

Renewable Meter Arrangements



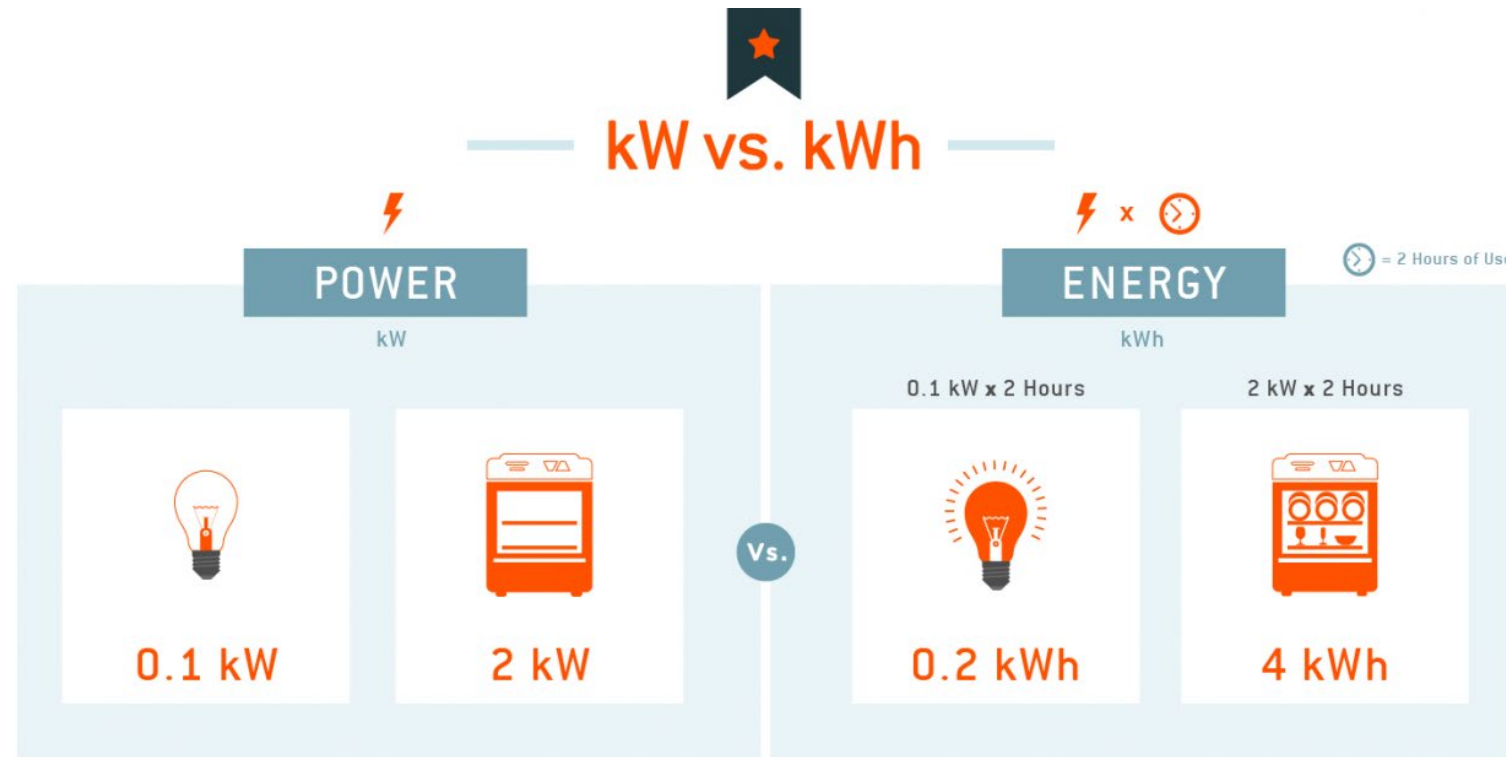
Billing Examples

Meter Arrangements

- **Bilateral Metering**
 - A.K.A: “Buy All, Sell All”
 - Electric Credit Rider (RR-3)
- **Residential Time of Use with Demand Net Metering**
 - A.K.A: “Net Metering”
 - Electric Rate Schedule (ER-2)
- **Residential Renewal Excess Energy Buy Back Bi-Directional Metering**
 - A.K.A: “Net Billing”
 - Electric Rate Schedule (ER-3)

Energy (kWh) vs Demand (kW)

[What is a kilowatt hour? Understanding home energy use – YouTube](#)



Buy All, Sell All

Bilateral Metering for Solar Energy Facilities Credit Rider

Residential Service with Bilateral Metering

“Buy All, Sell All”

Residential Electric Rate (ER-1) + (RR-3)

RESIDENTIAL SERVICE (ER-1) – Consumption Meter

MONTHLY RATE

Effective July 1, 2019

- A. Base Facilities Charge per billing month.....\$21.00
- B. Energy Charge: (All kWh)..... 9.414 ¢ per kWh

BILATERAL METERING Credit Rider (RR-3) – Solar Meter

MONTHLY CHARGE/CREDIT

Effective April 1, 2022

- A. Base Facilities Charge:
 - Residential:.....\$12.39
 - Small General Service:.....\$13.86
 - Medium General Service:.....\$33.00
- B. Energy Credit (All kWh).....6.401 ¢ per kWh

Note:

Eligible Customers:

- Residential Services
- Small General Services
- Medium General Services

Two Uni-directional Meters

- Consumption Meter – Billed under (ER-1)
- Solar/Production Meter – Credited under (RR-3)

