LET'S GO SOLAR... TOGETHER

A STEP-BY-STEP GUIDE TO SOLAR
and other renewable options

SDGE

A Sempra Energy utility®

At SDG&E®, we're proud to be a leader in delivering electricity generated with clean, renewable energy to our customers. Do you know that around 45% of all the electricity we deliver already comes from renewable sources? And this doesn't even include the excess energy generated by customers who choose to install a renewable system.

If you're thinking of installing solar, we're here to support you. Use this guide to help you prepare and make informed decisions, like what size system you'll need and how to choose a contractor. Soon, you'll be on your way to a more efficient home or business that may help you save more energy and lower your bill.

SDG&E's electric grid and renewable energy work together to provide safe and reliable power to our community. Once your system is installed, and you've received "Permission to Operate" (PTO) from SDG&E, it will be connected to the grid. So, if your system happens to generate excess energy, we'll track and credit you for it, and we'll be here to provide power to supplement your system when you need it.

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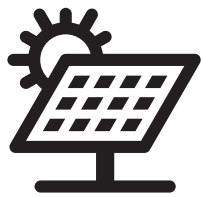
WE'RE HERE FOR YOU
If you go solar or renewable, you'll probably choose to stay connected to the grid. When your system isn't generating (like after the sun sets), we'll always be here to support you with reliable electricity and a strong infrastructure.

PART 1:

GETTING READY FOR SOLAR

Considering generating your own electricity from a renewable energy source at home or at your business? Start here to understand your options and make informed choices.



STEP 1: WHAT TO CONSIDER

5 Questions to Ask Yourself Before You Decide to Go Solar

1. What are my energy goals?
Do you want to reduce your electricity bill? Or, are you focused on committing to renewable energy? These questions — and others your contractor might have — will help determine what size and type of system is right for your needs.

2. Can I reach my energy goals without going solar?
Before you even start to get estimates, do a complete energy efficiency assessment of your home or business. You may be surprised how small investments and smart changes to when and how you use electricity can make a big difference. Once you maximize efficiency and have a better understanding of how and when you use electricity, you can save even more money because you'll likely be able to purchase a smaller solar system. You may even be able to reach your energy goals without investing in solar.

3. Does solar make sense for my property?
Depending on what kind of property you own, a solar energy system may make sense — or may not be the right match. If you're investing in solar panels, a south-facing roof surface is the optimal place to install. If you own a multi-unit property, or a commercial property (like a farm) with more than one building or area to power, your options will be a little different. Make sure you fully assess and understand any limitations or special requirements. If you determine your home isn't right for solar, consider enrolling in EcoChoice™ to get up to 100% of your electricity needs from SDG&E's renewable energy portfolio. Learn more at sdge.com/ecochoice.

4. Do I own an electric vehicle (EV), or am I considering one?
Now that many electric vehicles have driving ranges of up to 300 miles per charge, and as vehicle costs are decreasing, there has never been a better time to consider driving an all-electric or hybrid-electric vehicle. If you think you'll buy an electric vehicle, or already have one, you'll want to factor that into your renewable system size. Your contractor can help you determine what you'll require to support your EV charging needs. You'll also need to consider what time of day you'll be charging, and program your car charging to the time that makes the most sense for your pricing plan.

5. How much will it cost to install?
Installation costs can vary widely, depending on your individual energy use and goals. It also helps to think ahead. In addition to considering leasing or purchasing an electric vehicle, you may have other future plans that will affect your energy needs. Planning to expand your family or build an addition to your home? Have a heated pool? These considerations will help inform what size system you invest in. Talk to your contractor, but also take advantage of online tools and resources to help you understand what to expect. You can use California Solar Initiative's online solar cost calculators to get an estimate of how much it'll cost to buy and install solar.

STEP 2: EFFICIENCY FIRST

It makes sense to improve your overall energy efficiency before you make decisions about installing solar. You may be able to reduce the size of the system you'll need, which may also significantly reduce your costs. In some cases, you may be able to reduce your usage enough to meet your goals without investing in a renewable system.

Windows: Upgrade with efficient windows or insulating blinds.

Appliances: Look for the ENERGY STAR® logo on new appliances.

