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Solar  
Negotiators®

**FREE EBOOK**

# SOLAR CUSTOMER HANDBOOK

Find out how to get the most out of going solar. Get helpful tips on system maintenance, system monitoring, and how to deal with issues that arise with your solar system.

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Solar Negotiators wants to make your decision to go solar successful. In this document you will find all the information you need to get set up for long-term success. We designed this manual with you, the customer, in mind. Each chapter is based on topics that are reviewed with our clients during their post-installation orientation. This appointment is a necessary step to ensure customers understand how their solar system works and how to optimize its performance.

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**Can't find what you're looking for?**

Visit our resource center for more tips and information regarding solar.

Solar power is simple, right? It works by taking the energy from the sun's rays and converting it into electricity. Actually, the process has a lot more to it. It is important to understand how each of the components work to power your home. Here is a brief overview:



## Solar Panels

The sun provides photons of light that hit cells on a panel. If conductors are attached to the positive and negative sides of a cell, it forms an electrical circuit. When electrons flow through such a circuit, they generate electricity.

1

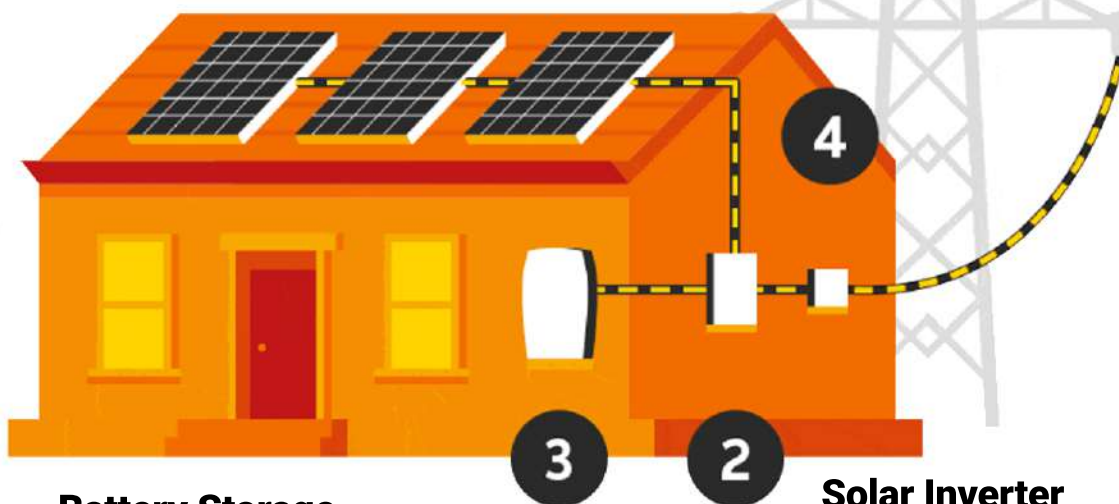
## The Power Grid

Grid-tied systems allow you to send excess production to the grid (see step 4 below) and allow you to draw power from the grid at any moment when your system's production is not covering your home's demand (like at night time).

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## AC Current

With a grid-tied system, the AC electricity will supply your home and its appliances first, as needed. At any moment, if the home's needs are satisfied, excess electricity from the system is automatically fed into the grid, creating a retail credit with the utility for those units of electricity.



## Battery Storage

A battery's storage capacity would be filled up with excess production after a home's needs are satisfied at any moment. The battery's "needs" would be satisfied before excess electricity would be sent to the grid. Currently, batteries are expensive and are not always recommended.

3

## Solar Inverter

The electricity from the solar panels makes its way to the inverter. The inverter turns DC electricity (raw electricity) into AC electricity (usable electricity).

2

## Credited Sources:

Sunpower®, 2019, [Solar Basics: How Do Solar Panels Work?](http://www.sunpower.com) (www.sunpower.com)

Luke Richardson, 2017, [How Do Solar Inverters Work](http://www.energysage.com) (www.energysage.com)

## Where can I find this information?

Having your system information on hand will give you a better understanding of how your solar system is expected to perform. If you no longer have access to this information, you can reference your solar contract or contact your solar provider for copies.

### What is my system size?

**You can find this in your solar contract.**

Your home's energy consumption requirements will determine the size of your solar system. The system is designed with your annual electricity usage in mind, to offset the cost of your total power consumed in that year. You can find this information listed on your solar contract.

