

# Net Metering Program Guide

**Consumers Energy**

*Count on Us®*

# FOR POTENTIAL APPLICANTS

**A**T CONSUMERS ENERGY, we are committed to a sustainable energy future for Michigan. Thank you for your interest in our Net Metering program.

## WHAT IS NET METERING?

The Consumers Energy Net Metering program is a convenient way for our customers to benefit from the energy generated at a home or business while staying connected to a reliable source of energy from the electric grid.

The Net Metering program is for our customers who generate their own renewable energy. Through enrollment in the program, participating customers receive credit on their monthly energy bill for any excess energy they generate and send back to Consumers Energy's electric grid.

If you choose to participate in the Net Metering program, you'll still be connected to the grid even though you generate electricity through your own renewable energy source. The energy you generate will decrease the amount of electricity you purchase from us. In addition, we will credit you for the extra energy you produce and provide back to the company's electric grid.

Net Metering is available to Consumers Energy electric customers possessing eligible renewable energy systems with a total capacity of 150 kilowatts (kW) or less or methane digester systems with a total capacity of 550 kW or less.

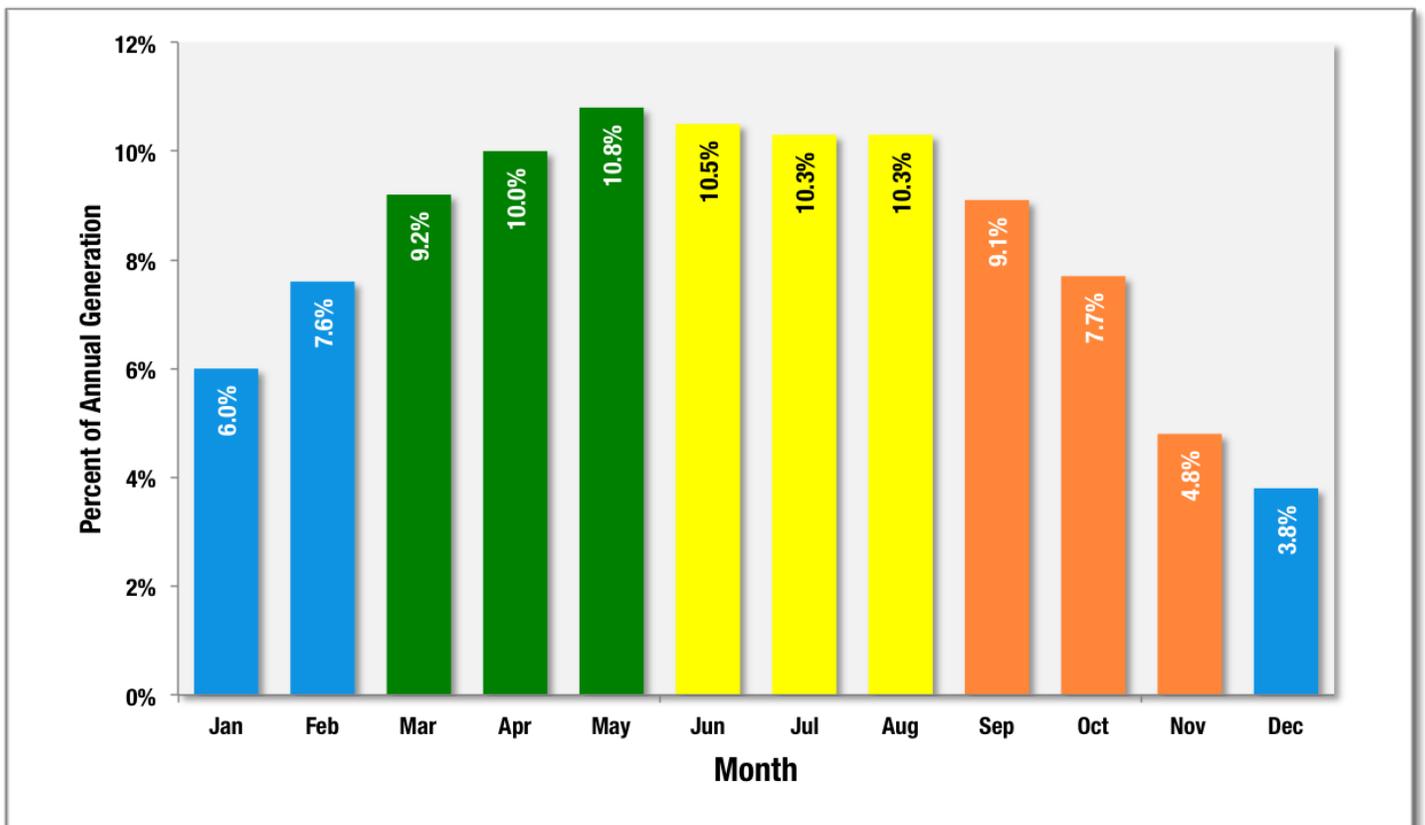


## HOW DOES NET METERING WORK?

Your home or business uses the energy you produce as a Net Metering customer first to meet your current energy needs. If you produce more electricity than you need over the course of the day, the excess generation is sent through a utility meter and out onto the grid. If on the other hand, you need more power than is currently being produced by your eligible generator, the extra electricity is supplied to you by Consumers Energy.

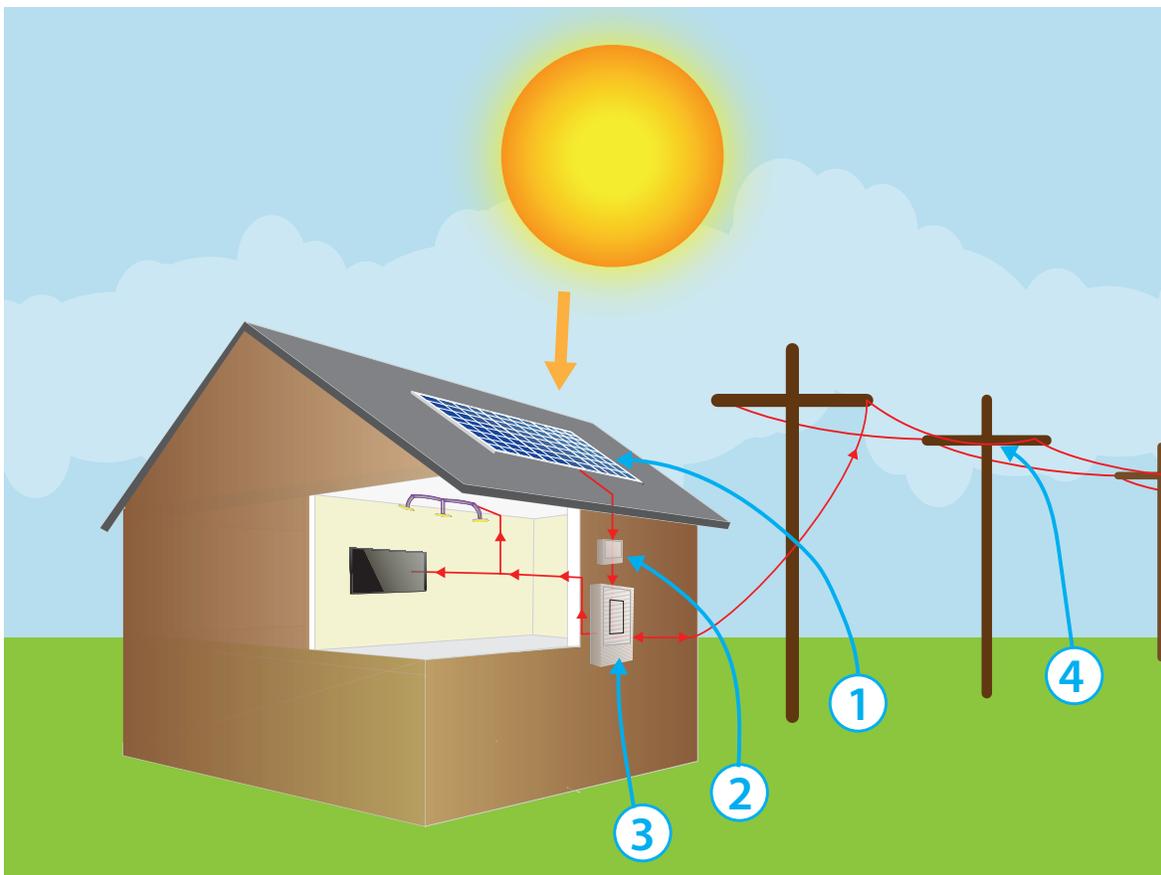
In a given period, if generation is greater than overall energy use, the difference is credited to you in the form of an electricity bill credit. This credit remains on your account and can be used to offset electricity costs. The credit rolls forward to subsequent months.

