

# Understanding Your Electric Bill with Solar Net Metering

Now that Your Solar Panels are Installed



**CONCORD** MUNICIPAL  
LIGHT PLANT

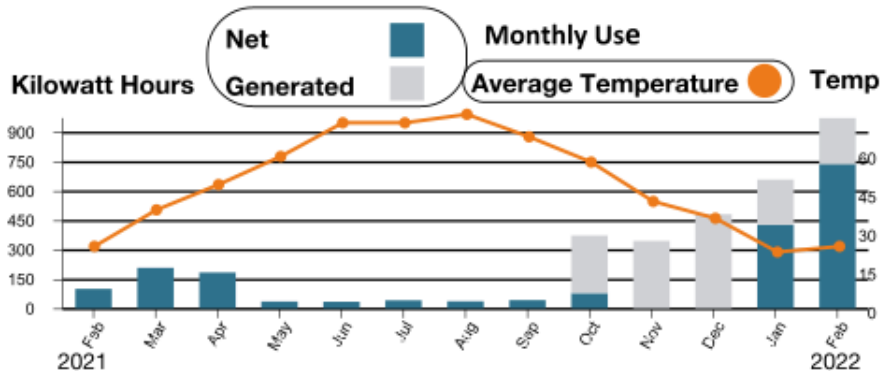
ELECTRIC | BROADBAND | ENERGY MANAGEMENT

(Example #1)

# How Solar Reduces Your Billed Electric Usage (kWh)

Electric

Meter #	Location #	Services		Days	Readings		Meter Multiplier	kWh Usage
		From	To		Previous	Present		
10566410	698	01/02/2022	02/02/2022	31	1653	2629	1.0	976 <b>A</b>
10566410	698	01/02/2022	02/02/2022	31	1356	1590	1.0	234 <b>B</b>
10566410	698	01/02/2022	02/02/2022	31	297	1039	1.0	742 <b>C</b>



Service Charge		\$16.80
Net Metering Distribution		\$7.00
Underground Surcharge		\$2.25
Capacity And Transmission	657 kWh @ 0.03308	\$21.73
	85 kWh @ 0.04302	\$3.66
Distribution Charge	742 kWh @ 0.05158	\$38.27
Energy Charge	742 kWh @ 0.07665	\$56.87
Power Cost Adjustment	742 kWh @ 0.009	\$6.68
NYPA Power Cost Adjustment	75 kWh @ -0.015	-\$1.13
	667 kWh @ 0.00	\$0.00
<b>Electric Service Subtotal</b>		<b>\$152.13</b>

**Line A:** Amount of electricity CMLP delivered to the customer that month (Ex. #1: 976 kWh)

**Line B:** Amount of excess electricity generated by solar panels, not used by the customer at that time, and therefore sent back out the grid to CMLP\* (Ex. #1: 234 kWh)

**Line C:** Net usage billed = line A minus line B (Ex. #1: 976 kWh – 234 kWh = 742 kWh)

\*NOTE: CMLP’s net meter doesn’t interface with the solar array meter your solar installer provided; we don’t know how much solar generation was produced and can’t measure the total amount of electricity used. See pg 7 below to learn how to calculate how much electricity you’ve generated and used.

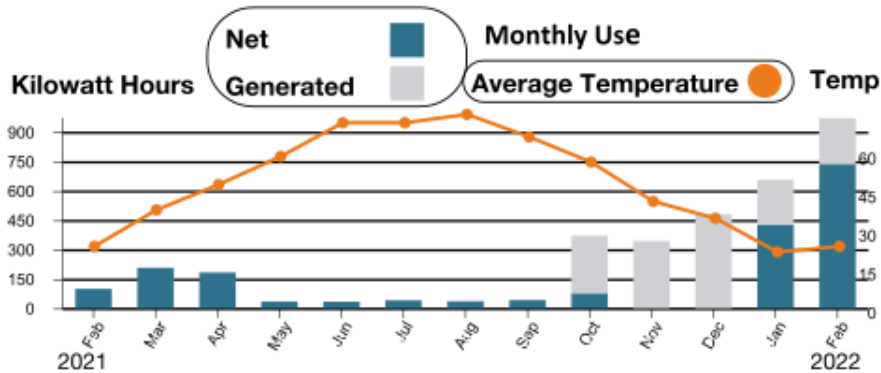
(Example #1)

