

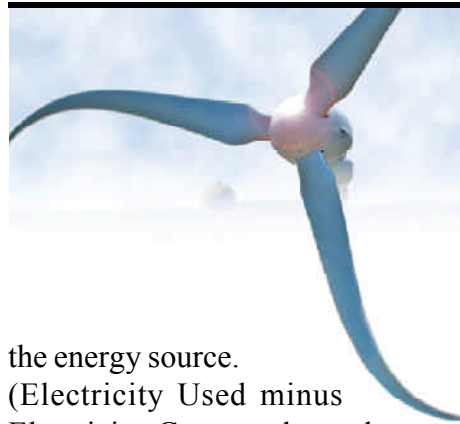
Net Metering

Getting the full value of the electricity you generate.



What is Net Metering?

Net metering is a provision that allows customers to install small, renewable energy systems, such as fuel cells, wind turbine generators, or solar photovoltaic panels, to reduce their electric bills. Under net metering, excess electricity produced by the renewable energy system can flow into the utility grid, spinning the existing electric meter backwards, effectively banking the excess electricity production for future credit. “Net” in this context refers to the energy consumed by the customer **minus** the energy that was created by



the energy source.

(Electricity Used minus Electricity Generated equals Monthly Bill or Credit)

Net metering measures the difference between the electricity you buy from your utility and the electricity you generate using your own acceptable energy system. Your meter keeps track of this difference as you generate electricity and take electricity from the electricity transmission grid. When you generate more than you use, electricity flows through the utility to the grid. Normally your electric meter spins for-

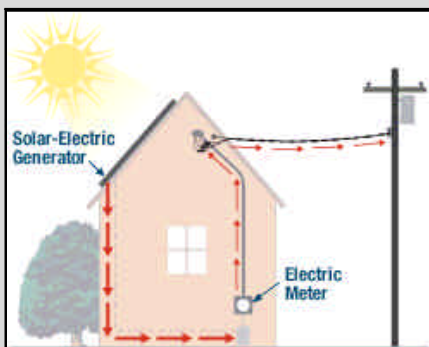


ward as it measures how many kilowatt-hours of electricity you buy, and is read by your utility once a month.

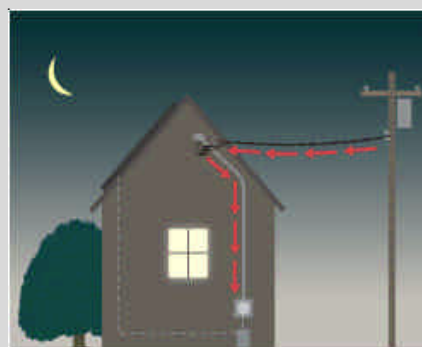
A Net Meter allows you to use the electricity you generate first, reducing what you would normally buy from your utility. If you generate more electricity than you use, the excess goes through your electric meter and into the grid. Your meter shows the net amount, measured as the difference between the electricity you generate to the utility and the electricity you purchase from your utility.

Example of Net Metering

Using a Residential Photovoltaic (Solar) System



The electric meter spins backwards as it registers excess energy flowing from a solar-electric generator into the utility electric grid.



The electric meter spins forward as it registers the normal flow of energy from the utility electric grid into the customer's home.

Generator Technology

When considering the purchase of energy generation equipment, ask the dealer what agencies have tested, qualified, or otherwise approved a unit. Underwriters Laboratories (UL) organizations and the Institute of Electrical and Electronic Engineers (IEEE) certify the safety and performance of renewable products. Every net metered generation project must meet specific safety and engineering standards to qualify for interconnection to the utility grid.

Wind

The wind turns a propeller connected to a generator in this renewable technology system. A direct current wind

Net Metering, *continued*

generator will provide its energy to direct current loads. Alternating current for refrigerators, computers, TVs, etc. would have to be provided by an inverter. If the wind turbine generator produces 60-cycle alternating current, the generator could serve AC loads directly.

Wind energy experts recommend placing a 65- to 120-foot-high residential wind turbine on one or more acres of land, depending upon the height of the turbine. Smaller lots generally are not acceptable for safety and noise reasons. The economics of a 5- to 10-kw residential system are sensitive to the average wind speed and the cost of electricity. As a general rule, an economical system requires an average wind speed of at least 8 MPH at the turbine's location.

Solar Photovoltaic Panels

Solar photovoltaic panels (PV) generate direct current electricity. These solar cells consist of positive and negative layers on a silicon wafer. Sunlight striking the panels is absorbed, freeing electrons in the silicon crystal. Electrons activated by the sunlight move through the crystal and out to the load or battery. With this type of electric generation, typically 10 to 15 percent of the energy striking the panels is converted to electricity. Research continues to increase this efficiency.

Cost of a PV system depends largely on the application. Solar panels can generate electricity in cloudy weather, although their output is di-

minished. Energy produced on an overcast day might be as little as five to 10 percent of the amount generated on a bright, sunny day.

Fuel Cells

Fuel cells are similar to batteries, in that they produce electricity using an electrochemical reaction. Unlike a battery, which must be recharged, a fuel cell produces electricity continuously when supplied by a fossil fuel – usually natural gas, propane, methane, or bio-mass. These units are available commercially in 250 kw sizes. Smaller residential units also are being produced and field-tested at this time.

The National Aeronautics and Space Administration (NASA) first used fuel cells to provide electricity on space missions. Currently 250 kw applications are found in hospitals, computer facilities and industrial firms. Fuel cell size, equipment costs and maintenance requirements, as well as fuel quantity needed, are a few of the factors that determine the best fossil fuel to use in the fuel cell. This equipment produces clean and quiet energy. This cogenerator is so clean that it enjoys a blanket exemption from air quality standards in Southern California, which has the strictest air quality standards in the country.

What are the benefits of Net Metering?

Net Metering is a simple way to get the full value of the electricity you generate. For example, if you are a residential customer, you may not be

home during the day when your system generates electricity. Net Metering allows you to “store” this excess electricity on the grid, reducing or offsetting the electricity you would otherwise have to purchase.

Eligibility for Net Metering

Certain Qualifying Facilities and on-site customer generating facilities of limited size may be eligible for net metering. Refer to the applicable Massachusetts or New Hampshire regulations and company tariffs. The generation must be installed on the customer's premises, be interconnected and operated in parallel with the electric grid, and be utilized primarily to offset part or all of the customer's own electricity requirements.

- By regulation in New Hampshire, eligible generators are limited to 25 kW or less.
- By regulation in Massachusetts, eligible generators are limited to 60 kW or less.

How to get started

For additional information about Net Metering, please speak with one of our customer relations representatives at (800) 582-7276.