

# Expectations

Variables that affect system size and production.

# var·i·a·ble

/'ve(ə)rēəbəl/

*adjective*

1. not consistent or having a fixed pattern; liable to change.

“the quality of hospital food is highly variable”

*synonyms:* changeable, changing, varying, shifting, fluctuating, irregular, inconstant, inconsistent, fluid, unsteady, unstable, unsettled, fitful, mutable, protean, wavering, vacillating, capricious, fickle, volatile, unpredictable, mercurial, unreliable; *informal* up and down  
“the weather on the shoreline is known for being variable”

2. able to be changed or adapted.

“the drill has variable speed”

*noun*

1. an element, feature, or factor that is liable to vary or change.

“there are too many variables involved to make any meaningful predictions”

*synonyms:* factor, element, ingredient, quantity, unknown quantity, condition  
“there are other variables to consider”



# Targeting System Performance

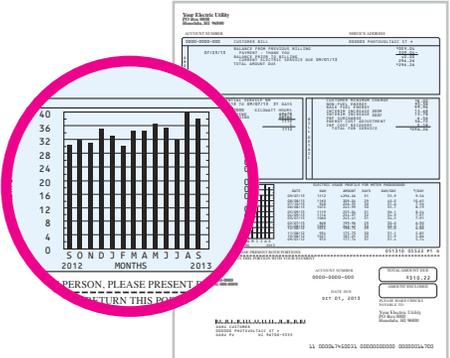
## **Determining estimated system performance is not an exact science.**

We aim to provide you with a realistic range of your system's expected performance. Many variables unique to your home are considered in our calculations. Knowledge of how we determine your system's estimated production will help you understand production fluctuations and maintain reasonable expectations of your system's performance. We won't sell you more than you need, and we'll work with you to plan a KumuKit™ system that's perfectly suited for your home and budget.



# Expected System Production

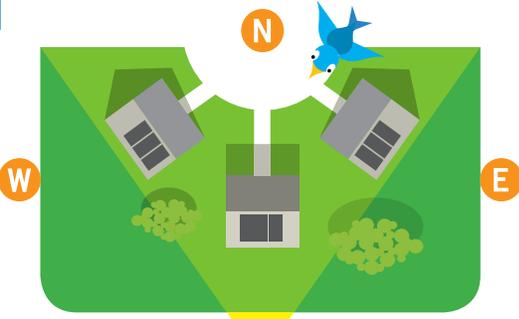
Your KumuKit™ is custom-designed to your home's and family's specific needs. We start by considering expected system production which takes into account past electrical usage, sun hours, roof pitch, architectural and environmental shading, and your home's orientation to the angle of the sun. All these factors help us find a solution that's best for you.