# Solar Net Meter Charge

## Electric

Description: Solar

Meter #	Location #	Services		Days	Readings		Meter Multiplier	kWh Usage
		From	To		Previous	Present		
10566410	698	01/02/2022	02/02/2022	31	1653	2629	1.0	976
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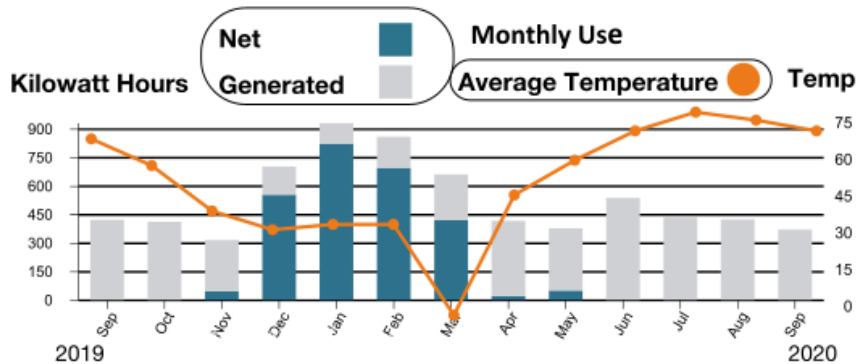
All solar net metering customers are assessed a monthly **Net Metering Distribution Charge** based on the size of their solar PV system.

See slide 6 below for more information.

(Example #2)

# Solar Net Meter Credit

Meter #	Location #	Services		Days	Readings		Meter Multiplier	kWh Usage
		From	To		Previous	Present		
60615283	4312	08/03/2020	09/02/2020	30	48733	48879	1.0	146
60615283	4312	08/03/2020	09/02/2020	30	34102	34475	1.0	373
60615283	4312	08/03/2020	09/02/2020	30	283	56	1.0	-227



Service Charge	\$12.00
Net Metering Distribution	\$3.60
EV Miles Credit BEV	-\$10.00
Underground Surcharge	\$0.14
CARES Surcharge	\$0.05
<b>Excess Generation</b>	<b>-\$6.06</b>
<b>Electric Service Subtotal</b>	<b>-\$0.27</b>

(See slides 3 & 6 for more information about the Net Metering Distribution charge)

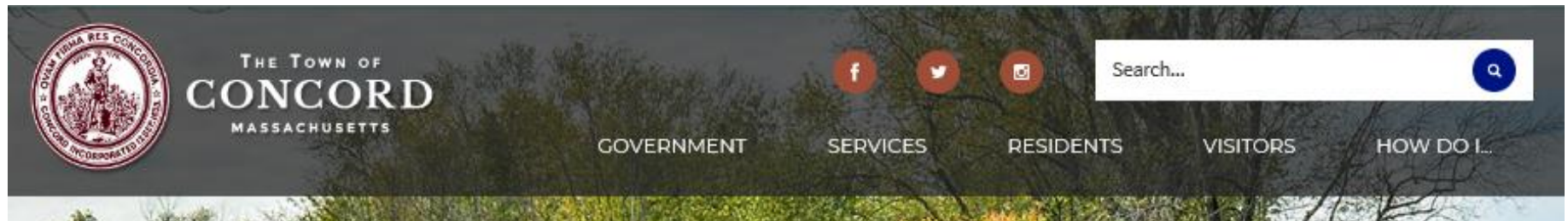
**Net Metering Credit:** This home generated & sold back to the grid more electricity than was needed from CMLP. The resulting negative usage, shown on the bill as 'Excess Generation' is their Solar Net Metering Credit.

The value per kWh of this excess energy varies as described in the Residential Net Metering with Banking rate. You can find the value of each month's credit here:

[www.concordma.gov/536/Solar-Net-Metering-Credit](http://www.concordma.gov/536/Solar-Net-Metering-Credit).

# Historic Net Meter Rates

[www.concordma.gov](http://www.concordma.gov)



Home > Government > Departments > Municipal Light Plant > Electric Service > Rates > Solar Net Metering Credit



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## Solar Net Metering Credit

The net metering credit is based on the average Real Time Independent System Operator-New England (ISO-NE) price for all hours in the month prior to the current billing month between 9 a.m. - 4 p.m. The credit amount for energy generated that exceeds a customer's purchases from CMLP is a variable amount as described in the Residential Net Metering with Banking rate.