Conserve Water: Install flow controls and an efficient electric water heater.

Weatherize: Seal and insulate to prevent heat and cold leakage.

Lighting: Swap in LED bulbs and use natural light when possible.

SDG&E MARKETPLACE

Visit marketplace.sdge.com to access rebates and reviews on efficient products, from smart thermostats to TVs. It's a great one-stop-shop to find information and locate retailers so you can make the right efficiency investments.

NO-COST EFFICIENCY TIPS

There are many things you can do to reduce your energy use without spending a dime. Visit our Savings Center at sdge.com/residential/savings-center to become an efficiency expert with tips, videos, and more.

STEP 3: PICKING A SYSTEM

There are different sizes and types of solar energy systems to choose from. There are also solar alternatives, like wind, to consider. Here's a quick overview of system types and differences.

START WITH YOUR SYSTEM SIZE

Make sure you buy the right size system for your property, based on your current or projected energy use. If you install a system that's too large for your needs, you'll pay a lot more upfront and generate more than you need. If you install a system that's too small, you won't generate enough renewable energy and will need more from the grid.

RENEWABLE ENERGY CHEAT SHEET

ROOFTOP SOLAR PANELS:

Photovoltaic (PV) solar panels are the most popular form of renewable energy. PV converts sunlight photons (particles of light) into electricity you can use to power your home or business.

Crystalline Silicon: These panels are by far the most commonly installed.
Benefits: Efficient and cost-effective
Things to consider: May work less efficiently in shade and extreme heat

Thin Film: These thinner, more flexible panels work best on larger rooftops.
Benefits: Often less expensive; more productive than other options in shade and heat
Things to consider: Can be less efficient than crystalline silicon

Building Integrated Photovoltaic (BIPV):
BIPV integrates cells invisibly into your building's exterior.
Benefits: Visually unobtrusive
Things to consider: Can be less efficient than other options

SOLAR THERMAL SYSTEMS:

Unlike PV, which converts sunlight particles into electricity, solar thermal energy (STE) harnesses the sun's heat and converts it into electricity for your home or heat for water.

Solar Water Heaters (SWH):
A SWH captures heat from the sun for your water supply or pool.
Benefits: Clean heat for water or pool
Things to consider: May not entirely replace your hot water heater

OTHER RENEWABLES:

While less common, alternatives to solar energy, like wind and hydropower, are available. Some of these options may not be suitable to residential or small-business customers.

Small Wind: Installing turbines may require special zoning.

Hydropower: Safe but expensive renewable energy. Drought sensitive.

Biofuel: Plant- and animal waste-based, carbon neutral fuels. Requires compatible equipment.

Biomass: Like biofuel, but also uses non-plant sources like waste and landfill gas.

Fuel Cells: This new technology converts chemicals, like hydrogen, into energy.

SO WHICH IS RIGHT FOR YOU?

If you need help making a decision, talk to your contractor. A licensed professional should help you understand your needs based on your energy goals and what will work best on your building.

HOW MUCH WILL IT COST?

Once you take all available efficiency measures, use California Solar Initiative's online solar calculators at gosolarcalifornia.org/tools/calculators to get a system size recommendation and cost estimates.

STEP 4: BUYING VS. LEASING

Installing a solar or renewable system can add value to your home or building, but if upfront costs are an issue, you may consider leasing a system, or entering into a Power Purchase Agreement (PPA).

BUYING A SOLAR ENERGY SYSTEM
You purchase and install your own system, and your bill varies according to how much energy you generate and how much supplemental energy you use from the grid.

Benefits: Earn generation credits, may lower electricity bill, potential tax benefits
Things to consider: Potentially higher upfront costs and responsibility for maintenance

LEASING A SOLAR ENERGY SYSTEM
You contract a third-party leaser who owns, installs, and maintains the system at their own cost. You pay a fixed monthly rate to your leaser and your grid-use balance to us.

Benefits: Potentially lower upfront costs, more predictable ongoing costs
Things to consider: Dependency on service provider for maintenance, typically no tax benefits

POWER PURCHASE AGREEMENT
You enter into an agreement with a third-party who owns, installs, and maintains the system. You pay the third-party an agreed upon rate for the electricity generated by the system and continue to receive a bill from us for any grid use.