### What should my energy bill be now?

**You can find this in your solar contract.**

Your energy bill will now be paid once per year instead of on a monthly basis. This is called a TrueUp statement. Your estimated TrueUp amount will depend on your % offset and your usage after you go solar. It is important to keep your lifestyle consistent with the design of the system to minimize your TrueUp cost.

### What % of my bill will it cover?

**You can find this in your solar contract.**

The estimated offset of your annual utility consumption (in %) should be listed on your solar contract. This is calculated using your power usage before you go solar. This can be helpful in understanding expected annual cost of energy, aka your TrueUp amount.

### How many panels do I have?

**You can find this in your solar contract & layout.**

Knowing how many panels you have will help you for a few different reasons:

- (1) approximate system size
- (2) check to see if all panels are producing
- (3) provide to panel cleaning pricing

You will receive several documents between the time you first look into solar and the time your system is turned on. We want to help you sort through everything. Find out what documents you should keep on hand and why they will protect you long-term.

## Solar Agreement

Your solar agreement is the most important document to keep on file after you go solar. It has all the information you need to know about your solar system: system size, equipment specifications, included services and warranty details.

### IMPORTANT INFO

- system size
- expected year 1 offset
- agreement price
- equipment

## Warranty Paperwork

Your warranties protect your solar system and your roof. There are a few types of warranties, and they each play an important part in long-term performance:

- ( 1 ) Manufacturer warranty: Covers production
- ( 2 ) Workmanship warranty: Covers labor
- ( 3 ) Roof penetration warranty: Covers roof area under
- ( 4 ) Inverter warranty: Covers inverter functionality

### IMPORTANT INFO

- protects system
- use if equipment fails
- utilize if system is underproducing

## Paid-In-Full Invoice

Depending on your contractor you will receive a paid-in-full invoice at the time of your orientation or shortly after your project is completed. This document is helpful when filing IRS form-5695 when filing your tax return.

### IMPORTANT INFO

- proof that you have paid-in-full
- shows the total system price

## Solar Design Layout

Your solar design shows a blueprint layout of your home and property. It shows where the solar panels are installed on your roof or property. Generally, you can look at this document and see how much of your roof is covered in solar and how much is not covered in solar.

### IMPORTANT INFO

- shows where panels are installed
- shows how many panels you have

## Copy of Solar Permit

Building departments of all cities and counties require a construction permit for any home improvement project (solar installation, air conditioning, pool, etc.). A copy of your solar installation permit is helpful to have on hand in case you ever need to show it to anyone.

For instance, if you plan on doing any new construction in the future, the building department would want to see a copy of that permit as they sometimes lose their own copies.

### IMPORTANT INFO

- helpful if you do other home improvement projects in the future
- proof of building dept. compliance

## Equipment Spec Sheets

Panel and inverter specification sheets are documents that detail the components and properties of your solar equipment. Electrical, mechanical, and physical properties are described.

### IMPORTANT INFO

- specific equipment details
- manufacturer's production warranty
- helpful if repair work is needed

If you need help reviewing any of these documents, please reach out to our team. We have experts standing by, available to walk you through your warranty information and other sales-related documents. **844-OWN-SOLAR | [www.solarnegotiators.com](http://www.solarnegotiators.com)**.

**CALL US NOW**

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# HOW TO READ YOUR ELECTRIC BILL

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## The Basics of Solar Billing

- Your electric statement becomes your Net Energy Metering Statement (NEM)
- NEM billing is done once every 365 days instead of every month
- Your annual NEM bill is called a “True-Up”
- Many homeowners get a \$0 True-Up bill when their solar system’s 365-day production is equal to or greater than their 365-day usage



### Important Key Terms:

**NEM:** Net Energy Metering is an electricity billing mechanism that allows consumers who generate some or all of their own electricity to use that electricity anytime, instead of when it is generated. Your electric meter will run backward if you are producing more electricity than you are consuming at any given moment.

**Time-of-Use:** A rate schedule where certain times of the day and year determine the rate at which a kilowatt-hour (unit) of electricity is credited or debited to an associated account.

### Helpful Tips to Keep Your True-Up Low:

1. Monitor your monthly NEM statements regularly
2. Try to keep your lifestyle consistent with the design of the system
3. Run your laundry and dishwasher, when it is not an inconvenience, between 10 AM - 4 PM.

