PUGET SOUND ENERGY

Net Metering

Reading your net and production meters

Welcome to PSE Net and Production Metering

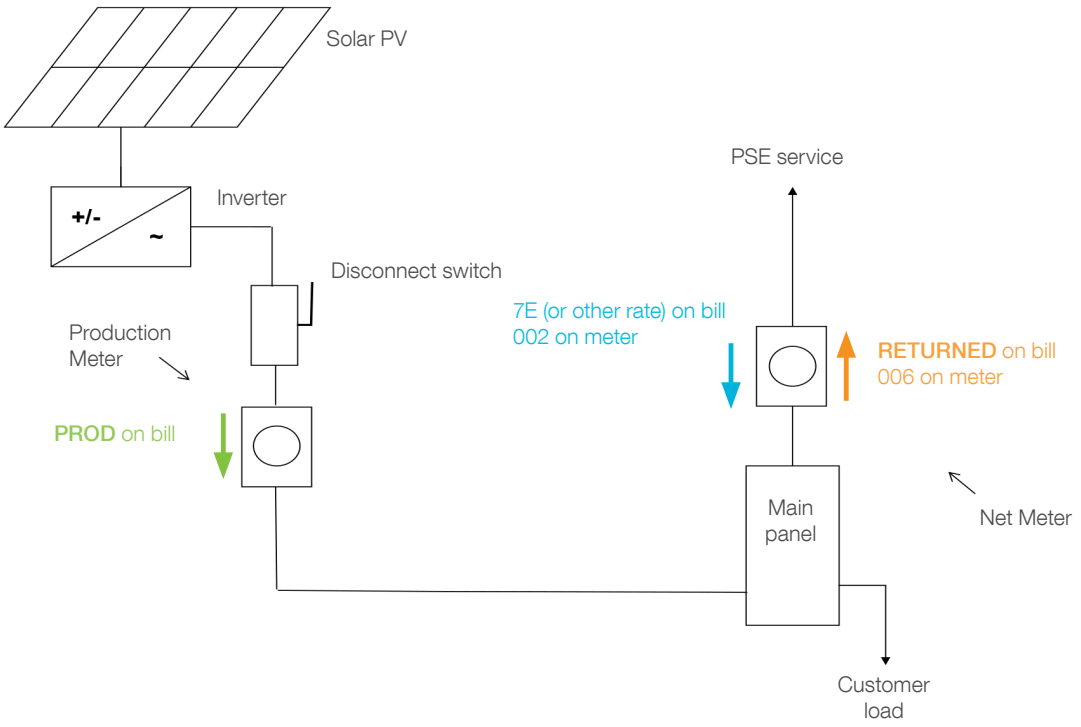
In this guide you will find:

- An annotated example of PSE's billing statement
- A schematic and diagram to help understand the bill and meters
- Information on how to read your meters

You will also find background information on:

- Production Metering
- Production Metering with battery back-up
- Meter multipliers
- Net billing vs. total usage
- Basic charges

Figure 1. Typical Solar Array



What do I pay?

You pay for the difference between the electricity (kWh) **delivered from PSE (7E, typically)** and electricity that you **returned to PSE (RETURNED)**.

- On the sample bill above that is line **7E** minus line **RETURNED**
- On your net meter it would be **code 002** minus **code 006**