Benefits: Potentially lower upfront costs, negotiated rate
Things to consider: Long-term commitment, typically no tax benefits, dependency on solar service provider

GET INFORMED...
The Go Solar California website is a joint effort of the California Energy Commission and the California Public Utilities Commission providing a "one-stop shop" for information on solar programs, rebates, tax credits, and information on installing and interconnecting solar electric and solar thermal systems.

HELPFUL RESOURCES INCLUDE:
- Online calculators to help you make a decision about going solar
- Database of solar installers, contractors and retailers

STEP 5: GET IN TOUCH

Once you've made the decision to go renewable, it's time to reach out. There are a few potential parties you'll need to engage before you start installation.

HOME OWNERS ASSOCIATION (HOA)

If applicable, you should contact your HOA to share your plans to install solar. You may need permission, although the California's Solar Rights Act limits your HOA's ability to prevent solar installation.

NOT A SINGLE-FAMILY HOMEOWNER?

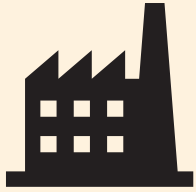
If you're a small or large business, multi-unit property owner, or tenant in a multi-unit property, there are some differences in what comes next. You'll learn a lot more in the pages that follow.

LANDLORDS

If you own an apartment or office building, you have the option to offer renewable energy as an amenity through Virtual Net Metering (VNM) or Net Energy Metering Aggregation.

FARMS & MULTI-STRUCTURE PROPERTIES

If you have a property with multiple meters and a solar system at one of your structures, you can combine your generation and usage into one bill, through Net Energy Metering Aggregation.



COMMERCIAL CUSTOMERS

We've got options for large businesses, too. Call us and we'll help you determine the best options for your needs.

VISIT US ONLINE

This is a great time to visit sdge.com/solar and get familiar with all of our online tools and resources for NEM customers. We'll be involved in getting you interconnected, and we'll be your partner once you are. If you need special assistance, call us at 1-800-411-7343 and ask for a Net Energy Metering specialist.

PART 2:

INSTALLATION & CONNECTION

Now that you've decided to install a renewable system, you'll need to engage the professionals. First, find a contractor you trust. Then, connect with us.

STEP 6: FINDING A CONTRACTOR

A qualified solar contractor can help you navigate the process, take care of paperwork and permits, and of course safely and expertly install your system. Most contractors should provide free written estimates and comprehensive quotes.*

Search contractors by ZIP code at www.csithermal.com/eligible_contractors

CONTRACTOR CHECKLIST

- ☑ **Get Three or More Estimates:**
  Estimates can vary in price. Get them in writing.
- ☑ **Licensed Contractors Only:**
  Confirm your contractor's license at
  www.csithermal.com/eligible_contractors
  Check it regularly.
- ☑ **Check Insurance & Bonding:**
  Make sure your contractor is sufficiently insured for your project.
- ☑ **Request References:**
  Try to speak to at least three, and visit previous projects if you can.
- ☑ **Read Before You Sign:**
  Take the time to read and understand documents before signing.

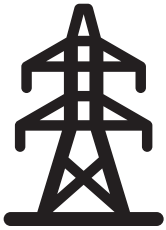
KNOW YOUR RIGHTS

Empower yourself and know your rights before signing. There are new rules governing solar installation, to protect and inform consumers. For example, state and federal laws may provide a 3-day "cooling off" period to cancel your contract. Consult your legal professional.

* SDG&E does not endorse, qualify or guarantee the work of any contractor, vendor or other third party and is not responsible for any goods or services selected or purchased by customers.

STEP 7: STAYING CONNECTED

When your system isn't producing power – for example when the sun sets – you'll need a backup source of energy. Since you'll be connected to the grid, we'll always be here to supply you with reliable power. You can also invest in a battery system for storage. We've outlined some things to consider to help you with making an informed decision.