ISO-NE oversees the constant availability of electricity in New England by ensuring the day-to-day operation of New England's bulk power generation and transmission system, ensuring the fair administration of the region's wholesale electricity markets, and managing regional planning.

### Solar Photovoltaic Rebate Programs

CMLP offers rebates for solar photovoltaic installations. Read more for information about our [Solar Photovoltaic Rebate Program](#) for your home or business.

Net credit per Kilowatt Hour	Month Kilowatt Hours sold to CMLP	Month customer's bill rendered
\$0.07651	January 2021	February 2021



# Net Metering Distribution Charges

All solar net meter customers are assessed a monthly **Net Metering Distribution Charge** based on the installed generating capacity of their solar PV array

Find more information about CMLP's net metering rider rate and the net metering distribution charges at:

[www.concordma.gov/DocumentCenter/Home/View/1205](http://www.concordma.gov/DocumentCenter/Home/View/1205)

		Installed Generation Capacity:		Charge / mo.
		Equal or Greater Than	and Less Than	
<b>Example #2</b>	2 kW (AC)	4 kW (AC)	\$3.80 / mo.	
<b>Example #1</b>	4 kW (AC)	7 kW (AC)	\$7.00 / mo.	
	7 kW (AC)	10 kW (AC)	\$10.80 / mo.	
	10 kW (AC)	13 kW (AC)	\$14.60 / mo.	
	13 kW (AC)	16 kW (AC)	\$18.40 / mo.	
	16 kW (AC)	19 kW (AC)	\$22.20 / mo.	
	19 kW (AC)	22 kW (AC)	\$26.10 / mo.	
	22 kW (AC)	25 kW (AC)	\$29.90 / mo.	
	25 kW (AC)	28 kW (AC)	\$33.70 / mo.	
	28 kW (AC)	31 kW (AC)	\$37.50 / mo.	
	31 kW (AC)	34 kW (AC)	\$41.30 / mo.	
	34 kW (AC)	37 kW (AC)	\$44.70 / mo.	
	37 kW (AC)	40 kW (AC)	\$48.90 / mo.	
	40 kW (AC)	46 kW (AC)	\$56.60 / mo.	
	46 kW (AC)	58 kW (AC)	\$71.80 / mo.	
	58 kW (AC)	82 kW (AC)	\$102.30 / mo.	
	82 kW (AC)	130 kW (AC)	\$163.40 / mo.	
	130 kW (AC)	167 kW (AC)	\$210.40 / mo.	

# How Much Electricity Did You Use?

To figure out how much electricity you used in a month (E):

1. Take the electricity delivered from CMLP (A on the sample bill)
2. Subtract the electricity sold to CMLP (B on the sample bill, gross)  
= Amount CMLP charges you each month (C)
3. Add your monthly solar output reading from your solar array meter  
or inverter web portal (the gross reading from your array) (D)  
(which CMLP doesn't know, so that is not reflected on the bill)



## Example #1

$$\begin{aligned} & 976 \text{ kWh CMLP} \rightarrow \text{Home (A)} \\ & - \underline{234 \text{ kWh Home} \rightarrow \text{CMLP (B)}} \\ & = 742 \text{ kWh (C)} \\ & + \underline{\text{Gross from Solar Meter (D)}} \\ & = \text{Total kWh Used} = \text{Home Load (E)} \end{aligned}$$

## Example #2

$$\begin{aligned} & 146 \text{ kWh CMLP} \rightarrow \text{Home (A)} \\ & - \underline{373 \text{ kWh Home} \rightarrow \text{CMLP (B)}} \\ & = -227 \text{ kWh (C)} \\ & + \underline{\text{Gross from Solar Meter (D)}} \\ & = \text{Total kWh Used} = \text{Home Load (E)} \end{aligned}$$

# CMLP's Basic Residential Service Rate

To learn more about the Residential Service rate for Concord residents:

[www.concordma.gov/DocumentCenter/Home/View/1199](http://www.concordma.gov/DocumentCenter/Home/View/1199)

1. Both the Energy (7.7¢ / kWh) and Distribution (5.2¢ / kWh) charges are calculated based on kWh used and are not affected by CMLP's tiered rate structure.
2. Capacity and transmission charges are broken down into three tiers depending on monthly electricity usage:

- a) First 657 kWh: 3.3¢ / kWh
- b) Next 178 kWh: 4.3¢ / kWh
- c) Any use above 835 kWh: 6.2¢ / kWh

