

**Request:**

1. Provide your company's definition of a customer-generator. The Commission is particularly interested in how this definition affects the categorization of customer-generators by size. In addition, please answer each question below:

- a. Is a customer-generator determined by a physical address?
- b. Is the size of the installation determined by the customer's consumption of electricity or production of electricity?
- c. How would the company treat an entity that owns two net-metered installations on the same plot of land?
- d. How would the company treat an entity that owns two net-metered installations, but each is located on a separate plot of land. Would the distance between the installations or plots affect the definition?
- e. How would the company treat two separate entities that own two net-metered installations on a single plot of land.
- f. How would the company treat a parent company and a subsidiary that each own a separate net-metered installation on a single plot of land.

**Response:**

RSA 362-A:1-a, II-b defines "customer-generator" (or "eligible customer generator") as "an electric utility customer who owns, operates, or purchases power from an electrical generating facility either powered by renewable energy or which employs a heat led combined heat and power system, with a total peak generating capacity of up to and including one megawatt, except as provided for a municipal host as defined in [RSA 362-A:1-a] paragraph II-c, that is located behind a retail meter on the customer's premises, is interconnected and operates in parallel with the electric grid, and is used to offset the customer's own electricity requirements." Further, "[i]ncremental generation added to an existing generation facility, that does not itself qualify for net metering, shall qualify if such incremental generation meets the qualifications of this paragraph and is metered separately from the nonqualifying facility." Consistent with this definition, the Company defines customer-generator as any generator which is not owned by the utility, connected to the electric system.

- a. A customer generator is not determined by a physical address.

- b. The size of the installation is determined by the generator capacity rating. It is not determined by the customer's consumption of electricity or the actual expected production of electricity.
- c. The Company refers to section 903.03 (below) of the PUC 900 rules to determine how to treat multiple net-metered installations on the same plot of land.

**Puc 903.03 Where Multiple Projects Are Deemed a Single Facility.**

(a) Except as otherwise provided in (c) below, projects consisting of electricity generating equipment powered by an eligible renewable energy source or that employ a heat led combined heat and power system, and located behind separate retail meters, shall be deemed to be one facility for purposes of net metering eligibility if the projects are owned by the same person or entity or an affiliate of said person or entity and are located on the same parcel of land or adjacent and contiguous parcels of land, unless each of the following conditions applies:

- (1) Each project is located on a separate parcel of land;
- (2) The property boundaries of each parcel of land have not been subdivided, modified, or otherwise altered within the 10 years immediately preceding the submission of a project interconnection request to the distribution utility;
- (3) Each project is owned by a separate individual or by a separate corporation, limited liability company, or other legal entity; and
- (4) Each project is interconnected with the utility distribution system through a separate interconnection point and with a separate meter.

(b) The restrictions set forth in (a) above shall apply to two or more projects notwithstanding any phased approach to development or different construction schedules for such projects.

(c) Multiple projects located on the same or adjacent and contiguous parcels of land, when such projects are owned by the same person or entity or an affiliate of said person or entity and are interconnected behind separate retail electricity meters, shall be considered separate facilities if each such project is being or has been developed:

- (1) Such that not less than 50 percent of the annual generation output is to serve the on-site load of existing or new retail electric customers;
- (2) To participate in a different electric generation program, such as net metering, direct producer-to-consumer retail sales of electric power, or wholesale sales of electric power;
- (3) Using a solar photovoltaic system that is limited in size to that which will fit on the roof and exterior envelope of the building or buildings served by the retail electricity meter through which the system is interconnected to the electric distribution system; or

- (4) Using distinct and different electricity generating technologies and equipment that can be operated independently.
- (d) As used in this section, “affiliate” means any of the following:
  - (1) Any person or entity that directly or indirectly owns, controls, or holds with power to vote a majority of the outstanding voting securities or such minority thereof as to give such person substantial control of another person or entity;
  - (2) Any person or entity that is directly or indirectly owned, controlled, or held by any person or entity described in (1) above through either power to vote a majority of the outstanding voting securities or such a minority so as to maintain substantial control of such person or entity;
  - (3) Any person or entity with which another person or entity has a management or service contract or arrangement that provides such person or entity with effective control over the management, supervision, or operation of the other person or entity; or
  - (4) Any person or entity who or which actually exercises effective control over the management, supervision, or operation of another person or entity.
- d. The Company determines a generating facility by the point of interconnection onto the electric system. This is normally at revenue (Net) meter. One customer may own multiple units on separate lots of land. The Company would work with the customer to determine the most practical manner to determine if multiple units should be combined behind one meter to create one generating facility. If the two lots were adjacent and contiguous, the rules set forth in PUC 903.03 would apply.
- e. Please see the response to part c. above.
- f. Please see the response to part c. above. Unless the owner revealed the customer’s business structure, the Company would normally not be aware if two accounts were linked to a parent company and a subsidiary.