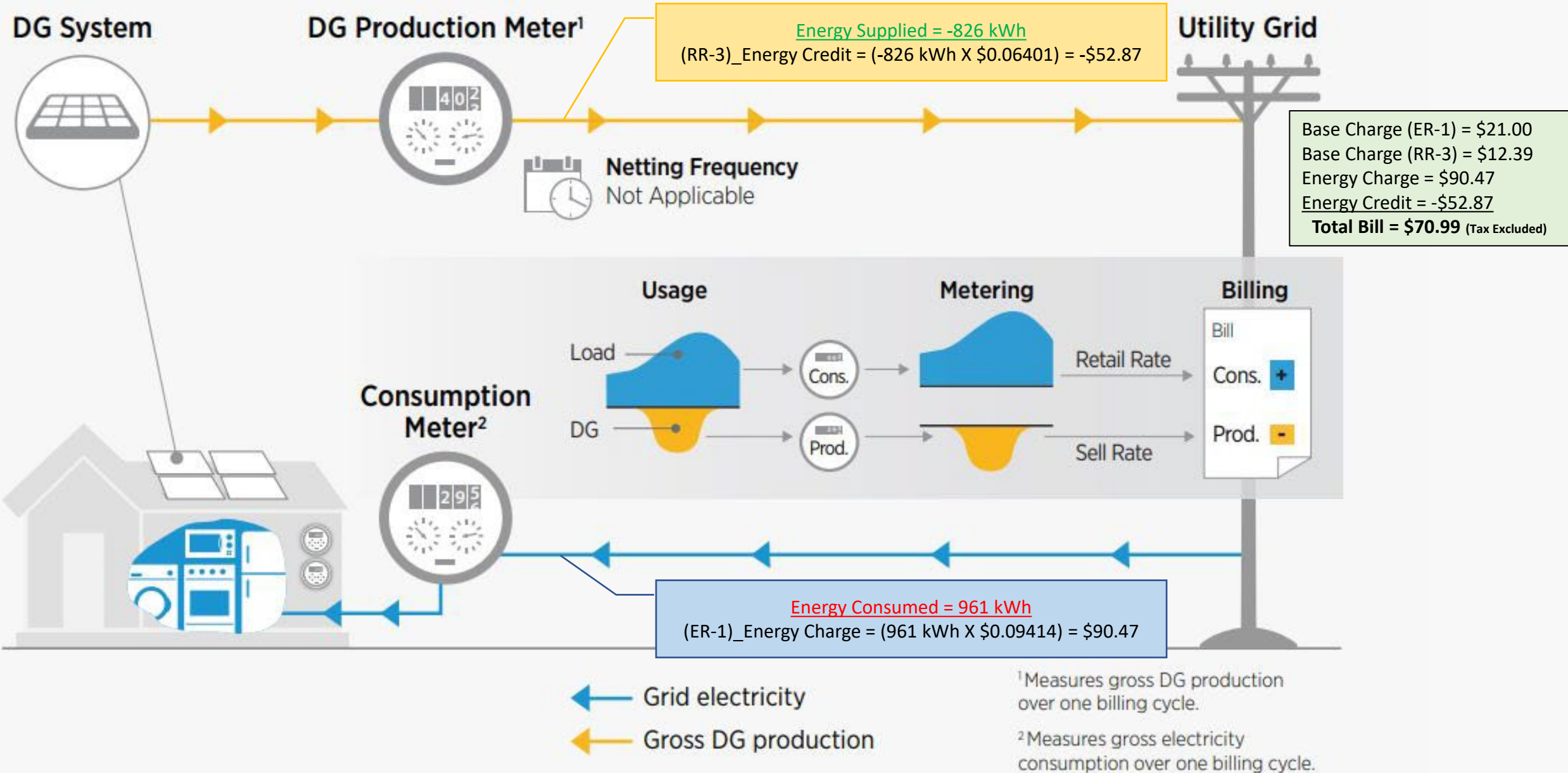
Energy Credit:

- Is measured in Kilowatt-Hours (kWh)
- Applied to the bill as a Monetary Value (\$)
- Is limited to the amount of energy (kWh) the customer consumes from the Utility within the billing period
- No accumulation is allowed to be applied towards future bills.

Battery Storage:

- Is NOT Allowed

BUY ALL, SELL ALL



Example of Bill – Bilateral Metering

Service Type	Meter No.	Usage Period	Current Read	Previous Read	Multiplier	Usage	Uom
Electric	EPV134546	09/12/23 - 10/12/23	12296	11470	1	826	KWH
	EPV134546	09/12/23 - 10/12/23	5.99	5.65	1	5.99	KW
	E130066	09/12/23 - 10/12/23	44544	43583	1	961	KWH

Total Solar Energy Supplied to Utility
(Energy Supplied - Credit)

Max Solar Power Generated
(Power Supplied)

Total Energy Used from Utility
(Energy Consumed - Billed)

Important Messages

To avoid a 1% late fee, please pay the current charges by due date.



My Electric Bill Details

Base Facilities Charge	\$12.39
PV Energy Credit 826 kWh	-\$52.87
Base Facilities Charge	\$21.00
Energy Charge 961 kWh	\$90.47
NC Electric Sales Tax	\$8.67
Total Electric Charges	\$79.66

