbay.org](mailto:sunshares@bc3sfbay.org) and we will make sure that they contact you.

## Solar Installation

### Solar Panels and Installation

#### **Can you explain again why we need to shift electric usage to midday once we have a solar system installed?**

Since the solar export credit you receive is about 11 cents per kWh, but the cost of importing electricity is 14 or 19 cents per kWh, you get the most bang for your buck when you use the electricity that you generate, at the same time that you're generating it. In other words, you'll want to shift most of your electricity usage to the middle of the day when solar energy generation is at its highest. Basically, you want to maximize the amount of your solar-generated electricity that you use on site, at your home, and minimize the amount of electricity that you export.

For example, let's say you install a heat pump water heater (HPWH). It is best to program your HPWH to heat water at noon when you're generating solar electricity. That way, you'll heat your water using electricity generated by your solar panels. If you programmed your HPWH to heat water at night, then you would export the electricity in the middle of the day and get compensated 11 cents per kWh and import electricity at 14 or 19 cents per kWh at night.

#### **Solar panel sizes range from about 300 to 400 watts. Does this mean that the max PV system size for a home with a 200-amp service panel is 8 kW?**

You can install more than 8 kW on a 200-amp panel. The vendors can provide a quote detailing this.

#### **Can you upgrade 200-watt panels to 300-watt panels and associated micro inverters?**

All SunShares installers can upgrade your electric panel if necessary as part of your solar and storage installation. SunShares installers can evaluate whether this is necessary as part of your solar quote.

#### **Do any of the turnkey systems use bifacial panels?**

You can see all SunShares product offerings here: <https://www.bayareasunshares.org/products-and-pricing>. The vendors may be able to offer other panel modules than those listed here, but those are not guaranteed to be discounted as part of the SunShares program.

#### **I was told I should wait 6 months to a year after I convert from gas water heater & heating to electric water heat & HVAC before sizing my solar panel. Wouldn't the Home Electrification Readiness Assessment (HERA) help so I can size my solar panel and get the contract signed by 12/31/21?**

It's true that the most accurate way to assess the amount of electricity that your home will use for electric heat pump space and water heating would be to install those systems and then wait and see what your energy consumption is. Alternatively, there are contractors who can model your energy use with specialized software. Feel free to reach out to the [Home Efficiency Genie](#) to ask them about system design and sizing. Based on your current energy consumption for water and space heating, the Genie may be able to give you a rough estimate of electric energy that would be needed once you convert to heat pump space and water heating. You could then provide these estimates to the solar installers for solar system sizing.

**Would these systems typically come with some kind of controller that could communicate with smart plugs in the house to turn appliances on/off depending on whether the system is currently importing/exporting power?**

Please contact a SunShares vendor to discuss the options that might be available for you.

**Is there a solar package that will allow your house to act as a power generation consortium?**

Please contact a SunShares vendor to discuss the specifics of your question.

**How dynamic is solar technology, i.e. how often does the tech change and how soon will today's tech be out of date? I've done the SunShares assessment and found that the return on investment (ROI) is 9 years out. How much will the tech change in 9 years?**

Solar panels have steadily increased in efficiency and decreased in cost over time. However, it is not the same as computing technology where you have occasional “quantum leaps” that dramatically change the technology. Although this increase in efficiency is likely to continue, it is safe to say that it’s unlikely to make today’s panels out of date in the near future. Many people are still happily using the solar systems they installed 20 years ago. At SunShares, we like to say, the best time to install solar was yesterday, and the second best time to install solar is today. By which we mean, start saving money now instead of waiting for a major change in the industry.

**Do you recycle or resell/reuse the old panels?**

As the solar industry matures, recycling processes for the end of panels’ lifespan is an area of growing development. Solar panels are made of valuable materials that should not just be thrown away. It’s also good to keep in mind that while your solar system will be warrantied for 25 years, it will be fully functional for many years after that. Please contact an installer to discuss options

## Electrical Panels

**What are the electrical panel sizes required for solar and/or battery storage installations?**

Required panel size will depend on the electrical equipment/appliances for your home. During the building permit application process, an electrical load calculation will be required. Typically, a 200-amp electrical panel will work, but the electrical load calculation (performed by the installer) will confirm this.

**Do the installers also deal with the current capacity of electrical panels, or do I need an electrician?**

All the vendors can support you if you need a new main panel.

## Installation with Existing Solar Systems

**I already have solar, but the system is undersized. I’ve removed trees to provide more space for panels. Will this program work for me?**

If you request a quote, you will get a shade analysis of your roof. With that, you'll have certainty regarding your roof's energy generation potential.

**I have an existing solar system and wish to expand capacity (as we electrify more systems). Is it better to add more solar panels or just add storage?**

Both options are going to be a good solution, but we would want to evaluate your current system, usage and future needs to determine the best solution. Adding capacity and installing storage serve different purposes. Adding capacity enables you to offset more of your (growing) electricity demand with solar. Adding battery storage provides resilience to outages.

