CLEAN ENERGY NH
Your Voice in All Energy Matters
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Net Energy Metering Overview
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Introduction

Net Energy Metering (NEM), sometimes just called "Net Metering", refers to a billing mechanism that provides an incentive to invest in certain small-scale grid-tied renewable generation systems by private citizens, and businesses and manufacturers. These small renewable systems do not participate in the wholesale electricity market, but instead offset the electricity consumption of the hosts/owners of the renewables systems while providing benefits to the local distribution system.

Under NEM the host/owner receives a credit for the excess electricity that the system generates, which is exported to the local distribution system. This excess energy is not stored, but used immediately by other utility customers. That credit for that excess generation can occur as either energy (kWh) or financial ($/kWh). These credits can be subtracted from the electricity that the system host/owner consumes, resulting in a "net" energy consumption that is billed at a lower rate. Alternatively, the credits can be shared credits with one or more customers.

NEM programs vary by state and utility, but they generally provide a means for homeowners and businesses to invest in renewable systems without having to also invest in electric batteries to capture the full value of a systems' production. As a result, more systems can be installed at a lower overall cost, while reducing the owner/host electricity costs, and improving local environmental quality and public health.

Overview of Electricity Rates and Costs

Critical to understanding the details of NEM is an understanding of the components of the electric rates. These can generally be divided into two categories of cost: **supply** and **delivery**.

- Electricity **Supply**
  The electricity supply portion refers to the costs of the electric power itself, and is primarily reported as the cents per kilowatt hour paid for electric power generation. The electricity supply charges pay for the electricity itself as well as the electric system capacity, renewable energy programs, and other costs associated with the competitive electricity supplier. This rate will fluctuate to account for changes in the wholesale electricity market.
  The electric supply rate is not the same for all New Hampshire customers. New England has a **competitive market for electricity supply**, meaning customers can choose which company they want to purchase their electricity supply from. Those customers that do not choose to buy from a

competitive supplier instead get their electricity from their electric distribution company (e.g., Eversource, Unitil, Liberty, NH Electric Coop), referred to as the default electricity supply.

- Electricity **Delivery**
  Electricity delivery is generally provided by one of three regulated electric distribution companies (i.e., Eversource, Unitil, Liberty) or the New Hampshire Electric Coop. These companies own and maintain the local electric grid (e.g., poles, wires, substations) that directly serve customers. The cost to cover the construction, maintenance, and management of the electric utilities territory is covered in the distribution portion of the rates. Electricity delivery charges also pay for costs associated with building and maintaining the regional electric transmission system, as well as stranded costs, and the System Benefits Charge. This last charge covers the state's energy efficiency programs.

- The total rate that customers pay for electricity, the sum of supply and delivery charges, is called the **retail electricity rate (See Figure A)**.

NH NEM Rates & Tariffs

The NH legislature authorized the NH Public Utilities Commission (PUC) to modify the NEM credit for Liberty Utilities, Unitil and Eversource in 2016, and changes were made in 2017. The PUC is reviewing the credit again in 2023 and 2024 and will determine whether further modifications are necessary in mid 2024.

- Old Net Metering -- Small Renewables (less than 100 kilowatts): Residents, businesses, and communities that installed small-scale renewable energy generators *prior to September 2017* receive a net metering credit equal to the **retail electricity rate** (i.e., equal to the combined electricity **supply** rate and electricity **delivery** rate). If the retail rate for electricity is $0.18 per kilowatt-hour, and these local renewable generators supply electricity to the local distribution grid, they receive a credit of $0.18 per kilowatt-hour **(See Figure B)**.

- New Net Metering -- Small Renewables (less than 100 kilowatts): Residents, businesses, and communities that installed small-scale renewable energy generators *after September 2017* receive a net metering credit equal to the **electricity supply rate**, plus, the **transmission rate**, plus, **25% of the distribution rate**. If the electricity supply rate is $0.08 per kilowatt-hour, the transmission rate is $0.02 per kilowatt-hour, and the distribution rate is $0.04 per kilowatt-hour, these systems receive a credit of $0.11 per kilowatt-hour **(See Figure C)**.

- Net Metering for Large Systems (between 100 and 1,000 kilowatts): Businesses and communities that install net metering systems between 100 and 1,000 kilowatts in capacity receive a net metering credit equal to the **electricity supply rate (See Figure D)**.