SUN ZONE



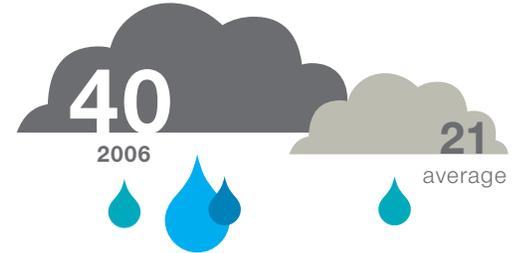
SHADING



ORIENTATION ROOF PITCH

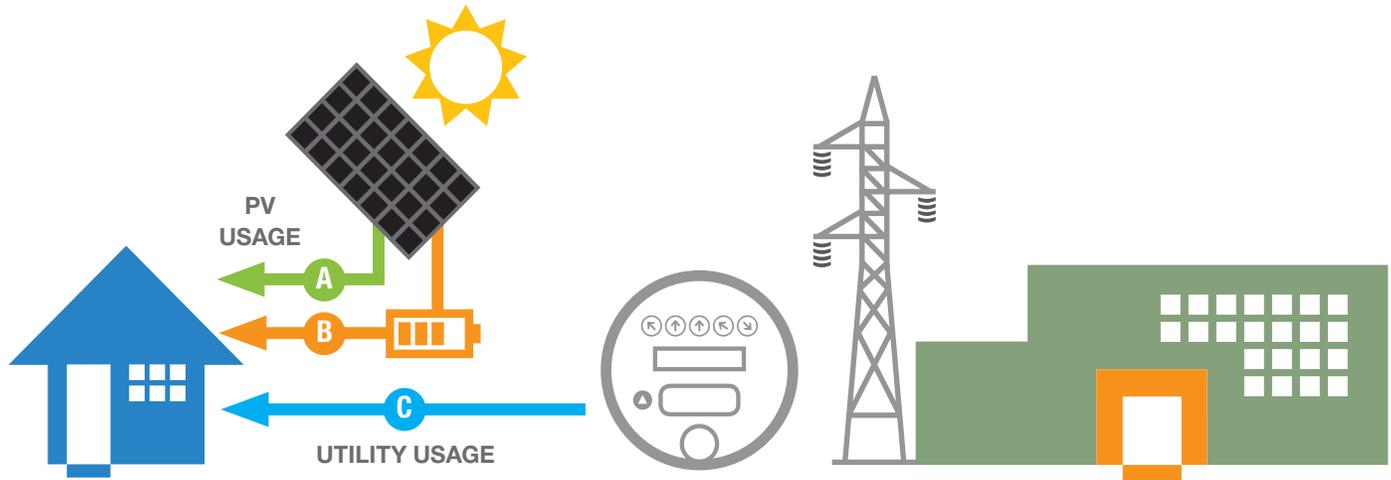
# Seasonal Production Curve

Depending on the time of year, your ACTUAL monthly PV production will differ from the AVERAGE monthly PV production estimated for your system size. Actual production varies month-to-month and fluctuates with seasonal changes in sun angle, length-of-day and weather conditions. Additionally, expected system production may vary from year-to-year. For example, a rainy month this year may be a sunny one next year. In general, you will see higher production in summer months and decreased production in the winter.



A weather anomaly in Mar-Apr 2006 produced 40 days of rain. On average, Honolulu experiences 21 rainy days during these months.





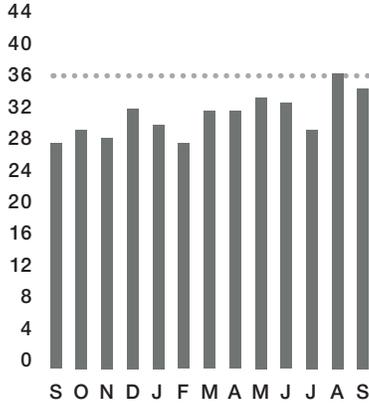
- A** PV electricity delivered directly to your home
- B** Excess PV energy stored then delivered back to your home when needed
- C** Any additional power needed from the Utility

Customer Self-Supply (CSS) is intended only for solar PV installations that are designed to not export any electricity to the grid. Customers are not compensated for any export of energy. CSS enables customers to install PV systems that do not export power to the utility grid. These systems can incorporate the use of energy storage devices, like batteries. All power produced by the customer's system will need to be used or stored to be used by the customer at a later time. In addition, to help cover the fixed costs of providing service to PV customers who remain connected to the grid for continued service even when their PV systems are not producing energy, electric account holders for new residential PV systems will pay a minimum monthly bill of \$25.

## Customer Self-Supply (CSS)

### ENERGY USAGE- NO PV

consumption  
(past history)



### ENERGY USAGE- OFFSET BY PV

consumption consistent  
with past history

highest historical usage



### ENERGY USAGE- INCREASED AFTER PV

increased consumption  
based on past history



### INCREASED USAGE EXAMPLES



family additions



more holiday lights



new electric vehicle



home additions



lower AC setting

Your PV system has been designed to offset your household's electrical usage based on your past history of use. Any change to your normal habits can cause an increase in your home consumption. Some common causes are adding a member to your family or entertaining guests, increased cooking or laundry, stringing extra holiday lights, a new electric vehicle, additions to your house, changing habits, and chilling out with a lower AC setting.

# Home Consumption



Solar Electricity



Get our no-pressure, no-obligation written quote.  
You'll be surprised how affordable solar can be. Get connected.  
Join Hawaii's clean-energy KumuHui.



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We install KumuKits™ on all islands!