### Company Resources:

[See an example of a TrueUp statement here](#)

[Watch our video on \*How to Read Your Bill\*](#)

# USE YOUR TIME WISELY

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In this section, we are discussing Time-of-Use rates, also known as TOU rates. It is important to be conscious of what rate schedule you're on so that you can align your lifestyle habits with your rate schedule to reduce your electricity costs. The time of day (and month of the year) you use your electricity will determine the rate at which your utility company will charge you.

## Time-of-Use Rates

The utility credits your account at the peak-time rate or off peak-time rate per kilowatt-hour when your solar system produces more than you are using at any given moment. When you are using more than your system is producing, like at night, your utility debits your account at peak or off-peak rates, depending on the time of day and month of the year. You can check your utility's peak and off-peak times on your utility's website.

## Shift Electricity Use to Save Money

To optimize your annual net-energy-metering cycle with your utility, try to maximize your peak-time credits and try to minimize your peak-time debits.

Most time-of-use rate schedules have a peak-time window between 3/4 PM to 8/9 PM, and a peak-time season of May to August.

Your rate schedule may be different so it is important to check with your utility to see when your peak and off-peak times are. See links below to check online.



### PG&E Time-of-Use Rates

[visit website](#)

### SCE Time-of-Use Rates

[visit website](#)



# TIPS FOR MAINTENANCE

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The key to having a successful solar experience is monitoring your system's production and your net-energy-metering year to date balance as often as possible. Since you only pay your utility bill once per year, it is important you keep an eye on your balance throughout the year. Monitoring helps to identify issues or spikes in consumption that can lead to higher-than-expected bills.

## Monitor Your Production

After your system is installed, make sure you get your login credentials to access your online monitoring account. There you can see how much power your new system is producing. If you see something concerning, or have a question about your account, reach out to your installing contractor.

## Keep Your Panels Clean

The cost of panel cleaning is around \$3 per panel. The larger the system you have, the more you will benefit from getting your panels professionally cleaned. Dirty panels can cause you to lose up to 33% of your energy production. Debris and grime build-up make it harder for the sun to make its way to your panels.

## Prevent Damage When Possible

Did you know that damage to your solar system caused by animals **is not** covered under any standard contractor warranty? Consider installation of critter guard to defend against outside hazards. Installation is quick, easy and affordable and provides lasting protection.

REGISTER OR LOGIN HERE:



Imagine if your system was saving you \$350 per month (\$4,200 annually) and you lost 20% of your production due to dirty panels. That's \$840.00 in lost solar production per year. At \$100 per cleaning— that is a great return on investment.

[Learn more about the Importance of Panel Cleaning Services](#)

DIRTY  
NESTING  
PIGEONS



WIRE  
CHEWING  
SQUIRRELS



LEAF  
DEBRIS  
BUILDUP



ROOF  
ROT



# MONITORING SETUP

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## Protect Your Solar Investment

Congratulations! Your new solar energy system has been installed and is now pushing power to the grid. Your only major responsibility when managing your new system is to monitor your solar production.

### The Importance of Monitoring

Why is it so important to monitor your solar system's production? Unless you have a production guarantee with your solar installer, your warranties will not cover gaps in solar production. Your solar warranties will only cover the necessary replacements, repairs, and labor required to get your solar back and functioning as promised.

#### STEP 1

### Get Registered

Your solar company should be able to assist with registering for your online monitoring account during your final walkthrough appointment. It is important that they also explain how your solar inverter communicates with your monitoring software to report production details.

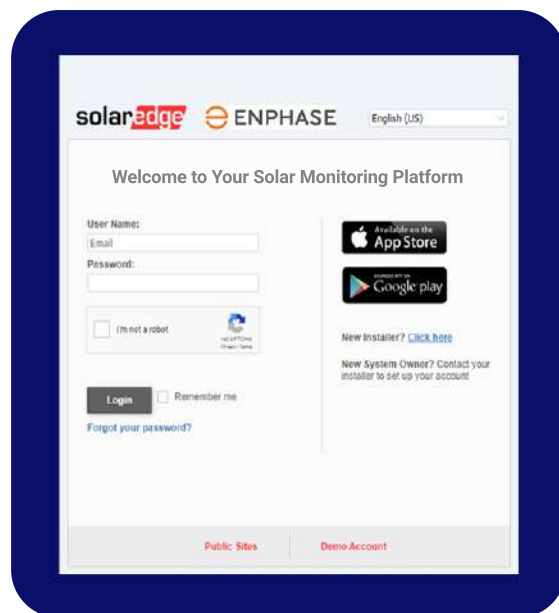
- (1) Look for a registration email from your installer
- (2) Click on the registration link to sign up
- (3) Fill in your account details and create a password
- (4) Navigate to the correct website and log in



### WARRANTY COVERAGE

It is a common misconception that a solar warranty will cover reimbursement for lost energy production.