Figures

Figure A - Retail Electricity Rate Breakdown

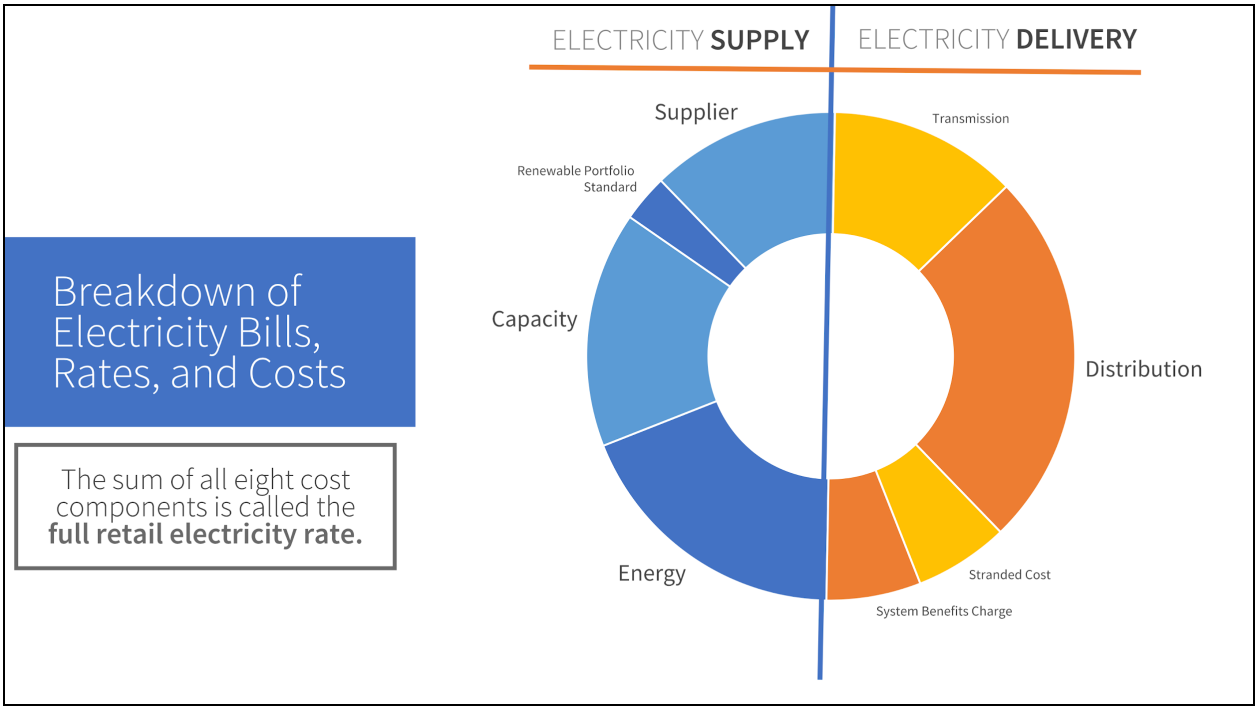


Figure B - Net Energy Metering "1.0"