PV Production Meter (SP2) = EPV134546
Service Consumption Meter (AA1) = E130066

Bilateral Metering – Buy All, Sell All

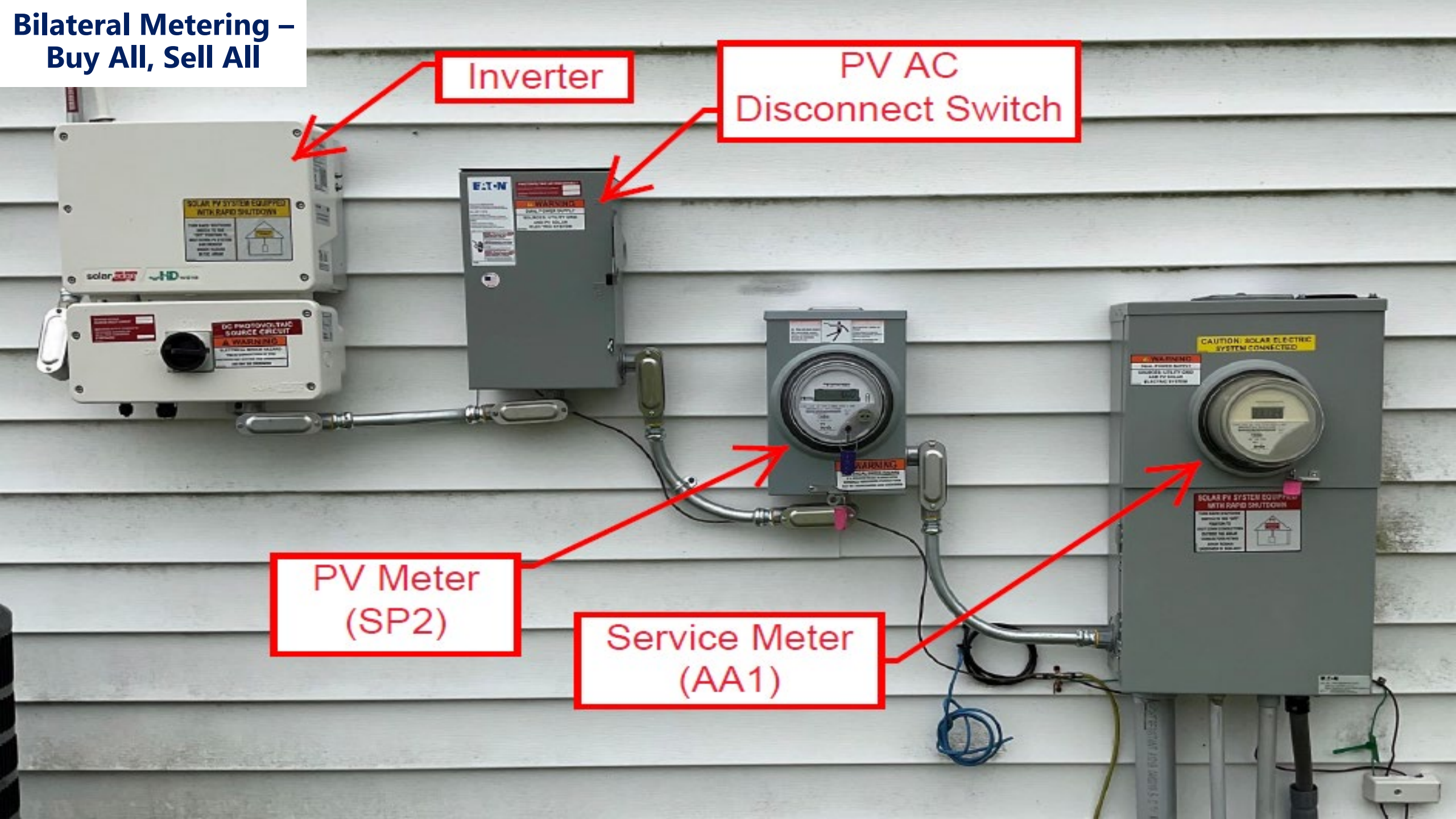
Inverter

PV AC Disconnect Switch



PV Meter (SP2)

Service Meter (AA1)



Net Metering

Time of Use (TOU) with Demand Net Metering

Time of Use (TOU) w/ Demand Net Meter “Net Metering” Residential Electric Rate (ER-2)

MONTHLY RATE

Effective Date July 1, 2023

- A. Base Facilities Charge:\$ 25.00
- B. Demand Charge (All kW):.....\$ 3.75 per kW
- C. Energy Charge
 - All On-Peak kWh per billing month..... 19.919 ¢ per kWh
 - All Off-Peak kWh per billing month 3.926 ¢ per kWh

DETERMINATION OF ON-PEAK AND OFF-PEAK HOURS

On-Peak hours are Monday through Friday, excluding holidays as defined below:

<u>Calendar Days</u>	<u>On-Peak Hours</u>
October 15 – April 14	7:00 am to 10:00 am; 5:00 pm to 9:00 pm
April 15 – October 14	2:00 pm - 8:00 pm

Off-Peak hours are Saturday and Sunday and holidays as defined below:

Holidays are defined as weekdays celebrating New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day plus Friday, and Christmas Day.

Note:

Eligible Customers:

- Residential Services

One Bi-directional Meter that records:

- Net Flow of On Peak Energy (kWh)
- Net Flow of Off Peak Energy (kWh)
- Peak Demand (kW)

Net Flow of Energy:

= Energy Consumed – Excess Solar Energy Supplied

Peak Demand:

- Is the maximum kW registered during any 15-minute interval within the current billing month

Accumulated Energy Credit:

- Is measured in kilowatt-Hours
- Applied to future Bills as (kWh) only towards its corresponding Peak Hour due to difference in rate
- Can accumulate up to 12 months to be used to reduce future energy usages
 - On Peak Credit/On Peak Usage
 - Off Peak Credit/Off Peak Usage
- Resets June 30th - No compensation paid
- Listed under Important Messages on Bill

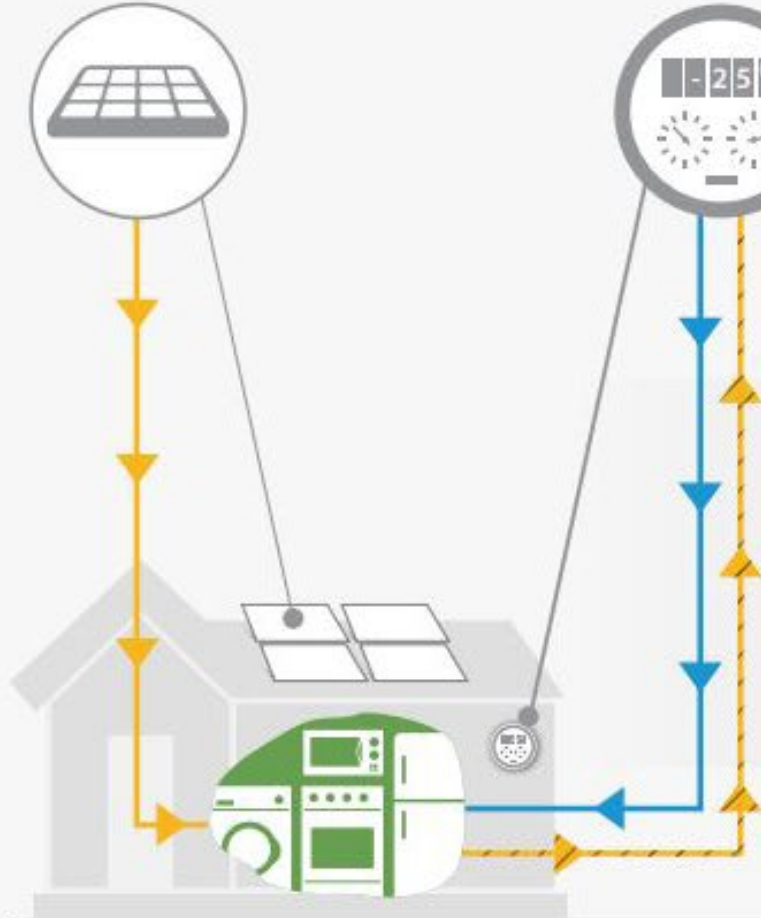
Battery Storage:

- Is Allowed (No Limit on Size)

Net Metering
Electric Rate (ER-2)

NET ENERGY METERING

DG System



Bidirectional Meter¹

Netting Frequency
1 Billing Cycle

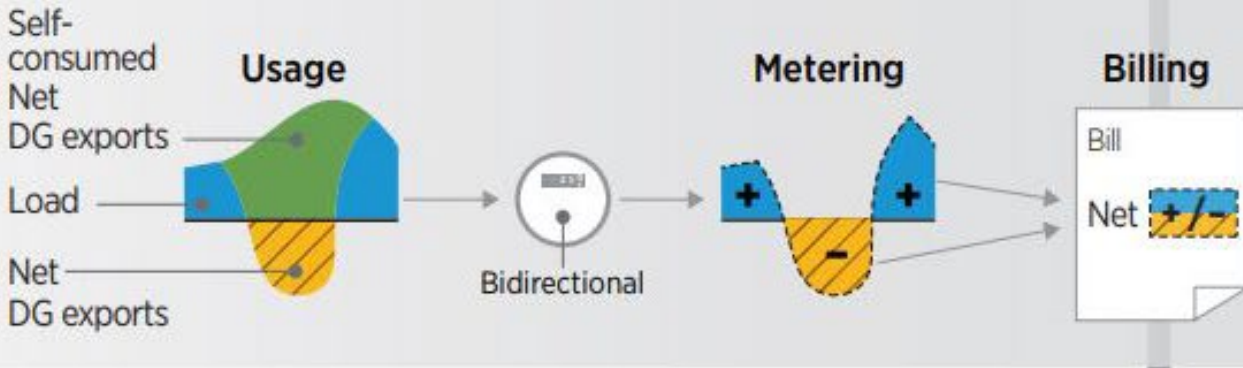
Energy Consumed
On Peak Hours = 500 kWh
Off Peak Hours = 500 kWh
Peak Demand = 6.66 kW

Excess Energy Supplied
On Peak Hours = 354 kWh
Off Peak Hours = 548 kWh

Utility Grid

NOTE: Utility Bill will only show Net Energy Values

Base Charge = \$25
Net On Peak Charge = \$29.08
Net Off Peak Charge = \$0
Peak Demand Charge = \$24.98
Total Bill = \$79.06 (Tax Excluded)
On Peak Energy Credit = 0 kWh
Off Peak Energy Credit = 48 kWh



Net Energy = Energy Consumed – Excess Energy Supplied

Net On Peak Energy = 500 – 354 = 146 kWh Billed, 0 kWh Credit
(146 kWh X \$0.19919 = \$29.08)

Net Off Peak Energy = 500 – 548 = 0 kWh Billed, -48 kWh Credit
(0 kWh X \$0.03926 = \$0)

Peak Demand = (6.66 kW * \$3.75 = \$24.98)

- Grid electricity
- Gross DG production
- Net DG exports

¹ Measures net consumption over one billing cycle.

Example of Bill – Net Metering

Service Type	Meter No.	Usage Period	Current Read	Previous Read	Multiplier	Usage	Uom
Electric	E136469	09/22/23 - 10/19/23	120	99974	1	146	KWH
	E136469	09/22/23 - 10/19/23	7035	7035	1	0	KWH
	E136469	09/22/23 - 10/19/23	6.66	0	1	6.66	KW

Net On Peak Energy
(+) Consumed / (0) Accumulated Energy Credit

Net Off Peak Energy
(+) Consumed / (0) Accumulated Energy Credit

Peak Demand
Max Demand/Power consumed from Utility

Important Messages

To avoid a 1% late fee, please pay the current charges by due date.

Year to Date Accumulated Energy Credit
 Credit On Peak 0 Kwh
 Energy Excess Credit Off Peak 48 Kwh

Accumulated Energy Credit
 On Peak Credits will offset future On Peak Charges
 Off Peak Credits will offset future Off Peak Charges
 Reset June 30th each year. No compensation paid



My Electric Bill Details

Base Facilities Charge	\$25.00
TOU On Peak kWh Charge 146 kWh	\$29.08
TOU Peak Demand Charge 6.66 kW	\$24.98
NC Electric Sales Tax	\$5.53
Total Electric Charges	\$84.59

Service Consumption Meter (SP2N) = E136469

Net On/Off Peak Energy = Energy Consumed – Excess Energy Supplied
 The only time a customer will accumulate an energy credit is when “Excess Energy Supplied” is greater than “Energy Consumed”.