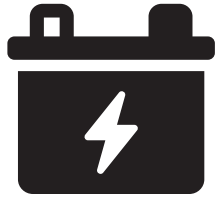


THE ELECTRIC GRID

You don't lose your surplus energy if you decide storage is not for you. The electric grid is capable of absorbing your excess generation. When this happens, we credit you for it through Net Energy Metering (NEM). You'll be connected to the grid regardless of any storage solutions you invest in, so we'll always be here to provide power when you need it.

WE ARE HERE FOR YOU

In the event of an emergency, or simply when your system isn't generating (like when the sun isn't shining) we'll always be here to support you.



BATTERY STORAGE

As technologies improve, batteries are increasingly able to store energy generated through solar or other renewable generation systems. Batteries can be expensive and bulky, but allow you to retain more of your own generated energy. If you use a lot of energy when the sun isn't shining, batteries might be an option.

CREDIT CAPS FOR BATTERY STORAGE

In order to ensure a consistent and sustainable NEM program, statewide rules place caps on how many credits customers with energy storage batteries are eligible to earn each month. These caps are based on your system's production capacity, to ensure you receive credits only for renewable energy exported to the grid. You can learn more at sdge.com/solar.

STEP 8: INSTALLATION

Site Evaluation: Your contractor should assess your site for optimal and safe installation.

Permitting: Your contractor will usually manage paperwork. A number of documents will need to be filed.

Purchase Equipment: Many contractors have a go-to dealer and can place this order for you.

SDG&E Application Submission: Once you or your contractor submits your application, it usually takes up to five business days for your "Permission to Operate" (PTO), or activation, to go live.

Installation: Installation time will vary, depending on system size and other factors. Your contractor will provide an estimate.

Inspection: Your contractor will schedule a local inspector to visit and approve your installed system.

What If I'm Not Approved?
Occasionally we'll return your application for correction or completion, which can delay your approval.

If there is an issue with your application, we'll send you an email alerting you of the issue and to contact us if you need to.

Live in an Older Home?
If you have a home or building with older wiring, we offer a Renewable Meter Adapter (RMA). This will make your home NEM compatible without your having to upgrade your electrical panel. Your contractor can help you determine if this is the right option for you.

TIP: GET ON THE FAST TRACK
If you're installing a system with capacity less than or equal to 30kW, ask your contractor to get you on the fast track. With additional documentation provided by your contractor, you may be able to bypass inspections and other steps to get "Permission to Operate" more quickly.

STEP 9: GET CONNECTED

You can submit your application to us online, or your contractor can do it for you. Even if your contractor applies on your behalf, you'll need to stay involved and make some key decisions.

Apply online at mypartners.sdge.com

CHOOSING A PRICING PLAN

You'll be able to elect an electricity pricing plan in your application. Consider whether you plan to make any changes that will affect your future energy usage, like buying an electric car. Keep in mind that for most available plans, once you enroll in a plan, you can only make changes once every 12-month cycle.

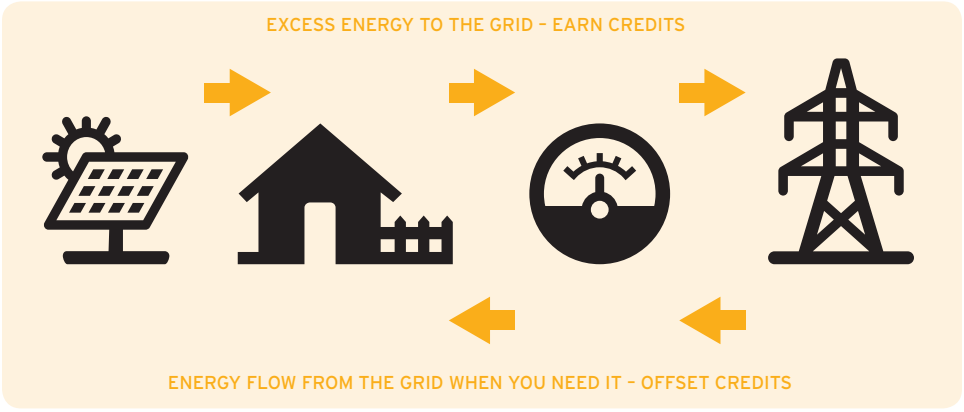
- **Not Sure Which Plan to Choose?** It may take a while for you to see and understand how your new system affects your energy usage, so you may not know which plan will be the best one for you. If you need help deciding, log in to sdge.com for online tools and resources to help you make an informed decision based on your specific energy goals and habits.