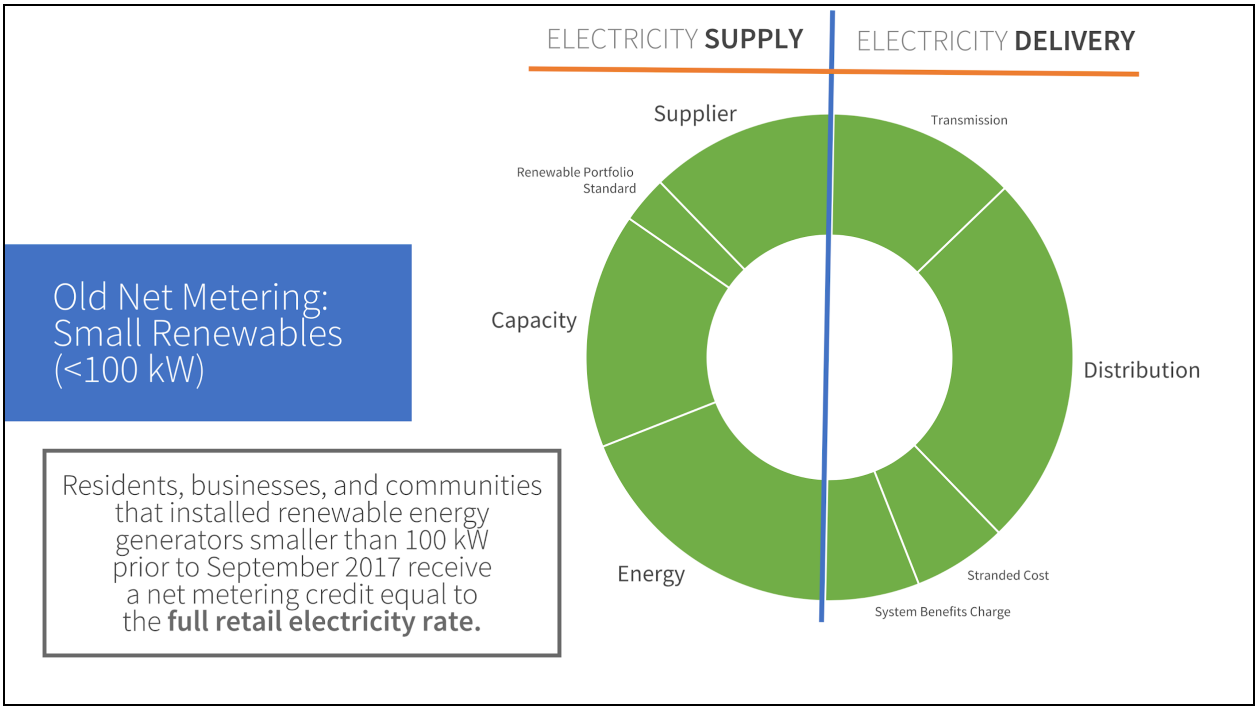


Figure C - Net Energy Metering "2.0" - Small Systems (0-100 kW)

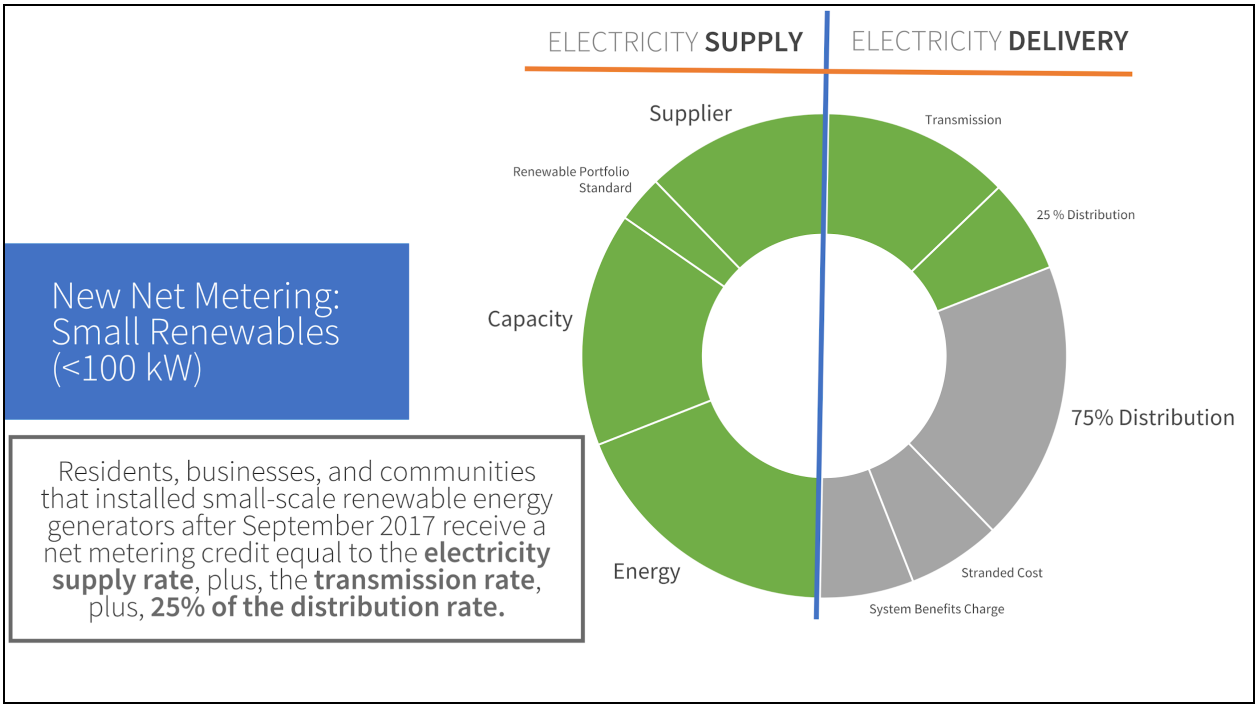
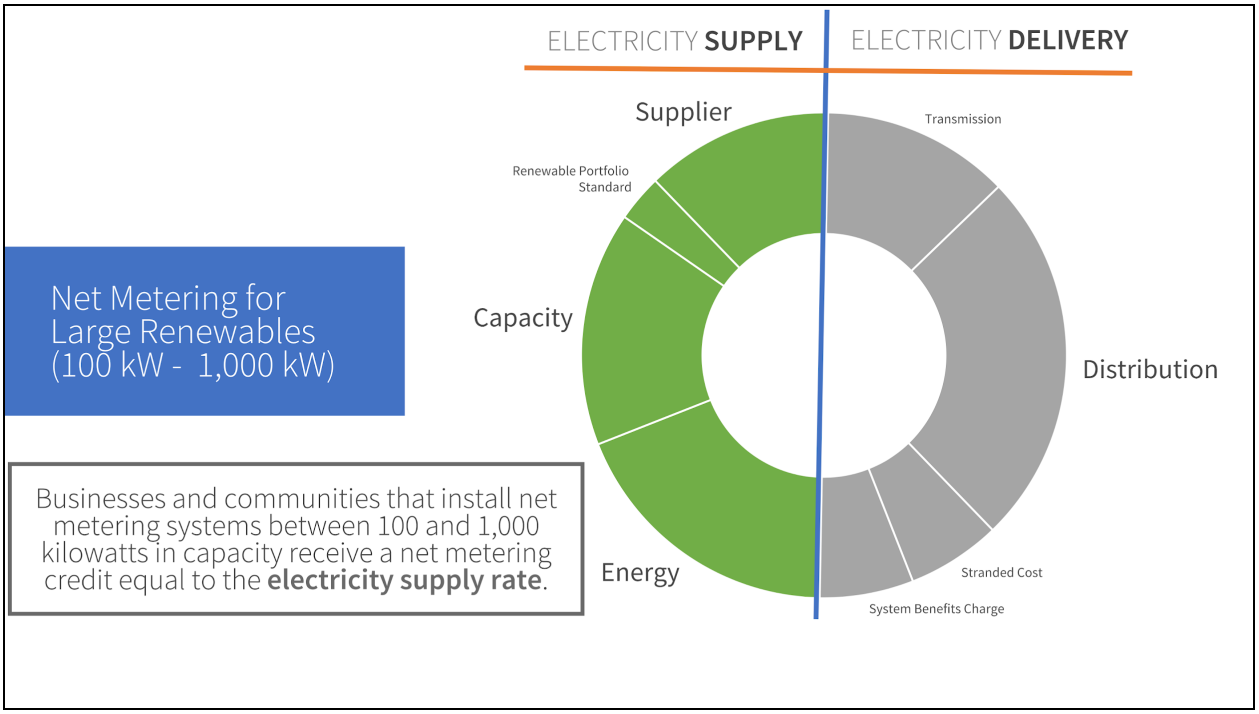