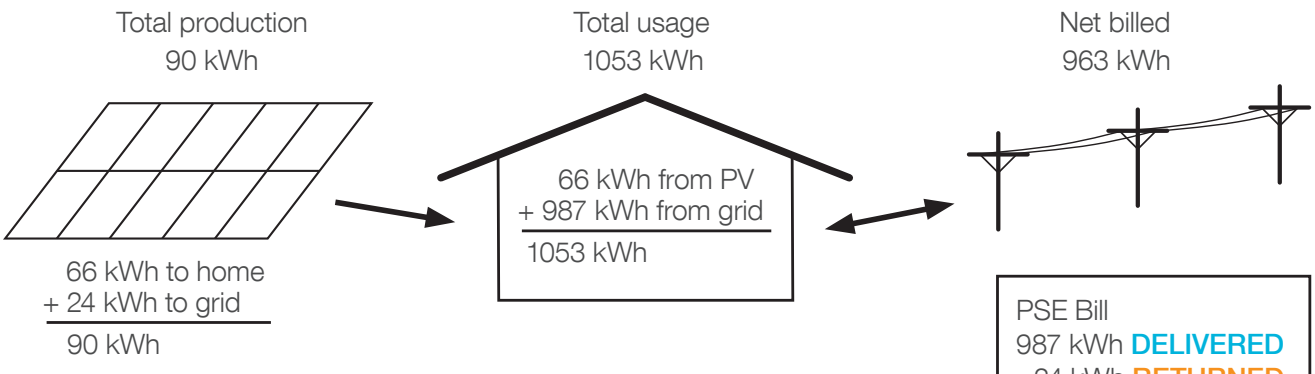
This is your net energy billing for usage from PSE

What is my home's total energy usage for the month?

Total usage would involve all the production and net meter registers and is all **production (PROD)** plus **delivered (7E)** minus **returned (RETURNED)** for the home's total kWh usage.

- On the sample bill above that is **production (PROD)** plus **delivered (7E)** minus **returned (RETURNED)**
- On your production meter you can read the production then from the net meter add **code 002** minus **code 006**

Figure 2. Typical November Bill



TIP: Remember Joe Solar's "Total Production" in July was 841 kWh.June production can be eight times higher than December.

Reading your net and production meters

Net Metering

Net metering is the difference between the electrical energy in kilowatt-hours (kWh) that has been **delivered** from PSE to the customer and the excess energy that has been **returned** by the customer to PSE. It is one meter, but it has two separate registers inside it. One register is delivered kWh and appears on the bill as the customer's rate class. This is usually "7E" for most residential customers. The second register in the meter shows returned kWh and is shown on the bill as "RETURNED." Only one register advances at any given time. PSE's billing system shows both registered values but then combines or "nets" the two figures to lower or credit the bill. PSE subtracts the returned kWh from the kWh delivered to the customer. In some months, usually in the summer, customers with larger solar arrays may produce more kWh than they consume on a monthly basis. This excess power returned from the customer is instantly used by the neighbors, but a kWh credit is noted for the generation customer's future use. This "rollover" continues throughout the year until April 30th when, under state law, PSE resets any remaining rollover credits to zero. (This is rare however, as few systems are so large that they offset a customer's total usage for the entire year.) April 30th was also chosen as a date with least impact on solar customers.

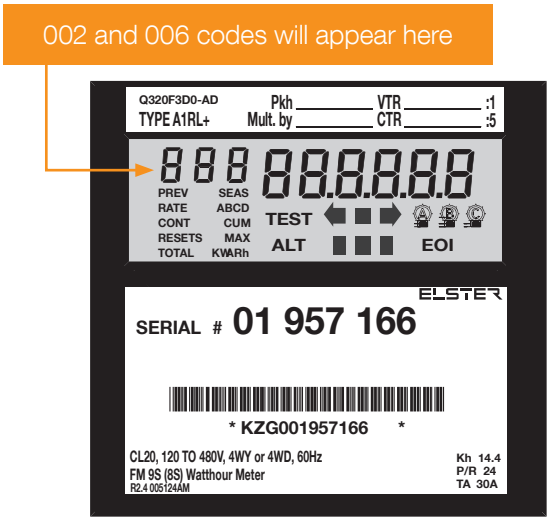
Looking at the display on the face of the net meter, there are codes and kWh values that change every few seconds. Here are definitions of the codes you will see:

888 = This is a display check and shows that the meter is connected and that the display is operating properly. Much like when you turn on a car and all dash lights briefly illuminate, this shows that all portions of the liquid crystal display are operational.

002 = This is the cumulative kWh delivered from PSE to the customer. It is what you have used from the grid (7E or other rate schedule)

003 = This is not applicable for most customers. This shows the highest demand on the meter since it was installed or reset.