## MONTHLY DISTRIBUTION OF SOLAR GENERATION



The above chart depicts an estimated percentage of a solar generator's annual output by month. Excess generation credits built up in the summer can be used to offset net consumption in later months.

## WHAT DOES NET METERING LOOK LIKE?



- 1 SOLAR PHOTOVOLTAIC PANELS:** Produce DC (direct current) electricity when photons of light from the sun strike the panel's surface
- 2 INVERTER:** Converts the electricity produced in your solar panels from DC to AC (alternating current), the type of current flow used both on the grid and in your home
- 3 BIDIRECTIONAL METER:** Measures the inflow and outflow of electricity to and from your home; electricity produced by your system first is used to power your home, and then is sent onto the electric grid in times of surplus
- 4 ELECTRIC GRID:** Provides electricity to your home in times of under-generation and carries out excess electricity in times of over-generation

## IS NET METERING RIGHT FOR ME?

Net Metering enables you to take control of your energy needs by installing and generating your own electricity and therefore reducing your monthly electric bill.

As an industry leader in sustainability, Consumers Energy offers many different renewable energy options. These programs give you flexible ways to participate in improving Michigan’s renewable energy portfolio.

## Renewable Energy Programs at Consumers Energy

	Net Metering	Energy Only	Solar Gardens	Green Generation™		
						
Who Owns the System?	Customer	Customer	Consumers Energy	Third Party		
How Does It Work?	Customers offset use and receive credit for excess generation	Buy-all electricity used, sell-all electricity generated or offset use and receive credit for excess generation.	Subscription to portion of utility-owned solar array	Premium on bill to receive electricity from renewable sources		
Cost to Customer	Equipment and Installation Costs + application fees	Equipment and Installation Costs + application fees	Flexible financing options for each 1/2 kW of capacity subscribed	<table border="1"> <tr> <td><b>GREEN TEAM</b> \$0.01 extra for each kWh used</td> <td><b>GREEN BLOCKS</b> \$1.50 per kWh subscribed</td> </tr> </table>	<b>GREEN TEAM</b> \$0.01 extra for each kWh used	<b>GREEN BLOCKS</b> \$1.50 per kWh subscribed
<b>GREEN TEAM</b> \$0.01 extra for each kWh used	<b>GREEN BLOCKS</b> \$1.50 per kWh subscribed					
Price Paid out	<b>Category 1:</b> Retail Rate <b>Category 2/3:</b> Retail Rate minus Distribution Costs	Wholesale Market Price	Market Based Bill Credit	None		
Customer Owned Renewable Energy Credits?	✓	✓				



# FREQUENTLY ASKED QUESTIONS

## Where can I apply?

Begin your application process online at **ConsumersEnergy.PowerClerk.com**. To start a new application, first create an account and log in. Then click on the New Interconnection Application in the top left corner of the page.

Customers without internet access can contact us directly at 517-788-2119.

## Why shouldn't I go off the grid completely?

Going “off the grid” with a renewable generator would be difficult, especially in Michigan. Many renewable energy technologies are intermittent power sources, meaning when the sun's not shining, or the wind's not blowing, no energy is being generated.

The Net Metering program was designed to give you the opportunity to adopt new renewable energy technology and become more self-reliant on your energy needs - without sacrificing reliability.