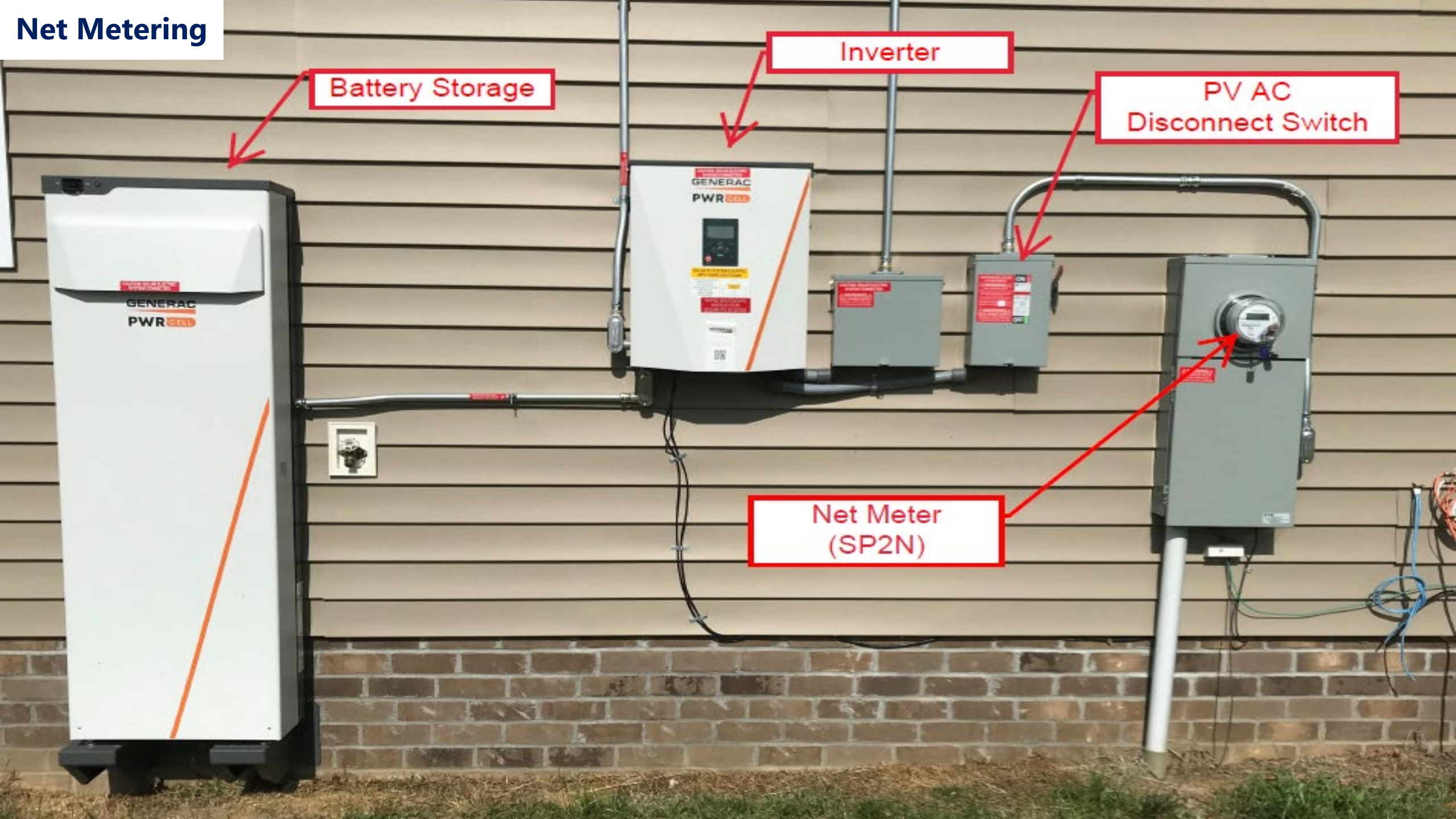
Net Metering

Battery Storage

Inverter

PV AC Disconnect Switch

Net Meter (SP2N)



Net Billing

**Residential Renewable Excess Energy Buy Back
Bi-Directional Metering**

Residential Renewable Excess Energy Buy Back Meter “Net Billing” Residential Electric Rate (ER-3)

MONTHLY RATE

- A. Base Facilities Charge: \$ 21.00
- B. Energy Charge: (All kWh Used by Customer) 9.414 ¢ per kWh
- C. Excess Energy Credit: (All kWh Supplied to Commission) 5.902 ¢ per kWh

Excess Energy:

Excess Energy is excess solar energy supplied to the Commission from the customer owned generating facility measured in kilowatt hours (kWh).

The Customer shall receive credit for all Excess Energy supplied to the Commission from the Customer in kilowatt hours (kWh) up to the level of Energy used by the Customer from the Commission in kilowatt hours (kWh) during the current billing period. In no event shall the Customer receive credit for Excess Energy (kWh) supplied to the Commission in excess of Energy (kWh) supplied to the Customer within the current billing period, nor will it be applied to future billing periods. There shall be no compensation paid to the Customer for Excess Energy supplied in excess of Energy used.

Note:

Eligible Customers:

- Residential Services

One Bi-directional Meter that records:

- Total Energy consumed from the Utility (kWh)
- Total Excess Renewable Energy Supplied to the Utility (kWh)
- Peak Demand (kW)

Peak Demand:

- Is the maximum kW registered during any 15-minute interval within the current billing month

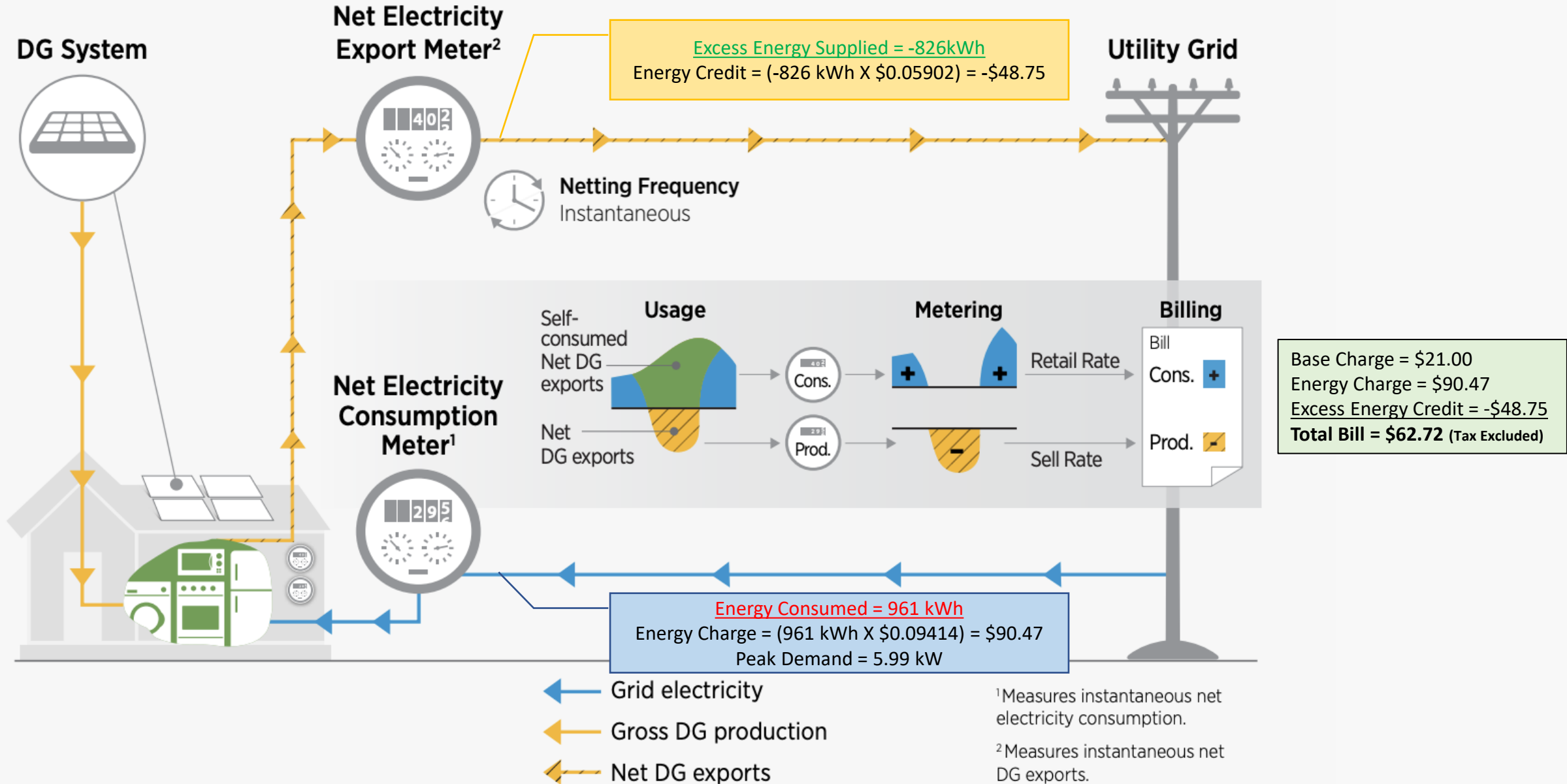
Excess Energy Credit:

- Is measured in Kilowatt-Hours (kWh)
- Applied to the bill as a Monetary Value (\$)
- Is limited to the amount of energy (kWh) the customer consumes from the Utility within the billing period
- No accumulation is allowed to be applied towards future bills.

Battery Storage:

- Is Allowed (No Limit on Size)

NET BILLING



Example of Bill – Net Billing

Service Type	Meter No.	Usage Period	Current Read	Previous Read	Multiplier	Usage	Uom
Electric	E130066	09/12/23 - 10/12/23	12296	11470	1	826	KWH
	E130066	09/12/23 - 10/12/23	5.99	5.65	1	5.99	KW
	E130066	09/12/23 - 10/12/23	44544	43583	1	961	KWH

Total Solar Energy Supplied to Utility
(Energy Supplied - Credit)

Peak Demand
(Max Demand/Power consumed from Utility)

Total Energy Used from Utility
(Energy Consumed - Billed)

Important Messages

To avoid a 1% late fee, please pay the current charges by due date.



My Electric Bill Details

Base Facilities Charge	\$21.00
PV Energy Credit 826 kWh	-\$48.75
Energy Charge 961 kWh	\$90.47
NC Electric Sales Tax	\$7.66
Total Electric Charges	\$70.38

Service Consumption Meter (SP2BD) = E130066

Net Billing



Battery Storage



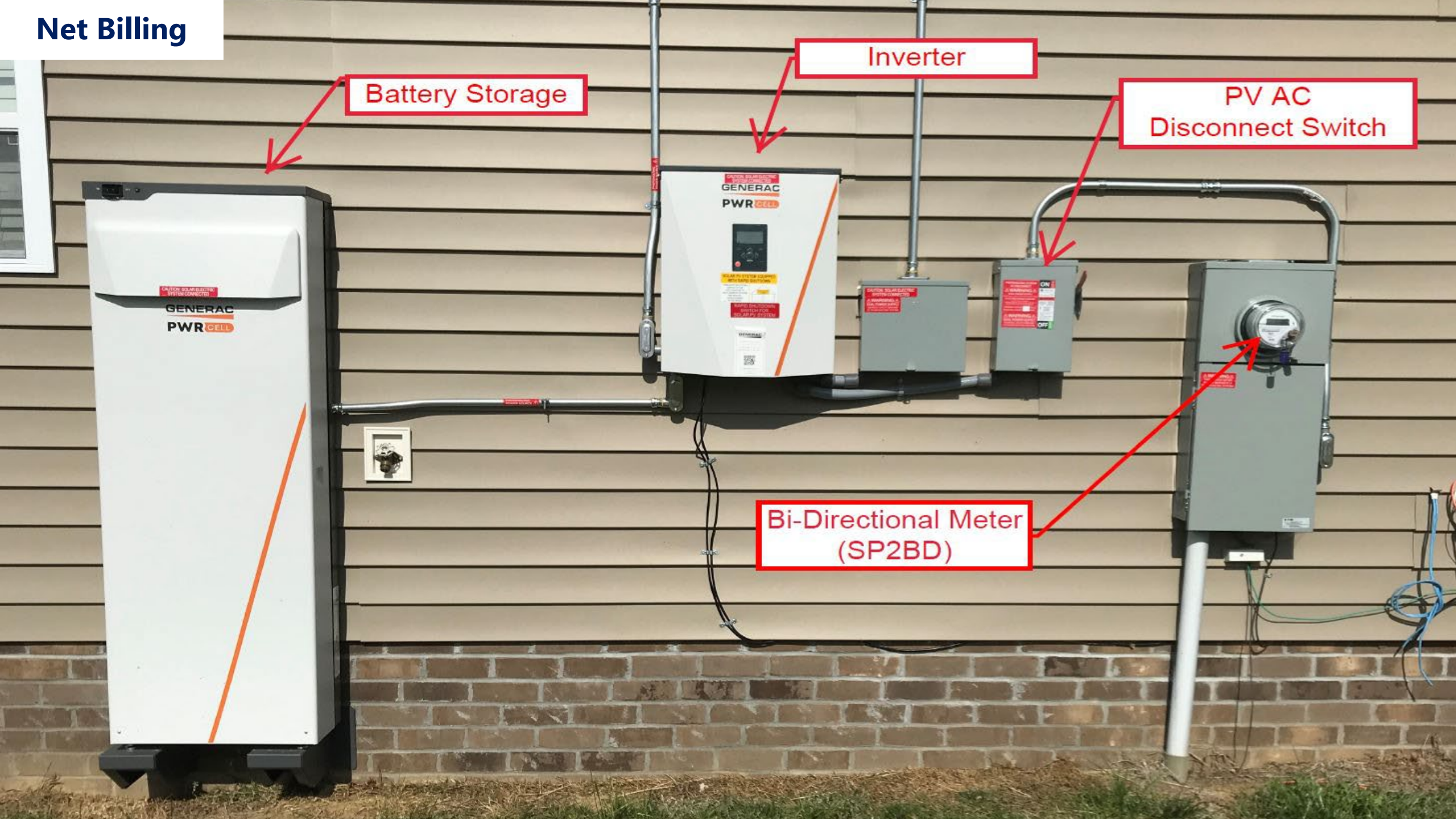
Inverter



PV AC Disconnect Switch



Bi-Directional Meter (SP2BD)



Net Metering vs Net Billing

Main Difference is how the excess solar energy credits are applied.