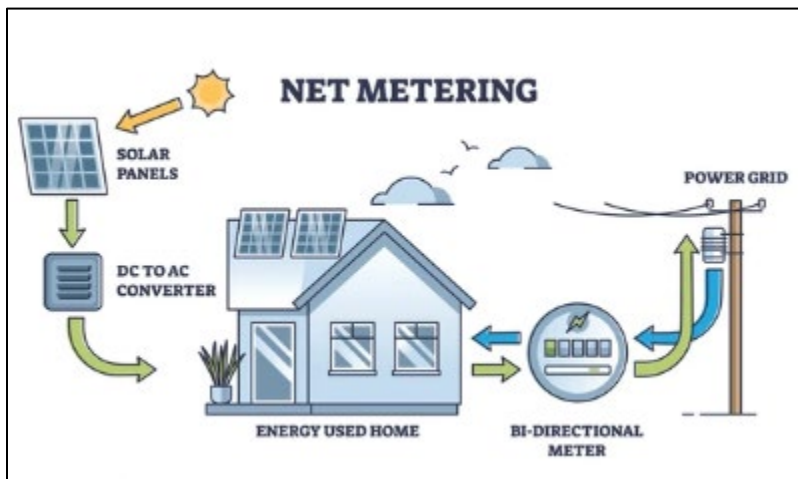
**Request:**

3. Please describe the metering hardware that customers on NEM 1.0 use, including brand, model number, and an explanatory schematic diagram. Provide a clear description of how measurement of exports and imports works.

**Response:**

Unitil uses Landis and Gyr Focus AX and S4x model meters to measure energy delivered and received from its NEM customers.

Energy supplied to the customer from the utility electric system (blue arrows) is measured by the bi-directional meter and that value is stored in the meter's delivered register. The meter also measures the amount of energy that flows from the customer's site to the utility's electric system (green arrows) and that value is stored in the bi-directional meter's received register. This energy is created by the solar array, converted so it can be used by the house and it is the excess energy not used by the house that passes through the bi-directional meter and received by the utility company.



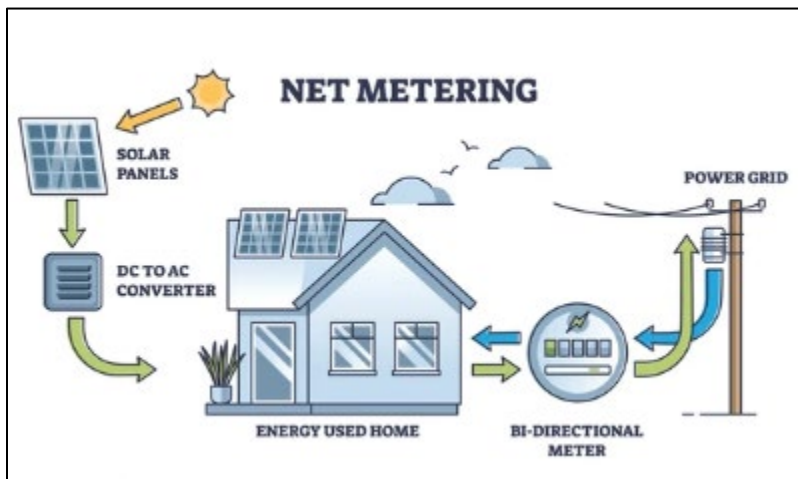
**Request:**

4. Please describe the metering hardware that customers on NEM 2.0 use, including brand, model number, and an explanatory schematic diagram. Provide a clear description of how measurement of exports and imports work.

**Response:**

Unitil uses Landis and Gyr Focus AX and S4x model meters to measure energy delivered and received from its NEM customers.