## How much electricity as a Net Metering customer am I able to produce?

That depends on your electricity needs. The Net Metering program is intended only to offset your annual electricity use, and therefore your renewable energy system's annual generation cannot exceed your annual electricity use. You can find your annual use by adding up the previous 12 months of electricity use from your electric bill.

# FOR CURRENT APPLICANTS

**M**ANY GRANT PROGRAMS are available at all times. For more information, visit the Database of State Incentives for Renewables & Efficiency at [dsireusa.org](http://dsireusa.org).

## CUSTOMER CHECKLIST



**You and/or your installer are responsible for coordinating the design, installation, operation and maintenance of any Net Metering system you install. In addition, customers interested in the Net Metering program should be prepared to:**

1. Complete an initial interconnection application with contact information, generation type, system size and annual energy use. Mail the \$100 application fee.
2. Construct the generating system in accordance with approved specifications submitted in the application.
3. Perform a commissioning test on the newly installed system to ensure the generator can safely be connected to the grid. A sample Commissioning Test form is shown on the next page.
4. Sign the Generator Interconnection Operating Agreement (GIOA) after confirming all information on the form is accurate. This document will be emailed to you via DocuSign for electronic signature. Keep in mind, if you plan on making any changes to your system in the future, you must notify Consumers Energy beforehand.

**When these steps are completed, you will be authorized to turn on your system and an active participant in Consumers Energy's Net Metering program!**

## SAFETY FIRST

Consumers Energy requires a GIOA to be in place for every generator attached to our distribution system. The GIOA acknowledges that you have installed the agreed to system and that you will operate it accordingly. The agreement informs Consumers Energy that you have a system that can back feed onto our electric grid.

# COMMISSIONING TEST FORM



## COMMISSIONING TEST REPORT For Inverter Based Category 1 & 2

MAIL TO: Interconnection Coordinator P14-205, Consumers Energy, 1945 W Parnall Rd, Jackson MI 49201-8643

OR E-MAIL TO: customer\_generation@cmsenergy.com.

CUSTOMER INFORMATION (As shown on energy bill)	
Customer Name	
Generator Site Address (Street Address)	Generator Site Address (City, State, Zip Code)
Electric Service Meter Number	
One-Line Diagram	
<pre> graph LR     SA[Solar Array] --- I[Inverter]     I --- DS[Disconnect Switch]     DS --- SP[Service Panel]     SP --- UM((Utility Meter M))     UM --&gt; TU[To Utility]           </pre>	
Note: A legible hand-drawn one-line diagram is acceptable.	
Device Opened To Break Parallel Between Generator And Utility System <b>AC Disconnect next to meter</b>	
Method Used To Identify That The System Is Generating <b>Voltmeter</b>	
Date of Commissioning Test <b>April 24, 2013</b>	Time of Parallel Operation <b>2:15 p.m.</b>
Time Duration Before The Generator Ceases To Generate ( in cycles / seconds), After Breaking The Parallel Operation (i.e. opening disconnect switch or other device) <u><b>less than 2 seconds</b></u>	
Device Used to Measure Time Duration <b>Counting 1001, 1002</b>	
Test Performed By (Signature)	Test Performed By (Print)
Consumers Energy Witness	

# FOR CURRENT ENROLLEES

## UNDERSTANDING MY BILL

- Your bill will look identical to the one you receive now. Mailed or emailed separately, you will also receive a spreadsheet with your monthly net usage and any excess generation you have sent back to the grid. When applicable, your Net Excess Credit from participation in the Net Metering program will appear on your regular electric bill and be applied towards your electric consumption charges. This will be noted in the Account Summary section on the back of your bill.

