

# Residential Renewable Energy Solutions

## Metering Guidelines

### December 21, 2021

*Note: All [Eversource Information & Requirements for Electric Supply](#) (I&R Book) and [UI Guidebook for Requirements for Electric Service](#) standards must be met.*

This guidance document provides additional system interconnection information (including but not limited to guidance for solar paired with battery energy storage systems) as a supplement to the Eversource I&R Book, UI (Insert Equivalent) and Metering Diagrams for the Residential Renewable Energy Solutions program (which accepts applications on and after January 1, 2022 until December 31, 2027). Residential Renewable Energy Solutions Meter Diagrams can be located by clicking the following links:

- [Eversource](#)
- [UI](#)

Battery energy storage systems (“BESS” or “storage systems”) enrolled in Energy Storage Solutions must apply for interconnection, whether being connected to existing solar PV, new solar PV, or as a standalone system (i.e., not paired with solar PV or other DG resources). Storage systems that connect to the distribution system are subject to review and approval by the electric utility’s interconnection review process.

#### **Meter Socket Configuration Requirements:**

- **Eversource:** Solar PV systems are to be wired bottom (load) side inverter and top (line) side utility
- **UI:** Solar PV systems are to be wired top (line) side inverter and bottom (load) side utility
- For both UI and Eversource, the production meter socket must be labelled with a unique project ID

#### **General System Connection Considerations:**

- Meter collar adapters are not allowed. System connections must be made outside of the meter enclosure.
- Transfer switches must be in place to prevent back feed onto the EDC’s distribution system if a system is intended to island during an outage.
- All forms of existing generation must be noted during the interconnection process.

#### **Considerations for including Storage Systems:**

- BESS may be added behind a customer’s revenue meter to solar PV systems that apply/applied for interconnection before January 1, 2022 and/or are eligible for net metering via Eversource’s Rider N<sup>1</sup> or United Illuminating’s Rider NEC<sup>2</sup>.<sup>3</sup>
- Customers with solar PV that applied for interconnection before January 1, 2022 and therefore may be enrolled in net metering via Eversource’s Rider N<sup>4</sup> or United Illuminating’s Rider NEC<sup>5</sup> that are interested in installing additional solar PV must do so through the Buy-all incentive structure and metering configuration. Therefore, if a customer wants to serve on-site load with the addition of a BESS that can be charged by solar PV, they should connect the storage to the solar PV enrolled in net metering.
- BESS may be added behind a customer’s *revenue* meter for eligible customers applying to Residential Renewable Energy Solutions on or after January 1, 2022. This includes either the Netting or Buy-all system configurations.
  - For Netting systems, the BESS should be located behind the revenue meter, charged by the solar PV, serve on site load and be capable of discharging to the grid.<sup>6</sup>
  - Buy-all configurations should locate the BESS behind the customer’s revenue meter to serve on site load and be capable of discharging to the grid. In this configuration the BESS would be charged by the electric grid, not by the solar PV..
    - In this configuration, the BESS would be eligible to apply for Energy Storage Solutions. However, if BESS is added in a Buy-All configuration and it is discharging to the grid in order to participate in the Energy Storage Solutions program, it will charge at the customer’s retail rate, and will not receive bill credits for energy exported to the grid as BESS are not qualifying project types under either net metering or the EDC’s qualifying facility tariffs.

**Production Metering Considerations for solar PV plus storage under the Netting option:**

- In an AC-coupled solar PV plus storage configuration, the production meter should only measure the output of the PV. If the PV and battery are designed to island during an outage, the EDC will allow PV production to be measured during an outage.

<sup>1</sup> Eversource Rider N: [https://www.eversource.com/content/docs/default-source/rates-tariffs/ct-electric/rider-n-class-1.pdf?sfvrsn=f291ec62\\_4](https://www.eversource.com/content/docs/default-source/rates-tariffs/ct-electric/rider-n-class-1.pdf?sfvrsn=f291ec62_4)

<sup>2</sup> United Illuminating Rider NEC1: [https://www.uinet.com/wps/wcm/connect/bf3014c2-2ff5-4170-8a50-A2018\\_doc\\_3724.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-bf3014c2-2ff5-4170-8a50-9ab97598a33b-miQdZHN](https://www.uinet.com/wps/wcm/connect/bf3014c2-2ff5-4170-8a50-A2018_doc_3724.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-bf3014c2-2ff5-4170-8a50-9ab97598a33b-miQdZHN)

<sup>3</sup> In this situation note the following: If the storage system receives utility interconnection approval, connects to the electric grid, and is energized before January 1, 2022, it would be eligible for the Performance Incentive (compensation for active dispatch), but not for the Upfront Incentive of the Energy Storage Solutions program. If the storage system receives utility approval to interconnect, connects to the electric grid, and is energized after January 1, 2022, the customer would be eligible to apply for both the Performance and Upfront Incentives of the Energy Storage Solutions program.

<sup>4</sup> Eversource Rider N: [https://www.eversource.com/content/docs/default-source/rates-tariffs/ct-electric/rider-n-class-1.pdf?sfvrsn=f291ec62\\_4](https://www.eversource.com/content/docs/default-source/rates-tariffs/ct-electric/rider-n-class-1.pdf?sfvrsn=f291ec62_4)

<sup>5</sup> United Illuminating Rider NEC1: [https://www.uinet.com/wps/wcm/connect/bf3014c2-2ff5-4170-8a50-A2018\\_doc\\_3724.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-bf3014c2-2ff5-4170-8a50-9ab97598a33b-miQdZHN](https://www.uinet.com/wps/wcm/connect/bf3014c2-2ff5-4170-8a50-A2018_doc_3724.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-bf3014c2-2ff5-4170-8a50-9ab97598a33b-miQdZHN)

<sup>6</sup> In this configuration, the storage system would be eligible to apply for Energy Storage Solutions and would be subject to the dispatch requirements of that program if partaking in program incentives if approved.

- In a DC-coupled solar PV plus storage configuration, if the system is set up with a critical load panel served only during an outage, note that solar PV production serving the critical loads during the outage will not be measured .
- Proper transfer switches must be in place on all projects to prevent back feed onto the electrical grid.

**Energy Storage Solutions Considerations:**

Please note the following Energy Storage Solutions program requirement that affect metering for residential solar projects with storage systems:

- The storage system must be able to island in outage situations to provide the customer with power during an outage (e.g., with the use of automatic transfer switches).
- Residential storage systems must be able to export to the grid to meet program dispatch requirements.
- To maximize benefit to the customer, storage systems should be able to charge from solar PV except in a buy-all configuration or in the case of storage not co-located with solar PV.