- ✗ solar production lost
- ✗ monitoring services
- ✗ \$ owed to utility company
- ✓ equipment replacement
- ✓ labor for repair
- ✓ diagnosis/troubleshooting



**STEP 1**

**SolarEdge Monitoring Guide**

**Account Summary**

This monitoring platform provides enhanced PV performance monitoring and yield assurance through immediate fault detection and alerts at the module level, string level and system level.



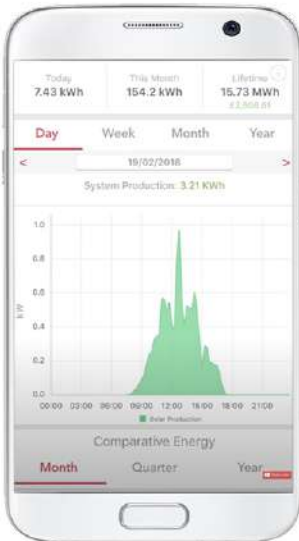
**Account Dashboard**

An at-a-glance view of all your information collected by the portal about your PV system.



**Production Overview**

Collective generation figures show what you are currently producing, power produced daily, monthly and lifetime.



**Daily Production**

Select the “day” tab to view your production during specific days or times of the day.



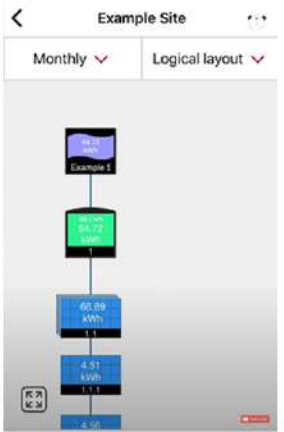
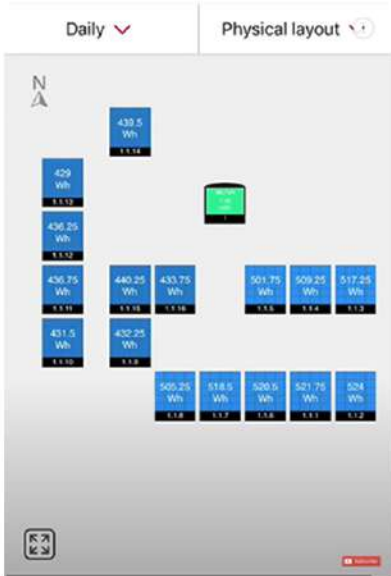
**Energy Comparison**

Compare the energy produced by your system during corresponding periods in previous years.

**STEP 3**

**Schematic Layout**

Click on the “layout” icon at the bottom of the screen. Here you can see a bird’s eye view of the placement of your solar panels. Your inverter will be shown in green. The figure listed on each panel is the amount of energy produced in a specific time period. Use the time period drop-down menu to switch the range in which you want to view production details.



**Zoom In For Details**

To zoom in, just use your fingers to expand the image.

## STEP 2

# Enlighten Monitoring Guide

### Explore Solar Performance Details

The Enlighten mobile app from Enphase makes monitoring your solar investment easy. All your system information is accessible at your fingertips, without needing to scroll or search to find what you need. Keep in mind, this guide may differ from what you see as this [covers the fully-populated app features](#).  
 \*This data is not an accurate account of your energy usage. You must rely on your utility statements.



#### Energy Screen

Shows energy for the date range you select in a clearly visualized graph.



#### Solar Production

Shows how much energy has been generated by your solar array and where it was sent.



#### Energy Usage

Highlights where the power you used came from.\*



#### Net Energy

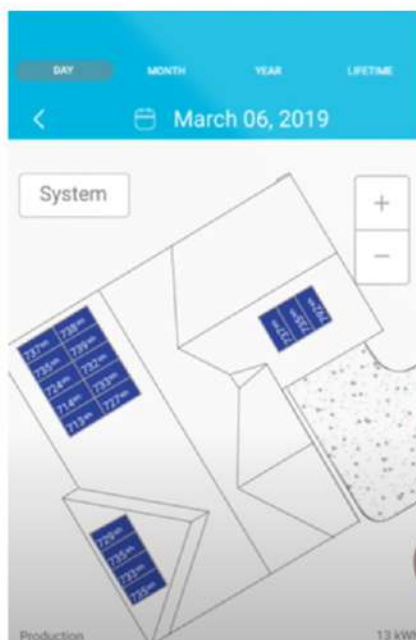
Available only if you have consumption metering installed. Compares energy used with energy produced.