Here's what your spreadsheet will look like when you generate more energy than you consume in a given month:

<b>Name:</b>		John Smith							
<b>Contract Account:</b>		123456789012							
<b>Installation:</b>		9876543210							
06/11/2015 - 07/10/2015 July Bill Month									
<b>Net Metering Billing Determinants</b>				<b>Rate Flow</b>		<b>CATEGORY 1 - UNDER 20 KW</b>			
Rate RS - Rate Category 1000									
<b>Rate Code</b>	<b>Meter Readings</b>	Last Month's Index	Current Index	<b>Generation Flow</b>					
Metered Inflow supplied by Consumers Energy		55407	55665	[ A ]	253				
Metered Outflow generated by the Customer		16952	17352	[ B ]	400				
Net Excess Generation for current billing month				[ C ]	142				
Net Customer Consumption for current billing month				[ D ]	0				
Net Excess Generation Credit Carried From Prior Month				[ E ]					<b>\$0.00</b> Previous Balance
<b>ELECTRIC POWER SUPPLY CREDIT</b>				<b>Excess Generation</b>					
KWH CREDIT - ENERGY (First 600 kWh per month)				Use first 600 kWh of [ C ]	142	(0.083791)			(\$11.90)
KWH CREDIT - ENERGY (in excess of 600 kWh per month)				Use kWh in excess of 600 of [ C ]	0	(0.004560)			\$0.00
POWER SUPPLY COST RECOVERY FACTOR CREDIT				Use [ C ]	0				\$0.00
<b>ELECTRIC DISTRIBUTION CREDIT</b>									
ELECTRIC DISTRIBUTION CREDIT				Use [ C ]	142	(0.043794)			(\$6.22)
Total Net Excess Generation for Current Month									(\$18.12)
Net Excess Generation Credit Carried from Prior Month				Use [ E ]					\$0.00
<b>Net Metering Rebate-Via Carried over Net Excess Generation Credits</b>									
KWH CREDIT - ENERGY (First 600 kWh per month)				Use [ D ]	0	0.083791			\$0.00
KWH CREDIT - ENERGY (in excess of 600 kWh per month)				Use [ D ]	0				\$0.00
POWER SUPPLY COST RECOVERY FACTOR CREDIT				Use [ D ]	0	0.004560			\$0.00
ELECTRIC DISTRIBUTION CREDIT				Use [ D ]	0	0.043794			\$0.00
Total Net Metering Credit									\$0.00
<b>Net Excess Generation Credit Balance to carry forward to next bill</b>								<b>(\$18.12)</b> New Balance	

**And here's what your bill will look like when you consume more electricity than you generate in a given month:**

<b>Name:</b>		John Smith						
<b>Contract Account:</b>		123456789012						
<b>Installation:</b>		9876543210						
05/12/2015 - 06/10/2015 June Bill Month								
<b>Net Metering Billing Determinants</b>			<b>Rate Flow</b>			<b>CATEGORY 1 - UNDER 20 KW</b>		
Rate RS - Rate Category 1000								
<b>Rate Code</b>	<b>Meter Readings</b>	Last Month's Index	Current Index	<b>Generation Flow</b>				
Metered Inflow supplied by Consumers Energy		54980	55407	[A]	kWh	42		
Metered Outflow generated by the Customer		16574	16952	[B]		3		
Net Excess Generation for current billing month				[C]		0		
Net Customer Consumption for current billing month				[D]		49		
Net Excess Generation Credit Carried From Prior Month				[E]				\$0.00 Previous Balance
<b>ELECTRIC POWER SUPPLY CREDIT</b>				<b>Excess Generation</b>				
KWH CREDIT - ENERGY (First 600 kWh per month)				Use first 600 kWh of [C]		0	(0.083791)	\$0.00
KWH CREDIT - ENERGY (in excess of 600 kWh per month)				Use kWh in excess of 600 of [C]		0	(0.004560)	\$0.00
POWER SUPPLY COST RECOVERY FACTOR CREDIT				Use [C]		0		\$0.00
<b>ELECTRIC DISTRIBUTION CREDIT</b>								
ELECTRIC DISTRIBUTION CREDIT				Use [C]		0	(0.043794)	\$0.00
Total Net Excess Generation for Current Month								\$0.00
Net Excess Generation Credit Carried from Prior Month				Use [E]				\$0.00
<b>Net Metering Rebate-Via Carried over Net Excess Generation Credits</b>								
KWH CREDIT - ENERGY (First 600 kWh per month)				Use [D]		0	0.083791	\$0.00
KWH CREDIT - ENERGY (in excess of 600 kWh per month)				Use [D]		0		\$0.00
POWER SUPPLY COST RECOVERY FACTOR CREDIT				Use [D]		0	0.004560	\$0.00
ELECTRIC DISTRIBUTION CREDIT				Use [D]		0	0.043794	\$0.00
Total Net Metering Credit								\$0.00
Remaining Net Excess Generation Credit								\$0.00 New Balance

If you have questions regarding your Net Metering Billing or how to understand your spreadsheet, please contact the Special Ledger department at 1-800-541-2341.