Net Metering (ER-2):

- Excess Solar Energy Credits supplied to the Utility are subtracted from the Energy Consumed from the Utility at a 1:1 rate resulting a Net Energy to be billed during On/Off Peak Hours.
- Remaining On/Off Peak Energy Credits may accumulate during the year to be applied towards future bills in the form of Kilowatt-Hours (kWh).
- Accumulated Energy Credits reset to zero on June 30th. No compensation is paid for remaining credits.

Net Billing (ER-3):

- Excess Solar Energy Credits supplied to the Utility are applied to the bill as a monetary value at a Buyback Rate to help offset the total Energy Consumed from the Utility at a Retail Rate.
- The amount of Excess Solar Energy Credits (kWh) are limited to the amount of total Energy Consumed (kWh) from the Utility within the billing period.
- Excess Energy Credits are not allowed to accumulate is to be applied towards future bills.



GUC supplied energy to customer

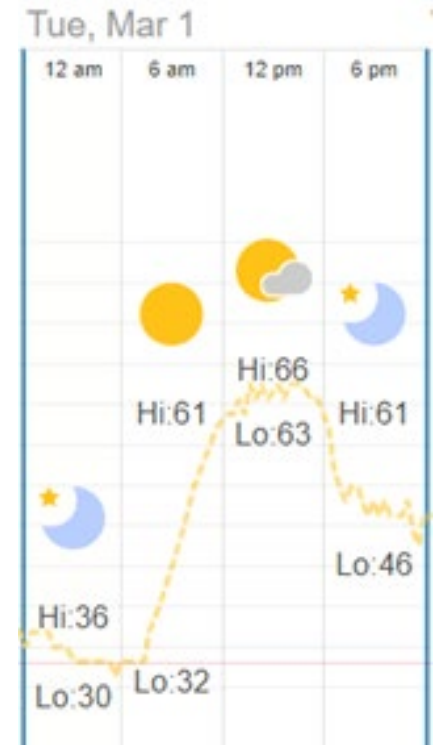
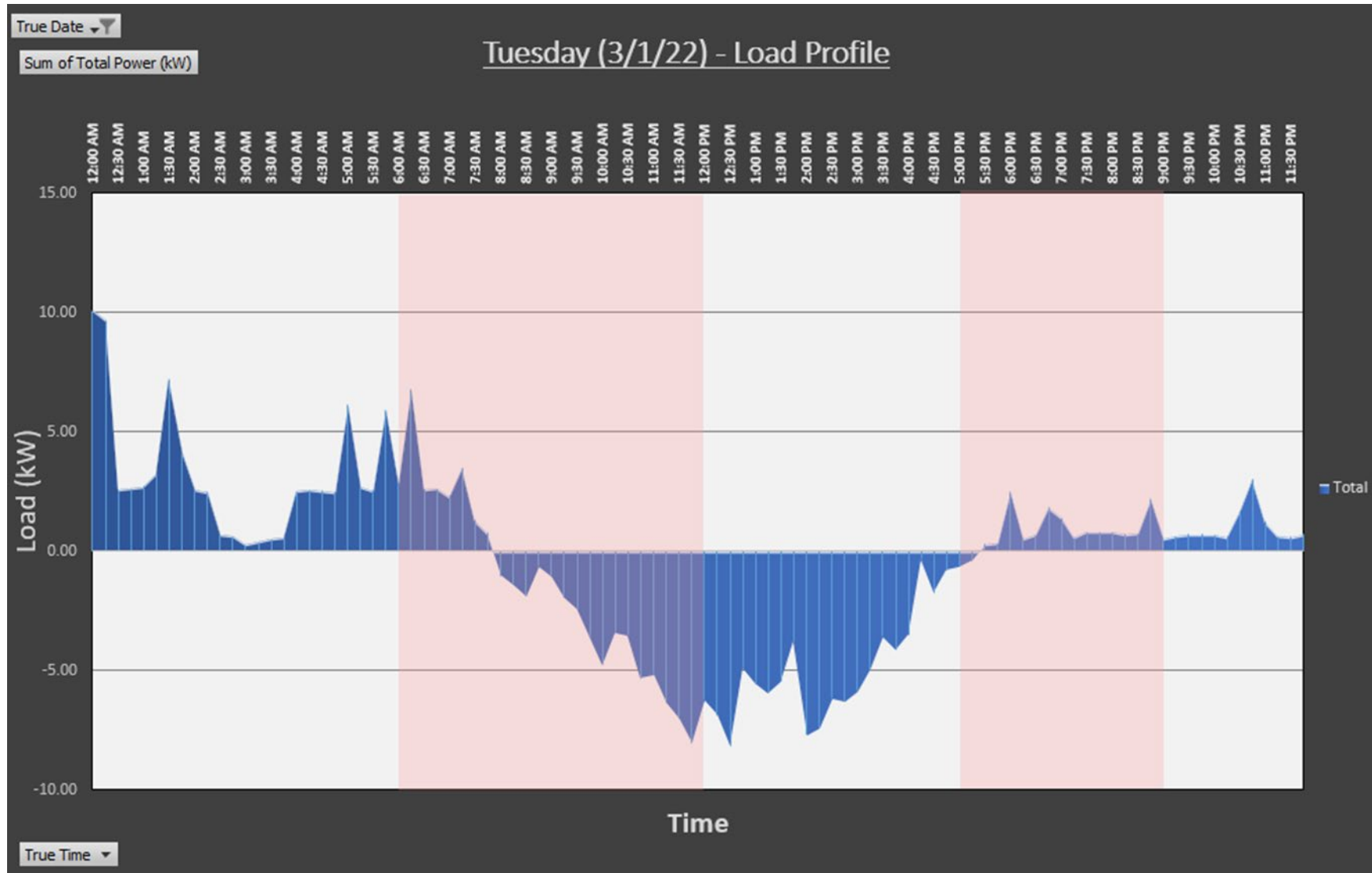