## STEP 3

### View Array Layout

This shows a virtual representation of your solar array to match the panels and micro inverters installed on your roof. You can view the current day's solar panel production, or select another day, month, or year to view.

[Watch the full tutorial of the Enphase's new Enlighten App here.](#)



#### Array Close-Up

Each panel displays the production for that specific micro inverter/panel pair.

## Know TrueUp™ Software Guide

- ✓ production graph
- ✓ energy usage meters
- ✓ system failure alerts

### Data at Your Fingertips

Know-TrueUp™ monitoring software is a Solar Negotiators exclusive product. It was developed to help solar customers monitor both sides of their energy data.

You can view your consumption and solar production numbers side by side for easy comparison. Use it as a tool to manage your energy usage and also verify your solar system is working to power your home effectively.

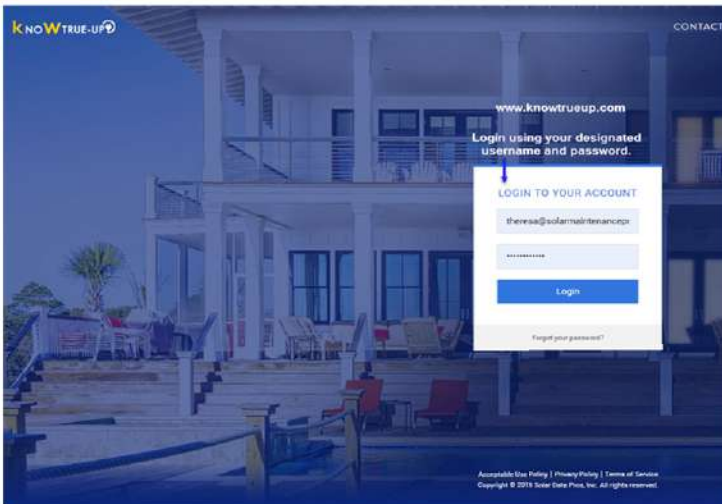


[Click here to sign up](#)

### STEP 1

#### Get Registered & Login

To get registered for this software, you must either have chosen Solar Negotiators for your solar installation or called into their office to purchase the service. Once we register you on our end, you will receive an email with account credentials you can use to login the software's website.