# COMMON TERMS AND DEFINITIONS

- **GIOA – GENERATOR INTERCONNECTION OPERATING AGREEMENT:** A contractual agreement between Consumers Energy and its customer, designating the size of a generator being connected to the grid and the generator's location.
- **RENEWABLE ENERGY RESOURCE** – A resource that replenishes naturally over a human, not a geological, time frame and is ultimately derived from solar, wind or water power.
- **ELIGIBLE GENERATOR TYPES** – A renewable energy system (solar, wind, hydro, geothermal, biomass) under 150 kW of capacity or a methane digester under 550 kW of capacity. Eligible electric generators cannot have a capacity exceeding a customer's yearly electric use.
- **CATEGORIES** – Net metering systems are classified into three categories:
  - ▶ Category 1: Eligible electric generators with aggregate generation under 20 kW. Category 1 systems are typically owned by residential or small-commercial customers. Excess generation for customers in this category is credited at full retail rate.
  - ▶ Category 2: Eligible electric generators with aggregate generation under 150 kW. Category 2 systems are typically owned by commercial or industrial customers. Excess generation for customers in this category is credited at the modified rate.
  - ▶ Category 3: Methane Digesters with aggregate generation under 550 kW. Category 3 systems are almost exclusively owned by agricultural customers. Excess generation for customers in this category is credited at the modified rate.
- **NET EXCESS GENERATION CREDIT** – The line item located on a customer's monthly bill, indicating the aggregate credit built up for use in future billing cycles due to excess generation.
- **BIDIRECTIONAL METER** – A meter installed by Consumers Energy for customers entering the Net Metering program. Consumers Energy can measure a customer's net electricity use by manually netting the two registers found on a bidirectional meter, one which measures the energy provided by Consumers Energy, and one which measures the excess generation that is brought onto the grid.
- **KILOWATT** – The instantaneous rate at which energy is being generated or used.
- **KILOWATT-HOUR** – The result of producing power over a sustained period of time. If a one-kilowatt generator produced electricity at full power for one hour, one kilowatt-hour would be produced.
- **NAMEPLATE CAPACITY** – The fully-rated output of an electric generation system during ideal conditions. Since the source of power for renewable energy is intermittent, most renewable systems operate at nowhere near nameplate capacity, so the system's capacity factor must be considered. For solar, a 6 kW system can offset the use for an average home.
- **CAPACITY FACTOR** – The ratio of actual output over a period of time to potential output if it were possible for it to operate at full nameplate capacity continuously over the same period of time. For example, Consumers Energy assumes a capacity factor of 12.74 percent when determining the eligibility of solar systems for Net Metering.
- **RENEWABLE ENERGY CREDITS (RECS)** – Tradeable, non-tangible energy commodities in the United States representing proof that 1 megawatt-hour (MWh) of electricity was generated from an eligible renewable energy resource (renewable electricity). Used by Consumers Energy to meet regulated portfolio standards.
- **FULL RETAIL RATE** – The power supply and distribution components of the cost of electric generation. Does NOT include surcharges, the system access charge, or other charges on a by-meter basis. Rate credited to Category 1 customers.
- **MODIFIED NET METERING** – In Modified Net Metering, customers are credited for supplying energy back onto the grid, and not the distribution costs that are often included in the costs of supplying electricity. The Modified Net Metering rate is the rate credited to Category 2 and Category 3 customers in the Net Metering program.
- **COMMISSIONING TEST** – A test completed by the Net Metering customer after installation and before signing the GIOA that proves the system is up to code, performs to specifications and is ready to be safely connected to the grid.