- **Use Electric Medical Equipment?** If you use medical equipment at home, or are a Medical Baseline customer, our default plan may not be right for you. Please consider your pricing plan options before your system is activated, and sign up for a plan that supports your needs.

CHOOSE A PRICING PLAN THAT WORKS FOR YOU. We offer a number of "Time-of-Use" pricing plans – The price of electricity varies based on when you use it. We call this "Time of Use". Go to sdge.com "Residential Pricing Plans" to find the one that's right for you.

NEM: NET ENERGY METERING

Net Energy Metering, or NEM, tracks energy flow in both directions: out to the grid from your renewable system, and in to your home or business from the electric grid. If your system generates more than you use, you earn generation credits to offset eligible charges.



How NEM Works
When your system feeds excess energy into the grid, your NEM meter lets us know and tracks and banks credits you earn for excess generation. When your system isn't generating energy, or generates less energy than you need, the meter registers the electricity you're using from the grid. We'll apply any previously banked credits and bill you the difference.

Virtual Net Metering (VNM)
This option is for individually metered multi-tenant properties, like apartment complexes and office buildings. One system with multiple users. Think of it like a community garden where everyone shares the harvest: each tenant is allocated a percentage of the generation credits towards their monthly bill. We do the math and distribute the generation to each tenant's monthly bill.

NEM Aggregation
If you have a property with multiple meters, and a solar system installed on one of your structures, you can combine your generation and usage into one bill. For example: surplus power generated from a house rooftop can be credited against a separately metered water pump's usage. Contact our Customer Generation Team at netmetering@semprautilities.com to see if you qualify.

EFFICIENCY TIP
Run major appliances, like dishwashers and clothes dryers, outside the peak hours of 4pm–9pm.

YOU'RE CONNECTED! WHAT'S NEXT?

If you've taken all the steps outlined here, congratulations!
And welcome to the renewable energy community.

We're here to support your success. Once you're interconnected,
we'll be in touch with lots of tips and tools to help you save.

APPENDIX

GLOSSARY

Generation Credits
The credits you earn for excess energy your renewable system feeds out into the grid. These credits can be used to offset eligible charges for kWh delivered by SDG&E.

Grid
The infrastructure that makes up our physical electricity network, from large power stations to the wires connecting to homes and businesses.

Kilowatt Hour or kWh
The unit used to measure energy usage. For example, one kWh registers on your electric meter when 1000 watts are used for one hour.

Net Energy Metering or NEM
A billing program that tracks energy flow in both directions: out to the grid from individual renewable systems, and into homes and business from the grid.

NEM Aggregation
NEM Aggregation is Net Energy Metering for eligible customers with multiple meters on the same property.

"Permission to Operate" (PTO)
When customers receive "Permission to Operate" from SDG&E, that means they can begin operating their generator in parallel with SDG&E's electrical grid.

Photovoltaic or PV
The most common type of solar technology, used to convert the sun's light into electricity.

Power Purchase Agreement or PPA
An agreement with a third-party service provider to install and maintain a renewable energy system on a property. The PPA provider retains ownership of equipment and the customer pays the PPA provider an agreed upon rate for the electricity generated by the system.

Time of Use
Our Time-of-Use plans are based on both how much and when you use energy, and offer you more choices to better manage and control your energy costs.

Virtual Net Metering or VNM
Metering for individually metered multi-unit properties with solar or other renewable systems installed, allowing tenants to receive an allocation of the renewable energy generated.

ADDITIONAL RESOURCES

- **Solar Calculator**
  gosolarcalifornia.org/tools/calculators
- **Go Solar California**
  gosolarcalifornia.org
- **Contractor Locator by ZIP**
  csithermal.com/eligible_contractors
- **SDG&E Customer Service**
  sdge.com/residential/customer-service

sdge.com/solar

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These programs are funded by California utility customers and administered by SDG&E® under the auspices of the California Public Utilities Commission.
Rebates and incentives are provided on a first-come, first-served basis until program funds are no longer available.

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