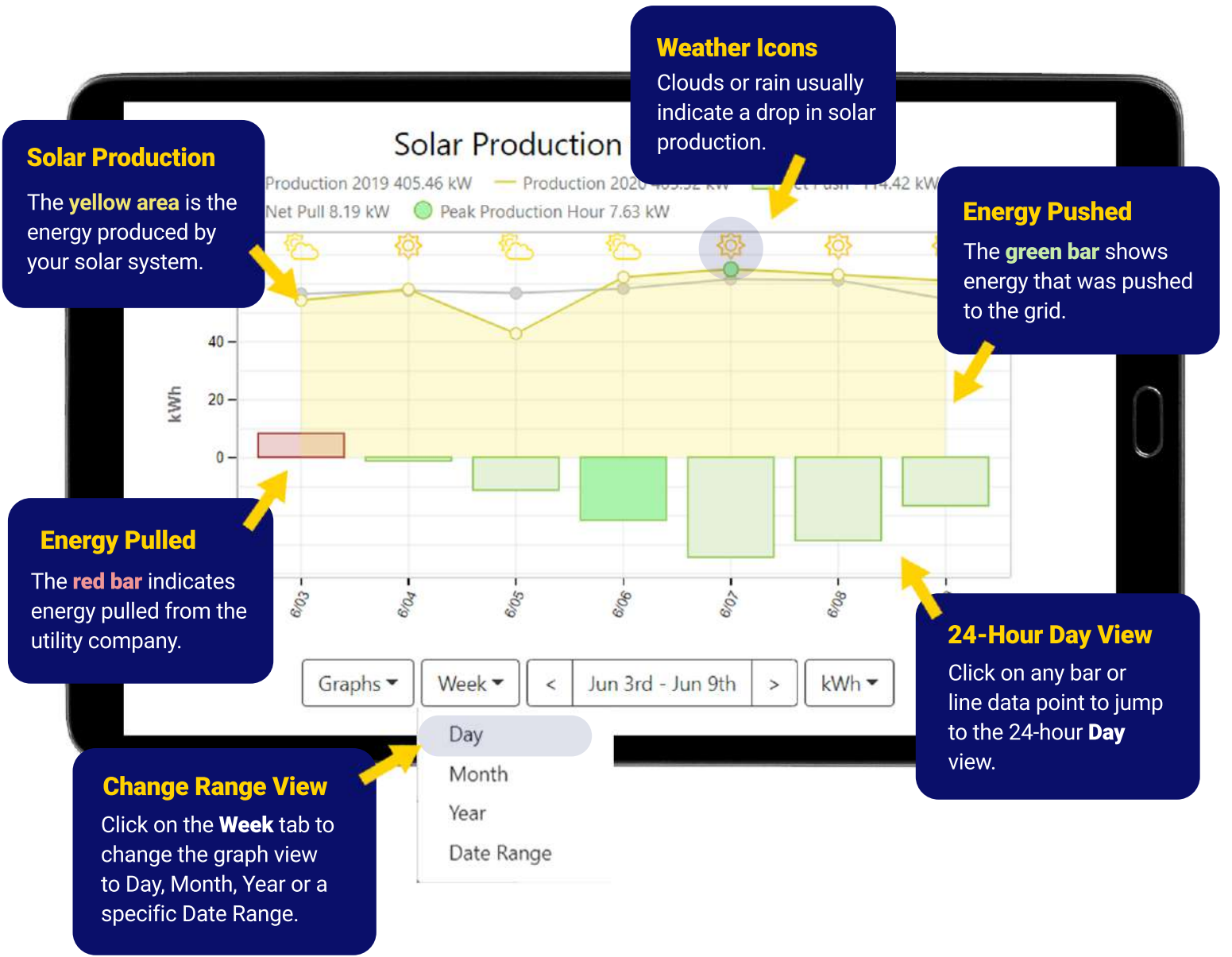


1. Go to knowtrueup.com
2. Check your email for login credentials
3. Enter your login information to sign in
4. If you forgot your password, select "forgot password" below the Login button

[Click here to login](#)

**Software Features**

Because solar is on a 12-month billing cycle, it can be hard to estimate what your annual TrueUp will amount to. We combine your energy data in one dashboard, making it easy to stay on track.