Energy supplied to the customer from the utility electric system (blue arrows) is measured by the bi-directional meter and that value is stored in the meter's delivered register. The meter also measures the amount of energy that flows from the customer's site to the utility's electric system (green arrows) and that value is stored in the bi-directional meter's received register. This energy is created by the solar array, converted so it can be used by the house and it is the excess energy not used by the house that passes through the bi-directional meter and received by the utility company.



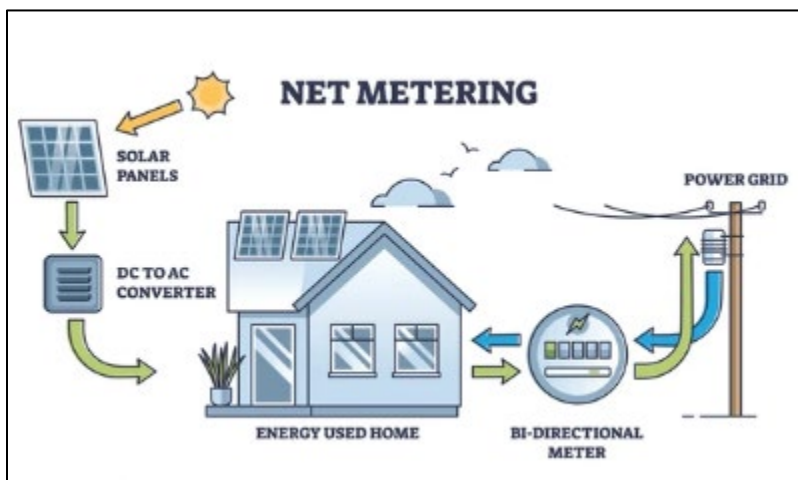
**Request:**

5. If the Commission were to implement an NEM 3.0 that required sampling in increments of five minutes or less, what brand, including model number, would the company use? Please provide an explanatory schematic diagram.

**Response:**

Unitil current metering system is not capable of supporting interval sampling of 5-minute or less. Unitil does have a project scheduled to replace its powerline carrier AMI system with an RF AMI system that will be capable of capturing five-minute, and less, interval data. This project is anticipated to occur in 2026-2027. The meter models that will be deployed as part of the AMI system replacement will be the Landis & Gyr Revelo 360 SD and Revelo 660.

Energy supplied to the customer from the utility electric system (blue arrows) is measured by the bi-directional meter and that value is stored in the meter's delivered register. The meter also measures the amount of energy that flows from the customer's site to the utility's electric system (green arrows) and that value is stored in the bi-directional meter's received register. This energy is created by the solar array, converted so it can be used by the house and it is the excess energy not used by the house that passes through the bi-directional meter and received by the utility company.



**Unitil Energy Systems, Inc.**  
**Docket No. DE 22-060**

**Date Request Received: November 25, 2024**  
**Data Request No. RR-006**

**Date of Response: December 20, 2024**  
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**Request:**

For NEM 2.0 how is the data processed? Discuss how the utilities read the information from the meter and at what frequency (monthly?), and how does this information make its way onto a customer's bill. Show an example of the meter reading for a residential solar customer and a monthly customer bill.

**Response:**

The current AMI system reads the PLX meters three times per day. The meter/endpoint supplies delivered, received and NET meter readings and transmits those readings to the headend system. The readings are then passed to a Meter Database Management System (MDMS) daily. The billing system retrieves the billable readings from the MDMS monthly on the billing cycle.

**Request:**

7. Please confirm both residential and commercial bi-directional meters capture a net-metered customer's total consumption of electricity, in its entirety. If not, how is the residual consumption treated based on the company's tariff.

**Response:**

Bi-directional meters do not capture a net metered customer's total consumption of electricity.

The bi-directional net metering for both residential and commercial customers captures:

- 1) The total amount of energy delivered to the customer from the electric distribution system and
- 2) The total amount of energy received from the customer to the electric distribution system.

The utility's bi-directional meter calculates the net using those values. The total consumption is considered the total load behind the meter. The net meter does not capture the portion of the energy produced by the solar array and consumed by the customer. The total consumption is the sum of the energy drawn from the electric distribution system (energy delivered) and the energy provided by the generator. Unitil bills based on the delivered or received energy.