## Example #1

- a) 657 kWh
- b) 85 kWh
- c) 0 kWh

## Example #2

- a) 0 kWh
- b) 0 kWh
- c) 0 kWh

Note: b) & c) would have been 178 & 141 kWh without the solar panels

3. Combined energy, distribution, and capacity and transmission charges broken down into three tiers depending on electricity usage are:

- a) First 657 kWh:  $(7.7¢ + 5.2¢ + 3.3¢) / \text{kWh} = 16.1¢ / \text{kWh}$
- b) Next 178 kWh:  $(7.7¢ + 5.2¢ + 4.3¢) / \text{kWh} = 17.1¢ / \text{kWh}$
- c) Any use above 835 kWh:  $(7.7¢ + 5.2¢ + 6.2¢) / \text{kWh} = 19.0¢ / \text{kWh}$



# Install Solar in Concord

[www.concordma.gov](http://www.concordma.gov)



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[EPA video explaining RECs](#)

[How to Read Your Solar Net Metered Bill](#)

[Solar Net Metering Credit - Historic Rates](#)

[CMLP's Current Service Rates](#)

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## Solar Panels

### Solar Rebates

CMLP offers two rebate programs providing thousands of dollars towards the cost of installing solar panels at your home or business. You'll want to take advantage of both programs, if your system meets eligibility requirements.

**MLP Solar Program Rebate:** Offers a one-time incentive of \$1,200 per kW(DC) of solar photovoltaic (PV) capacity installed, capped at 50% of system cost or \$30,000, whichever is less. This incentive is funded through matching contributions of \$600 per kW(DC) from CMLP and from the Massachusetts Department of Energy Resources (DOER). Residential and commercial arrays of 25 kW(DC) or less installed by customers in good standing are eligible. Note the bolded deadlines in Steps 4 and 8 that **rebate applicants must meet** in order to receive this incentive.

# Questions?

For more information about CMLP's solar program or other questions, please contact:

Pamela Cady  
Energy Specialist  
CMLP  
1175 Elm Street  
Concord, MA 01742  
(978) 318-3149 [pcady@concordma.gov](mailto:pcady@concordma.gov)



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# Steps to Installing Solar on Your Property

Property owner finds a solar installer to work with  
[www.concordma.gov/1795/LeaseBuyChoose-an-Installer](http://www.concordma.gov/1795/LeaseBuyChoose-an-Installer)



Installer gathers all needed paperwork  
[www.concordma.gov/2029/Solar-Panels](http://www.concordma.gov/2029/Solar-Panels)



All solar paperwork bundled & sent to CMLP  
[pcady@concordma.gov](mailto:pcady@concordma.gov)  
[solar@ene.org](mailto:solar@ene.org)



CMLP Engineer gives Approval to Install \*

Occasionally a site visit is necessary



CMLP Director gives Approval to Install



CMLP notifies installer & property owner of Approval to Install via email



Panels Installed on property



Town Building Dept. Electrical Inspector visits site for wiring approval



CMLP Electrician installs send & receive meter

Meter installed next to solar meter

Brief power outage usually required

Property owner not needed on site



Engineer gives Approval to Operate\*\*

on site visit not usually needed

CMLP notifies installer & property owner of Approval to Operate via email



Property owner begins generating their own power!



Property owner receives one-time CMLP rebate in approximately 4-6 weeks

Customers in good standing may choose check  
All customers may choose bill credit

### \* Approval to Install:

Please be aware that all PV systems should not be installed on the property until CMLP has sent the final approval to install documents via email. CMLP requires this step because:

- It financially protects the homeowner so they don't have to pay extra money to change, for instance, the location of the meter if it is not within the required distance to the utility disconnect
- CMLP will confirm that nearby cables and transformers on our electric grid will not be overloaded by the addition of the PV system
- CMLP will assure that our electric grid lines will remain balanced with the increase in electricity they will carry during sunlight hours

### \*\* Approval to Operate:

Please be aware that all PV systems should not be switched on until CMLP has sent the final approval to operate documents via email. CMLP requires this step because:

- It is a potential operational safety hazard for our line crews working on our electric grid if the PV system begins operating before we are aware of it
- If a PV system begins operating before we install the net meter, any power generated by the system with the old meter in place is automatically calculated as energy CMLP sent to the customer rather than vice-versa (because the old meter can only run in one direction). This leads to billing problems.