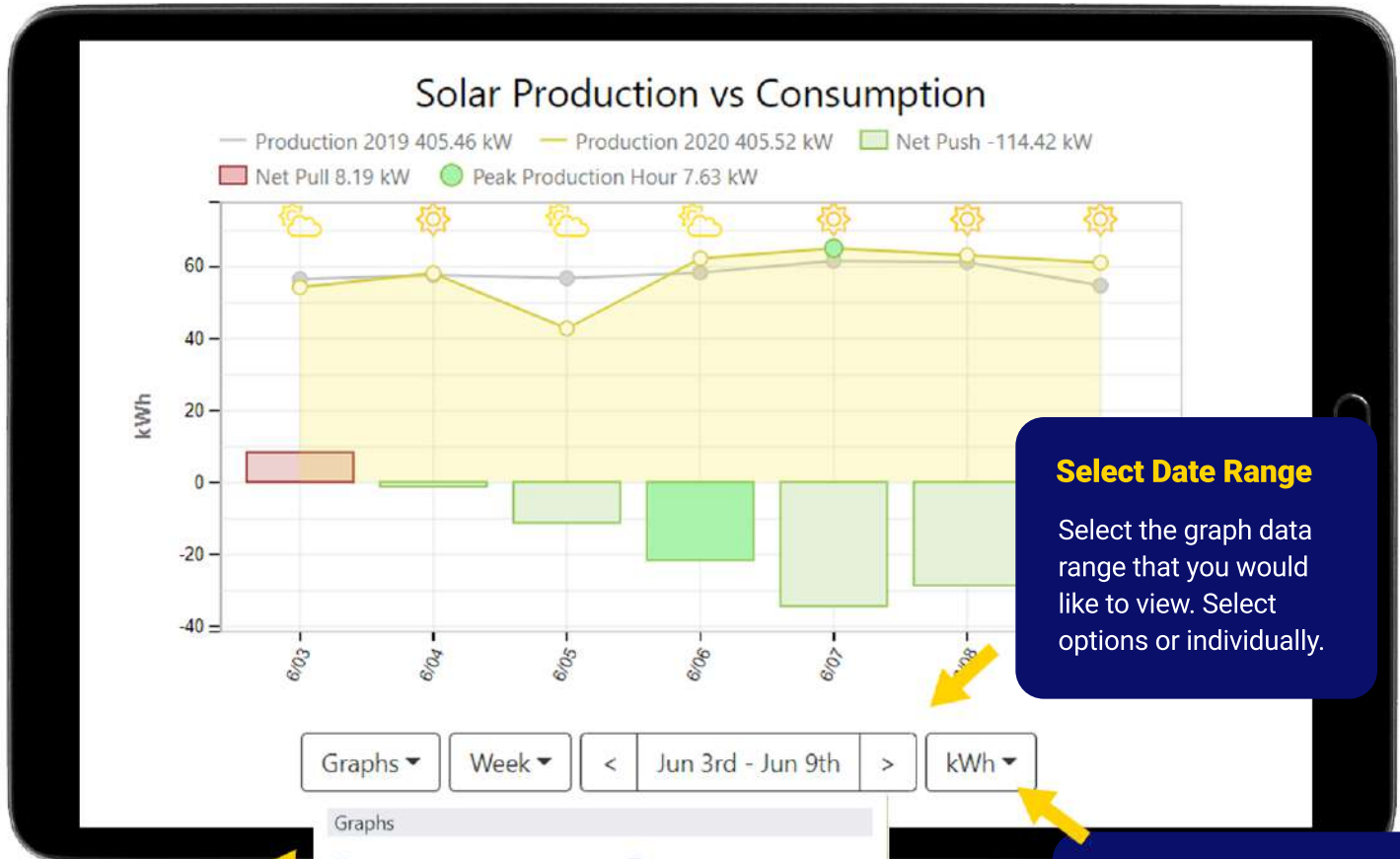


**IMPORTANT DISCLAIMER**

\*Please note: it is still important to check your utility statements each month as these figures are not an accurate representation of your utility data.

**Learn to Customize Views**

We have built in the most advanced tools into our software to help track your energy usage and solar production information. Easily select what range or view you prefer to manage your data.



**Select Date Range**

Select the graph data range that you would like to view. Select options or individually.

**Dollars or Killowatt**

This figure is an estimated value. Our software uses a .25 per kW/hr to project a monetary value.

**Data Comparison**

Compare your data over the previous year. This feature overlays the previous year's data with a **Gray** line.