Customer supplied energy to GUC

Net GUC (customer) supplied energy

	kWh	Net Metering (ER-2)	Net Billing (ER-3)
GUC supplied energy to customer	1,100		Retail ¢/kWh
Customer supplied energy to GUC	(450)		Buyback Rate ¢/kWh
Net GUC (customer) supplied energy	650	Retail ¢/kWh	

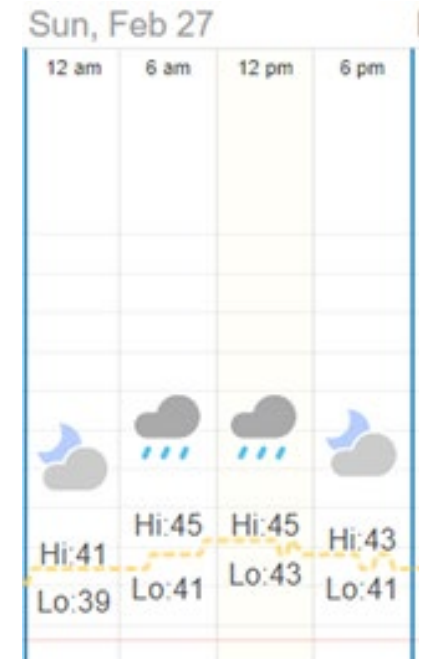
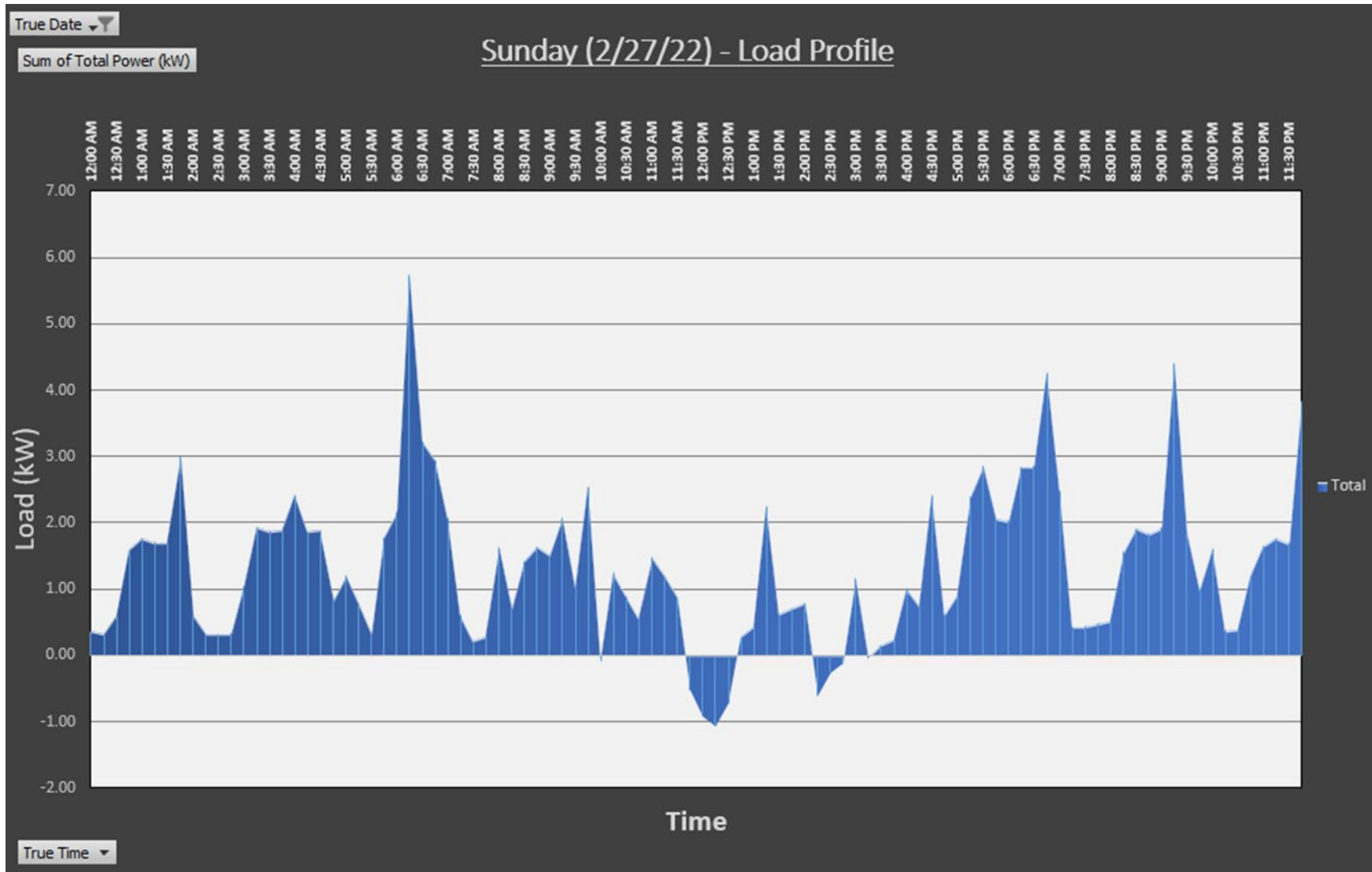
Ex: Solar Customer Daily Usage



Daily Load:

- Peak Demand: 10.09 kW @ 12 AM
- Net Energy Usage [Total = -7.89 kWh]
 - On Peak = -5.42 kWh
 - Off Peak = -2.47 kWh

Ex: Solar Customer Daily Usage



Daily Load:

- **Peak Demand:** 5.73 kW @ 6:15 AM
- **Net Energy Usage** [Total = +31.24 kWh]
 - **On Peak** = 0 kWh **b/c Weekend**
 - **Off Peak** = +31.24 kWh