**I have an old installation (probably nearly 10 years old; it was installed while Palo Alto was deciding how to do permitting so it's been a while, but it's virtually non-functional). How would I upgrade? Or get what I have "fixed" as part of the SunShares program or independently?**

If you buy a new solar system expansion, the installer can help determine whether it is worth fixing your old system.

**We have an old hydronic system that we want to replace. Will any of the contractors be able to deal with dismantling the old solar panel system, which is after all taking up some valuable roof space?**

SunShares solar installers are your best resource for understanding your options in this case. You can speak directly with them by signing up for SunShares.

## Roofs

**Roughly speaking, how many roof penetrations are necessary to support a 5 kW system?**

This depends on a variety of factors including the panel modules and racking systems used and your roof itself. Your question is best answered by signing up for SunShares and speaking directly with our expert installers who can design a system for your home at no cost.

**Will any of the providers do work on homes with a Spanish tile roof?**

Yes, but the tiles must be made of concrete or cement. It cannot be ceramic or clay.

**Is it easy to install solar panels on a tar and gravel with foam roof on an Eichler house?**

Solar installations on tar and gravel roofs generally require the involvement of a specialized roofing contractor. This may increase the cost and time required for your solar installation. The best way to understand the difficulty involved is to speak to our installers directly by signing up for SunShares.

**What happens to the solar system if you need to replace an asphalt shingle roof?**

It's generally recommended that you replace your roof before installing solar if it is reaching the end of its lifetime. Our installers can help you evaluate your roof's condition and make this decision. If you do need to replace your roof after your solar system is installed, it can be removed and later re-installed as part of your roof replacement.

## Battery Storage Installation

**Are batteries warranted for 25 years like the solar panels?**

Most battery warranties are for 10 years.

**Do all the turnkey systems use lithium iron phosphate battery (LFP) batteries?**

No. For example, the Tesla Powerwall 3 is a lithium nickel manganese cobalt oxide (NMC) battery. You can see all SunShares battery offerings here: <https://www.bayareasunshares.org/products-and-pricing>

**If I sign a contract this year to install solar + storage, but the battery is back-ordered 18 months or more, how would that affect my ability to claim the federal 26% credit?**

You will be eligible for the tax credit in the year that the system is installed. The wait time for your battery also depends on which model you choose, as supply constraints vary by manufacturer. Please

also review the US Department of Energy's [Homeowner's Guide to the Federal Tax Credit for Solar Photovoltaics](#) and talk to a tax professional for additional details about how to claim the tax credit.

**I have solar panels, but I am interested in adding back-up batteries. None of the providers listed on the website is interested or able to just add a backup battery. Do you have any suggestions?**

All three SunShares installers can add battery units to existing solar systems. This is conditional on your inverter's compatibility with the battery models on offer. You can see pricing and product offerings for this option clearly stated on the SunShares website: <https://www.bayareasunshares.org/products-and-pricing>

**What is the rate of improvement with battery storage?**

Please contact a SunShares vendor to discuss the specifics of your question.

## Permitting

**I'm under the impression that the permitting process in Palo Alto can be long and arduous. In fact, contractors have chosen not to install solar in Palo Alto due to the permitting process. Has this changed?**

The City of Palo Alto's Planning and Development Services Department has implemented more efficient process from permit intake to building inspection. Many of our electrification project review timelines have been reduced and more smaller projects are reviewed over-the-counter or on the same day. We continue to look for ways to improve our permit routing, plan check, and inspection process.

**Do these systems obtain permits from the same department in Palo Alto Planning as regular systems or is there a streamlined procedure which bypasses the many obstacles in Palo Alto Planning?**

All electrification systems require a building permit through the City's Planning and Development Services Department. Many of our electrification permit types are prioritized and reviewed on the same day. Begin your project review at our [Online Permitting Services webpage](#). If you need further assistance, please call (650) 329-2496 or visit our main [Planning and Development Services webpage](#).

## Energy Efficiency

**I am considering replacing our aged boiler (hydronic system). What would be the price range for the heat pump system?**

Feel free to contact the [Home Efficiency Genie](#) to get some ranges or estimates if you want to replace your boiler and hydronic system with a heat pump system.

## Advanced Metering Infrastructure

**When is Palo Alto going to start using time of use billing for electricity? I've heard after the Advanced Metering Infrastructure (AMI) project is done, but about when in reality?**

Yes, you are correct, time of use (TOU) rates do depend on competition of AMI installation. Target is to have AMI rolled out by end of 2024. We may be able to offer TOU rates on a pilot basis for interested customers in the 2023-24 timeline.

**How will NEM 2 change when we get smart meters (also known as Advanced Metering Infrastructure) in a few years?**

There would not be any changes to NEM 2 rates with AMI roll-out. However, implementation of TOU rates will likely be accompanied with a NEM2-TOU rates, with the 'EEC-1 Solar Export Credit' amount varying based on the TOU periods.