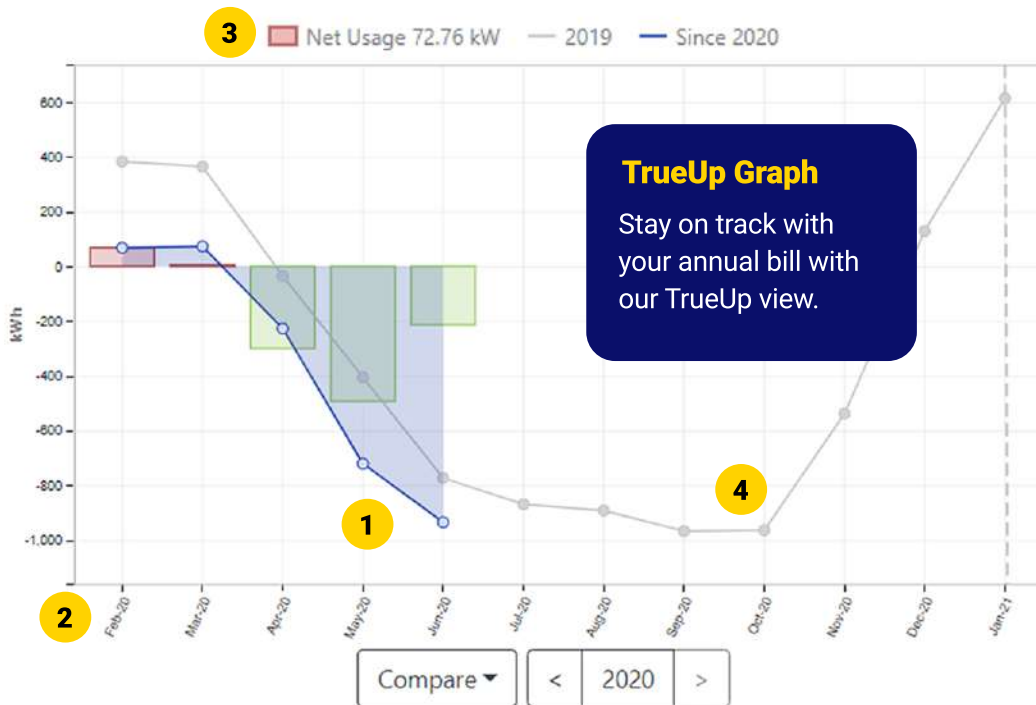
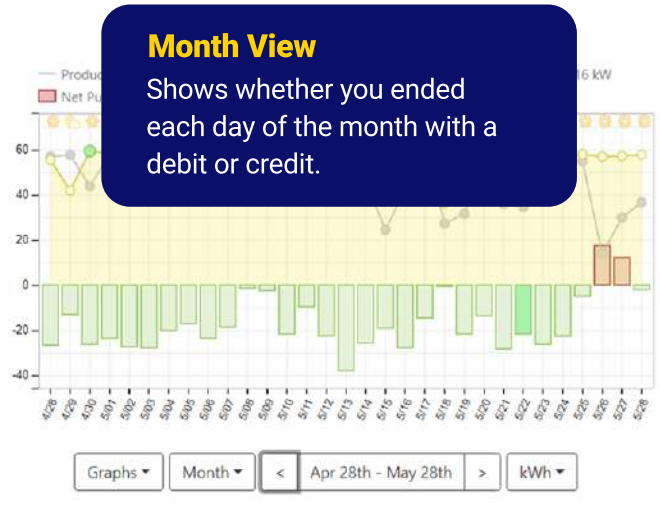
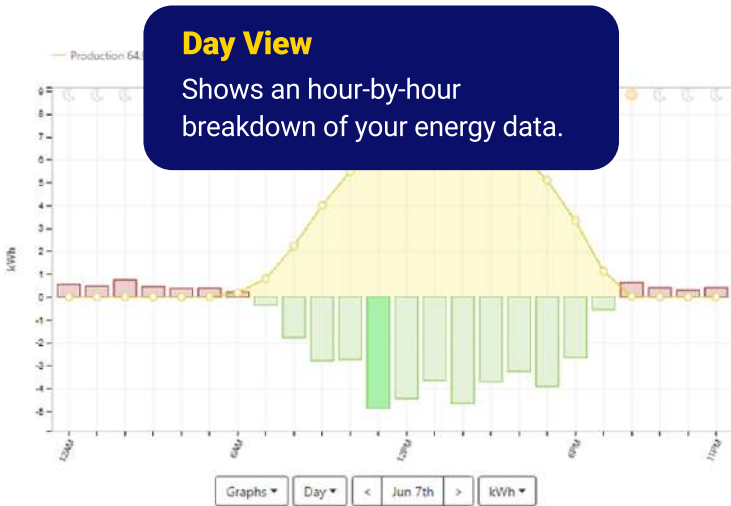
**Select Data Type**

Our default is set at **Solar Production** and **Net Consumption** for current year.

- Graphs
- Solar Production
  - Net Consumption
  - Total Consumption
  - Cumulative Consumption
  - Previous Year
  - Previous Year
  - Previous Year
  - Previous Year
- Options
- Show Weather

**Date Range Graph Views**

Our range of different views help you identify issues with production and over usage. This can be very helpful when investigating causes of unexpectedly high bills.



**Year Summary 1**

The **blue line** shows a running total of your TrueUp balance.

**Cycle Dates 2**

The data populates to show how far into your 12-mo. cycle you are.

**Net Usage 3**

Tells you how much power you have used for the year so far.

**Comparison 4**

The **grey line** shows your trends for the previous year.



## Enjoy Your Future Savings

Now that you've read through our *Solar Customer Handbook*, you're well on your way to a successful solar experience. Solar Negotiators invests in solar customer's future savings by equipping them with the right tools they need to make their investment work to its full potential. For additional resources, see other topics we've covered or ask us a question by calling our office at 844-OWN-SOLAR or visiting us online at [www.solarnegotiators.com](http://www.solarnegotiators.com).



## Need Solar Service?

Maximize your system's performance.

- Panel Cleaning
- System Inspection
- Monitoring
- Energy Updates

**\$19.95**  
per month

[Sign up now](#)

### Additional Resources:

[Consumer Protection Guide](#)

[Should I Add More Panels?](#)

[Why Do I Still Have a Bill with Solar?](#)

[Batteries vs. Generators](#)

[How Often Do I Clean My Panels?](#)

[Monitoring Tips](#)