**Unitil Energy Systems, Inc.**  
**Docket No. DE 22-060**

**Date Request Received: November 25, 2024**  
**Data Request No. RR-008**

**Date of Response: December 20, 2024**  
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**Request:**

What changes are necessary for the metering infrastructure to accommodate net-metering customers' ability to leverage electricity storage and more instantaneous netting, ideally five-minute intervals or faster, to allow such customers to extract benefits from away and production towards peak demand periods?

**Response:**

As a threshold matter, battery storage is not currently eligible for net metering. RSA 362-A:1-a, II(b) defines customer-generator as: “an electric utility customer *who owns, operates, or purchases power from an electrical generating facility* either powered by renewable energy or which employs a heat led combined heat and power system, with a total peak generating capacity of up to and including one megawatt, except as provided for a municipal host as defined in paragraph II-c, that is located behind a retail meter on the customer's premises, is interconnected and operates in parallel with the electric grid, and is used to offset the customer's own electricity requirements. Incremental generation added to an existing generation facility, that does not itself qualify for net metering, shall qualify if such incremental generation meets the qualifications of this paragraph and is metered separately from the nonqualifying facility.” (emphasis added). Since storage does not qualify under the customer-generator definition, it cannot qualify for net metering with the statute as it is currently written. The remainder of this response addresses additional considerations for making battery storage eligible for net metering.

There are information requirements and numerous logistical and policy considerations that must be addressed before such an assessment can be made. The question asks about changes to metering infrastructure, based on limited and undefined requirements. Moreover, the question requires the respondent to rely on hypotheticals and assumptions that would be based on policy issues that have not yet been determined.

Unitil further states that its current AMI system cannot capture interval data at samples faster than 15-minute intervals, so a new AMI system with meters capable of capturing intervals data at five-minute intervals or faster will need to be deployed.

Meters will be required to measure storage charging and discharging data in real time. Integration with AMI, Unitil and customers will be required.

**Unitil Energy Systems, Inc.**  
**Docket No. DE 22-060**

**Date Request Received: November 25, 2024**  
**Data Request No. RR-009**

**Date of Response: December 20, 2024**  
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**Request:**

Please confirm whether the currently used bi-directional meters can accommodate a more instantaneous netting than the monthly netting for small customer generators? If yes, please explain to what extent.

**Response:**

The Company's current AMI meters can supply delivered, received and net register readings up to three times per day.

**Unitil Energy Systems, Inc.**  
**Docket No. DE 22-060**

**Date Request Received: November 25, 2024**  
**Data Request No. RR-010**

**Date of Response: December 20, 2024**  
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**Request:**

With respect to net-metering, are the utilities aware of any state jurisdiction where the netting of consumption and production of electricity is more instantaneous than the monthly-netting that is currently in place in New Hampshire? If so, please provide that information.

**Response:**

Unitil only has a regulated electric affiliate in Massachusetts, where consumption and production is currently netted on total monthly readings. The Company is not aware of policies in other state jurisdictions.

**Unitil Energy Systems, Inc.**  
**Docket No. DE 22-060**

**Date Request Received: November 25, 2024**  
**Data Request No. RR-011**

**Date of Response: December 20, 2024**  
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**Request:**

If the netting is changed to hourly netting for small customer-generators for the energy component, please explain what changes the utilities will need to make to the metering infrastructure and estimate the cost to implement each change. Also explain what changes will be required if the netting for small customer-generators for the energy component is changed to five-minute netting.

**Response:**

Unitil is currently in the process of planning the replacement of its AMI metering infrastructure. The Company expects to install these meters in New Hampshire in 2026-2027. The new system, once installed, will have the capability to provide the data necessary to net on hourly or five-minute intervals. Therefore, there is no incremental cost associated with the metering infrastructure is anticipated to accommodate this functionality. However, changes to the Company's metering data management and billing systems may be required. This will be evaluated once the exact implementation is known.

**Request:**

Show a high-level system diagram for residential solar with the bi-directional meter that includes the rooftop solar, and the house consumption. Show where the bi-directional meter is located on the system diagram and confirm that all solar energy generated by the solar array is captured and that all energy consumption from the house is captured.

**Response:**

The utility meter does not measure energy generated by the solar array, nor does it capture all of the energy consumed by the house because the house receives energy directly from the solar array that doesn't pass through the utility meter.

