



OLR RESEARCH REPORT

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OLR BACKGROUNDER: NET METERING

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This report describes the billing credits that electric companies and, in some cases, competitive electric suppliers must provide to their customers who install renewable generating systems and how these credits work. It describes (1) traditional net metering (CGS § [16-243h](#)), where the credit goes to the customer with the system and (2) virtual net metering (CGS § [16-244u](#), as amended by PAs [13-298](#) and [13-247](#)), where the credit is transferred to accounts the customer designates.

SUMMARY

Under traditional net metering, a customer of an electric company or electric supplier who owns a class I renewable system (e.g., a photovoltaic system) receives a credit based on the customer's retail rate when the system produces more power than the customer uses in a billing period. In effect, the customer's meter runs backwards when the system generates excess power. The credit rolls over from month to month. At the end of each 12 months, if the customer still has a credit, he or she is credited at the wholesale rate.

Virtual net metering is available to municipal, state agency, and agricultural electric company customers that have class I systems; it is also available to municipal and state agency customers with Class III (e.g., cogeneration) systems. The credit is less than the retail rate, but these customers can transfer their credits to certain other customers ("beneficial accounts").

TRADITIONAL NET METERING

The electric company serving a customer that has a class I renewable energy system with a capacity of up to two megawatts must make the connections needed to plug the system into the grid. At the customer's request, the company must also install metering equipment that:

1. measures electricity the customer consumes;
2. deducts from this measurement the amount of electricity the customer produces and does not consume; and
3. registers, for each billing period, the net amount of electricity either (a) consumed and produced by the customer, or (b) the net amount of electricity produced by the customer.

If, in a given month, a customer supplies more electricity to the grid than its electric company or supplier delivers to the customer, the company or supplier must credit the customer for the excess on the bill for the next month. The electric company or supplier must reduce the customer's bill for the excess electricity at a rate of one kilowatt-hour (kwh) for each kwh produced. The electric company or supplier must carry over the credits earned from month to month and the credits accumulate until the end of the year. At the end of each year, the electric company or supplier must compensate the customer for any excess kwh generated at the avoided cost of wholesale power. A customer who generates electricity from a generating unit with a capacity of more than 10 kilowatts must pay the systems benefits charge and competitive transition assessment based on the customer's total consumption without netting any electricity he or she produces. Residential renewable systems are typically 10 kilowatts or less in size.

Table 1 provides an example of how traditional net metering works. For illustrative purposes, we assume that the (1) the generating system goes into operation in January 2013 and has a capacity of less than 10 kilowatts, (2) retail rate is 15 cents per kwh and the wholesale rate is 10 cents per kwh, and (3) customer is not subject to a demand charge. To simplify things, we ignore the flat monthly customer service charge. The "total kwh used" includes the amount generated by the customer that he or she uses, plus the amount bought from the electric company or supplier. The "total credit" is the credit from the prior month, plus any unused credit from earlier months.

In this example, the customer uses as much or more power than the system generates from January through April. In May, the system produces 50 excess kwh, which creates a \$7.50 credit (50 kwh times the retail rate of 15 cents per kwh) for the June bill. Because the system generates more power in June than the customer uses, the credit is carried over. In July, the total credit is \$22.50 (the \$7.50 carried over from June, plus a \$15 credit earned in June by having 100 kwh of excess generation). At the end of the year, the customer has a \$45 credit, which is applied against her \$30 bill for that month. But the next month the value of the credit is \$10, rather than \$15 (the previous credit minus the December bill), because it is based on the wholesale rather than retail rate (10 cents per kwh rather than 15 cents).

Table 1: Example of Traditional Net Metering

<i>Month</i>	<i>Total kwh used</i>	<i>kwh produced</i>	<i>Excess kwh</i>	<i>Bill before credit</i>	<i>Prior month credit</i>	<i>Total credit</i>	<i>Final bill</i>
1/13	800	500	0	\$45	0	0	\$45
2/13	800	600	0	\$30	0	0	\$30
3/13	750	650	0	\$15	0	0	\$45
4/13	700	700	0	\$0	0	0	\$0
5/13	750	800	50	\$0	0	0	\$0
6/13	800	900	100	\$0	\$7.50	\$7.50	\$0
7/13	900	1,000	100	\$0	\$15	\$22.50	\$0
8/13	850	1,000	150	\$0	\$15	\$37.50	\$0
9/13	750	800	50	\$0	\$22.50	\$60	\$0
10/13	700	750	50	\$0	\$7.50	\$67.50	\$0
11/13	750	650	0	\$15	\$7.50	\$75	\$0
12/13	800	600	0	\$30	\$0	\$45	\$0
1/14	800	500	0	\$45	\$0	\$10	\$35

VIRTUAL NET METERING

“Virtual net metering” allows certain municipal, state agency, and agricultural customers to transfer billing credits to “beneficial accounts” the customer designates. The municipal or state customer host can designate up to five beneficial accounts that are related to the municipal or state agency and up to five additional non-state or municipal beneficial accounts that are critical facilities (e.g., hospitals and commercial areas of municipalities) connected to a microgrid. An agricultural customer can designate up to ten beneficial accounts, each of which must (1) use electricity for agriculture, (2) be a municipality, or

(3) be a noncommercial critical facility (e.g., a police or fire station). The credit must be allocated among the beneficial accounts in proportion to their consumption for the previous 12 billing periods.

The virtual net metering option is open to (1) municipalities and state agencies with class I or class III energy systems and (2) agricultural customers with class I energy systems. In each case, (1) the customer must be served by an electric company and the beneficial accounts by the same company and (2) the system must have a generating capacity of up to three megawatts. Agricultural customers must own the system on land he or she owns or controls; municipal and state agency customers can alternatively lease or enter into a long-term contract for the system and there are no restrictions as to its location.

As under traditional net metering, the electric company must connect the system to the grid and provide metering equipment. If a municipal, state, or agricultural virtual net metering customer supplies more electricity to the distribution system than the electric company delivers to the customer, the electric company must bill the customer for zero kwh of generation in that month.

The electric company must assign a virtual net metering credit to the customer's beneficial accounts for the month after the customer generates excess power. The credit is less than the full retail rate. Specifically, the credit goes against the generation service component (the wholesale cost of power) and part of the transmission and distribution charges billed to the beneficial accounts. The proportion of these charges that can be offset is currently 60%; starting July 2, 2015, the proportion will fall to 40%.

The electric company must carry forward any unassigned credits from month to month until the end of the calendar year. At the end of each year, the company must compensate the customer for any unassigned credit at the rate the company pays for power it procures to serve small and medium size customers who have not chosen a competitive supplier (in effect, the wholesale electric rate) and the appropriate percentage of the transmission and distribution charges.

While the value of the monthly credit is less under virtual net metering than under traditional net metering, the ability to transfer it to multiple beneficial accounts increases the likelihood that it will be fully used in the course of a year. Under some circumstances, this can be an advantage to the customer with the generating system.

The law required the Public Utilities Regulatory Authority to develop the administrative processes and specifications for the virtual net metering program. These specifications include a \$10 million per year cap for credits provided to beneficial accounts and the year-end payments made to the customers participating in the program. The cap is split between Connecticut Light and Power and United Illuminating based on their respective sales. Each category of eligible customers (municipal, state, and agricultural) can receive no more than 40% of the capped amount.

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