Net meters will have a display similar to the one below:



006 = This is the surplus kWh the customer has produced and fed back to grid. (RETURNED)

Beneath the large numbers on the display are two arrows. The upper solid arrow indicates the present state of your system. An arrow pointing left indicates you are sending power to PSE ("spinning your meter backwards," or returning power, or increasing the "006" value). An arrow pointing right indicates you are using power from the grid or increasing the "002" value.

The lower arrow is not applicable

Your monthly bill will normally = code 002 – code 006 or delivered (7E) minus returned (RETURNED) kWh.

PSE meters are listed on the bill by the meter number or serial number. The meter number is on the faceplate of the meter and consists of a letter followed by 8 or 9 digits. e.g. U123456789. Net meter numbers typically start with a "U" or "Z."

Net Metering and Production Metering are two separate programs. Most, but not all customers are able to participate in both programs at the same time.

Production Metering

Production metering is the **total** AC electrical energy output of the customer's renewable energy system, **before** any of the energy is used by the customer.

Production metering involves a second meter, and it is used for participating in the state's performance based incentive which PSE voluntarily administers on behalf of our customers. The production meter indicates the total cumulative kWh the system has produced. To understand how your payment structure works and to learn more about the terms governing the Renewable Energy System Cost Recovery program, please visit **pse.com/reap**.

This meter registers production only, and it has nothing to do with consumption. The total since installation or reset will appear as **code 002.**

Production meters will appear as **PROD** on the bill. Some customers with battery back-up or generators may see **PROD-SUB**. Much like the net meter, some production metered systems need to subtract grid power from their production to calculate accurate renewable energy totals.

Battery-less renewable energy systems should only record the amount of energy delivered by the system to the customer's electrical panel. Battery-based renewable energy systems will sometimes use grid energy to charge the batteries. Thus, the production meters for battery-based systems will record the amount of energy delivered from the utility, as well as the amount delivered by the renewable energy system. Battery-based systems typically require advanced production metering.

Multipliers

Meters may have multipliers on them. For most customers, meters will have a multiplier of "1." On many commercial or non-residential accounts, or battery-based systems, the net and or production meter may have a multiplier of 10 or 40. If the meter face reads "2", it may mean 20 or 80 kWh.

Net billed kWh vs. total usage?

What is the difference between these numbers? It is important to note that PSE's billing is a net billing of energy usage **from the utility.** This is an accurate way for the utility to show what was delivered and returned and therefore what the customer owes on their monthly bill. The monthly bill only factors the delivered and returned kWh on the net meter for what customers are billed by PSE. PSE shows the production meter kWh, but it is only the difference in net meter readings used for the monthly bill.

The home or business's actual usage will typically be higher however, as a customer will always use their own power first. The information is contained within the bill to get a home's **complete** kWh usage. It involves all registers of both the net and production meters. True usage is everything produced (PROD) plus everything delivered from the utility (7E) minus kWh returned to PSE (RETURNED).

If a solar array produced 90 kWh in a month, and the home was delivered 987 kWh from PSE and 24 kWh was returned to the grid by the customer, the customer would be net billed 987 kWh (7E) – 24 kWh (RETURNED) = 963 kWh.

The home actually used the 90 kWh produced (PROD) + all kWh consumed from the grid, 987 kWh (7E) – all kWh returned, 24 kWh (RETURNED) = 1053 kWh

In this example, the customer should only be billed for 963 kWh as that is the net from PSE, but the home actually consumed 1053 kWh that month from the solar array plus the supplemental net power from the grid.

On Figure 1. Net billing is the service or net meter and is "7E" minus "RETURNED" for the net bill of power consumed from PSE. This is also shown as a net total on your monthly bill, and is called Energy Usage for billing purposes. Total usage would be "PROD" plus "7E" or delivered kWh minus "RETURNED" for the structure's total kWh usage.

Basic charge

Under Net Metering, customers are not selling power to PSE and are not being "paid" for the excess power. Net Metering is a kWh credit for lowering the electric energy charge. Customers can take their net energy charge to zero, but will always have a monthly basic charge which is $7.87 for typical rate 7E customer. This covers fixed charges associated with billing and metering that go on whether a customer is receiving or returning power.