

### TESTING YOUR GENERATOR / METERING

If you want to conduct a test, while the generator is in service, try turning on electrical devices (oven, a/c, etc.) in your house until you see the disk simulator bars on the meter sequence from left to right. In this case, the total kWh reading on channel 4 (kWh IN or Delivered) should increment over time.

Once the above is true, start turning off electrical devices until you see the disk simulator bars on the meter sequence from right to left. In this case, the total kWh reading on channel 24 (kWh OUT or Received) should increment over time.

If you shut off your generator and turn on some load in the house, you should always see the disk simulator sequencing from left to right and channel 4 increasing in value.

### UIMETER vs. GENERATOR METER

The OUT channels of UI's meter are measuring something different from the meter provided by the generator vendor. The vendor's meter measures the total production of the generator system. The OUT channels of UI's meter record only the excess energy that is back fed to UI. The rest of your generator system's output is used to reduce the energy consumed from UI. There is no way to do a direct comparison between the two meters. The best check for most people (with a prior billing history on the same location) is to compare the kWh numbers (not dollars) on today's bill with those from a similar prior billing period.

**Note:** Please consider any significant additions or removals of electrical equipment done during the comparison period when doing this comparison.

### METER DISPLAYS

The tables shown below represent all of the displays you will see on the meter. There is one table for residential meters and one for commercial.

### FOCUS METERS FOR NET ENERGY INSTALLATIONS

DISPLAY VALUES - RESIDENTIAL METERS		
DISPLAY #:	DESCRIPTION:	COMMENTS:
888	SEGMENT CHECK	LIGHTS UP ALL SEGMENTS OF DISPLAY
V	VOLTAGE	(LOOKS LIKE V ON DISPLAY)
1	DATE	DAY / MONTH / YEAR
2	TIME	24 HOUR (MILITARY) TIME
4	CUMULATIVE (TOTAL) KWH DELIVERED	TOTAL ENERGY INTO CUSTOMER FACILITY
5	ON PEAK KWH DELIVERED	ENERGY INTO CUSTOMER FACILITY - ON PEAK
6	ON PEAK DEMAND (KW)	NOT BILLED FOR RESIDENTIAL CUSTOMERS
7	OFF PEAK KWH DELIVERED	ENERGY INTO CUSTOMER FACILITY - OFF PEAK
8	OFF PEAK DEMAND (KW)	NOT BILLED FOR RESIDENTIAL CUSTOMERS
11	PROGRAM ID	74 FOR RESIDENTIAL NET ENERGY CUSTOMERS
(NO NUMBER)	CLS or OPN	DISCONNECT SWITCH POSITION (CLOSED or OPEN) - IF APPLICABLE
24	CUMULATIVE (TOTAL) KWH RECEIVED	TOTAL ENERGY OUT OF CUSTOMER FACILITY
25	ON PEAK KWH RECEIVED	ENERGY OUT OF CUSTOMER FACILITY - ON PEAK
27	OFF PEAK KWH RECEIVED	ENERGY OUT OF CUSTOMER FACILITY - OFF PEAK
(NO NUMBER)	GSS	NUMBER OF CONCENTRATORS HEARD (RADIO RECEIVERS - MEANS NOTHING TO CUSTOMERS)

DISPLAY VALUES - COMMERCIAL METERS		
DISPLAY #:	DESCRIPTION:	COMMENTS:
888	SEGMENT CHECK	LIGHTS UP (TESTS) ALL SEGMENTS OF DISPLAY
V	VOLTAGE	(LOOKS LIKE V ON DISPLAY)
1	DATE	DAY / MONTH / YEAR
2	TIME	24 HOUR (MILITARY) TIME
4	CUMULATIVE (TOTAL) KWH DELIVERED	TOTAL ENERGY INTO CUSTOMER FACILITY
5	ON PEAK KWH DELIVERED	ENERGY INTO CUSTOMER FACILITY - ON PEAK
6	ON PEAK DEMAND (KW)	MAX DEMAND BY CUSTOMER FACILITY - ON PEAK
7	OFF PEAK KWH DELIVERED	ENERGY INTO CUSTOMER FACILITY - OFF PEAK
8	OFF PEAK DEMAND (KW)	MAX DEMAND BY CUSTOMER FACILITY - OFF PEAK
9	SHOULDER KWH DELIVERED	ENERGY INTO CUSTOMER FACILITY - SHOULDER
10	SHOULDER DEMAND (KW)	MAX DEMAND BY CUSTOMER FACILITY - SHOULDER
11	PROGRAM ID	71 FOR COMMERCIAL NET ENERGY CUSTOMERS
(NO NUMBER)	CLS or OPN	DISCONNECT SWITCH POSITION (CLOSED or OPEN) - IF APPLICABLE
24	CUMULATIVE (TOTAL) KWH RECEIVED	TOTAL ENERGY OUT OF CUSTOMER FACILITY
25	ON PEAK KWH RECEIVED	ENERGY OUT OF CUSTOMER FACILITY - ON PEAK
27	OFF PEAK KWH RECEIVED	ENERGY OUT OF CUSTOMER FACILITY - OFF PEAK
29	SHOULDER KWH RECEIVED	ENERGY OUT OF CUSTOMER FACILITY - SHOULDER
(NO NUMBER)	GSS	NUMBER OF CONCENTRATORS HEARD (RADIO RECEIVERS - MEANS NOTHING TO CUSTOMERS)