Figure D - Net Energy Metering "2.0" - Large Systems (100-1,000 kW)



The New Hampshire Electric Coop is not subject to PUC regulation and first revised their NEM credit structure in 2015. You can find more information on the NHEC Schedule of Rates and Fees.

Expansion and Duration

Arrays that are part of NM 1.0 can remain on the tariff until 2040. They do have the option of switching to NM 2.0, but if they do their bank of kWh will be converted to a monetary bill credit based on the Avoided Cost of Energy Value (ACV) which is substantially lower than the NEM 1.0 or 2.0 value.

Arrays that are part of NM 1.0 can also expand and remain on NEM 1.0 as long as the expansion is not too great. The PUC issued a procedural order in 2017 that currently governs this question. It states that you can remain grandfathered on NM 1.0 if:

- **Small systems (100 kW or less) that expand by less than the greater of 20 kW, or 50 percent of existing capacity, will remain on NEM 1.0.** So a 20 kW system that expands by 9.9 kW will remain, and a 50kw system that expands by 20 kW will remain, but a 20 kW system that expands by 15 kW will not, and a 50 kW system that expands by 20.1 kW will not either.
- **Large systems (above 100 kW) that expand by less than the greater of 50 kW or 110 percent of the customer-generator's annual on-site load, as demonstrated through historical documentation, will also remain on NEM 1.0.** So a 110 kW system that expands by 49.9 kW will be remain, as long as the customer-generator consumes enough electricity to support a 55 kW expansion.

Instantaneous Vs. Monthly Netting

There is an important distinction between various net-metering tariffs regarding how production is "netted" which can have major impacts on the payback period of any solar investment.

- **Monthly Netting** is how small systems (100 kW or less) for Liberty, Unitil and Eversource customers are handled. Monthly netting means that the customer's meter is read once a month, and if there was more generation than consumption during the prior month, that kWh surplus is converted into a monetary bill credit. If there was more consumption than generation during that previous month, the customer is billed for the net kWh consumed. *In other words, customers still receive the full retail rate for electricity that is consumed in the same month as their solar generation. They only receive the reduced net metering bill credit for surplus generation at the end of the month.*
- **Instantaneous Netting** is how large systems (100 kW - 1 MW) for Liberty, Unitil and Eversource customers are handled, and how all net metering is handled for NH Electric Coop customers, regardless of system size. In instantaneous netting, customers are paid the net metering credit rate for any export to the grid, and pay the retail rate for any imports. *This means that there is a strong incentive for customers to shift their demand to sunny parts of the day as that is the only way they can receive the full retail rate for their solar electricity.*