# NET METERING

SINGLE METER SOLUTION  
April 2013 to Present

## CLASS 1 RENEWABLE GENERATION

Primarily Solar & Wind

METER REQUIREMENTS

METERING METHODS

READING THE METERS & DISPLAY

TESTING YOUR GENERATOR / METERING

---

## METERING REQUIREMENTS

Prior to April 2013, UI required the use of two separate meters for net metering. One meter recorded only the energy delivered from UI to the customer. The other meter recorded only the energy received from the customer into UI. On many residential services, UI installed an adapter that allowed two meters to be installed on one meter provision. On most commercial services, a second meter provision was necessary.

In April 2013, UI began using one bi-directional meter to record both the delivered and received energy in all but a few exceptional cases.

Although only one meter is used, a net-energy customer's bill will still show two meters, one for energy from UI and one for energy to UI. The second meter shown on the bill will have the same meter number as the first, but the number will be preceded with a "V". The V stands for "Virtual". The "Virtual" meter is simply a way for UI to show the second set of readings (the OUT or Received reads) on the customer's bill. Both the IN and OUT reads will be visible on the meter's display, and a table of these display values is provided in this document.

---

## METERING METHODS

Since net energy metering is now accomplished with a single meter, there is no need for customers to make (and pay for) any modifications to their existing metering provision(s) as long as the provision was compliant with UI's Guidebook of Requirements for Electric Service to begin with.

The few exceptional cases in which UI would require two meters are basically those in which specialized metering options (such as pulse outputs) were also requested. In those cases, UI may not be able to provide a meter which can record bi-directional energy flow and also provide the specialized optional functions.

If two meters are required for a specific customer, UI's meter engineers will provide the details to the customer's electrician.

The meters used for net-energy customers will all be electronic meters. They will look the same as any other meter used by UI except for a label that reads "NET".

The displays will show all the same values that UI's other meters show, but will also show additional values for the OUT readings.



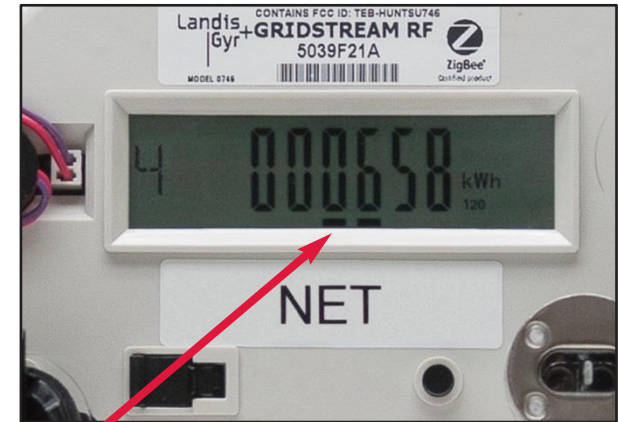
---

## READING THE METERS

For net metering, fully electronic meters will be used. The digital displays on these meters have multiple channels that can be read by the customer. (Net metered customers are currently provided with Focus meters.) These meters are pre-programmed to record energy flow in one direction on one set of channels and energy flow in the opposite direction on another set of channels.

On the display samples shown below, the number on the left is the display channel number. The number in the center is the value for that channel. The characters to the right are the units of measure (i.e. kWh for energy and kW for demand). A table of the channel numbers and what they mean is provided in this document.

The two small bars below the numbers in the center of the display are the disk simulator. The disk simulator bars will move in sequence in the direction that a disk would rotate on a mechanical meter. The speed at which the bars sequence is proportional to the amount of energy flow.



### DISK SIMULATOR

Proper rotation for energy delivered to customer:

When energy is flowing from UI into the customer premises, the disk simulator bars will sequence from the left to the right of the display.

Proper rotation for energy received from customer:

When energy is flowing into UI from the customer premises, the disk simulator bars will sequence from the right to the left of the display.

**Note:** For "Transformer Rated" meters, the kW and kWh values on the display must be multiplied by a value that is written (in marker) on the meter nameplate. The display on a transformer rated meter increments at a much slower pace than that of an equivalent self-contained meter. That is because the display on a self-contained meter will increment once for every kWh of energy while the display of a transformer rated meter increments once for every one kWh times the multiplier (typically 40 or 80 on residential meters).