Customer generation requirements (FORM 7339)

2020



Scope	
	This document provides PSE's requirements to interconnect and operate customer-owned and installed generation sources in parallel with PSE's electric distribution system. Customer generation sources include fuel cell, hydroelectric, biomass, solar, or wind power generators. Customer generation does not include emergency power generators.
Responsibilities	
Puget Sound Energy	PSE will review all interconnection applications and once approved will issue Approval to Construct. PSE will provide and install net and production meters as requested.
Customer	Customer shall submit an application to interconnect ahead of construction. Failure to obtain approval ahead of construction may result in delays and unanticipated costs for any corrections necessary. All customer electrical equipment shall comply with the NEC and any state or local code requirements.
General requireme	ents
	Customer generation systems up to 100 kW may be connected to and operate in parallel to PSE's facilities in accordance with Electric Tariff G, Schedule 150, Net Metering Service for Renewable Energy Systems and Schedule 152, Interconnection with Electric Generators. For systems larger than 100 kW and/or systems using a technology other than inverter-based renewable energy generators, please contact <u>DistributedRenewables@pse.com</u> .
	The design of these systems shall meet PSE's standards for voltage flicker and harmonics and will be served by PSE at a standard service voltage.
	 See Chapter 1, Table 2, in <u>1218</u>, Electric Service Handbook: Single-Family Residential Projects Permanent and Temporary Service.
	 See Chapter 1, Table 1, in <u>1220</u>, Electric Service Handbook: Non-residential Projects Permanent and Temporary Service.
What to submit wh	en applying for interconnection
	Customers must submit a signed Interconnection Application (including system diagram) using PowerClerk, our online application portal at https://psenetmetering.powerclerk.com .

Interconnection system diagrams

For PSE to review the interconnection application, a one-line diagram must be included. The one-line diagram shall schematically represent the following equipment and electrical connectivity:

- Battery bank (as applicable)
- Disconnect switch (as applicable)
- Generator
- Inverter
- Main electrical panel
- Production meter (as applicable)
- Service meter (net meter)
- Sub panel (as applicable for battery back-up)
- Utility service point of connection

A system diagram guide can be found at www.pse.com/netmetering.

Meter location

Net meters and production meters are subject to the meter location requirements defined at the bulleted locations below.

- See Chapter 5 in <u>1218</u>, Electric Service Handbook: Single-Family Residential Projects Permanent and Temporary Service.
- See Chapter 4 in <u>1220</u>, Electric Service Handbook: Non-residential Projects Permanent and Temporary Service.

Production meters are optional. When a production meter is requested, it must be shown on the system diagram and noted on the Interconnection Application. A **single** production meter must be able to accurately measure all and only energy produced by the generating system and must be located adjacent to the net meter.

"Adjacent" is defined as between 10 inches to 6 feet center-to-center along the same wall. Installers shall not round corners.

Production metering for an expansion of a Generating Facility (defined as all generation behind a single net meter) will be reviewed on a case-by-case basis. The priority is for "all or none" of a generating facility's energy output to be measured.

More information about why a customer may want production meters can be found at <u>www.pse.com/netmetering</u>.

Meter socket requirements

When an optional production meter is requested, the customer shall provide and install the meter socket. Customer-provided metering equipment shall meet the requirements stated at the bulleted locations below. Production meter sockets shall not be "jumpered" prior to PSE's installation of the meter.

- See Chapter 5 in <u>1218</u>, Electric Service Handbook: Single-Family Residential Projects Permanent and Temporary Service.
- See Chapter 4 in <u>1220</u>, Electric Service Handbook: Non-residential Projects Permanent and Temporary Service.

Customers may not tap at or in a meter socket except for 320-amp service. For 320-amp service, customer may not create new lugs, modify existing lugs, or tap into bypass lugs.

Labeling requirements

The labeling requirements at the bulleted locations below apply to net and production metering enclosures. In addition to those requirements, meter enclosures shall be labeled with permanently affixed signage at the production meter and net meter enclosures to identify their function (i.e., net meter or production meter). Where metering is accomplished at different voltages, the signage must also identify the voltages at which the meters are energized.

- See Chapter 5 in <u>1218</u>, Electric Service Handbook: Single-Family Residential Projects Permanent and Temporary Service.
- See Chapter 4 in <u>1220</u>, Electric Service Handbook: Non-residential Projects Permanent and Temporary Service.

Labels shall conform to the requirements of NEC Article 690. All labeling should be capitalized. PSE requires engraved phenolic nameplates or adhesive die-cut labels at least 1 inch high, with raised or cut-out lettering that is a minimum of 3/8 inches high.

Disconnect switch requirements

PSE must have the ability to disconnect customer generation from PSE's system for employee protection. A visible, lockable disconnect switch is recommended to be installed for all customer generation systems, and is required in some cases.

A visible, lockable disconnect switch is required in any of the following scenarios:

- Maximum generating capacity is greater than 25 kW ac.
- Electric service is three phase.
- Electric service is CT metered.

A disconnect switch is optional if your system meets all of the following characteristics:

- Maximum generating capacity is 25 kW ac or less.
- Electric service is single phase.
- Electric service meter is self-contained.

When a visible, lockable disconnect switch is required, it must be a single switch that isolates the entire generating system and is colocated with the electric service (net) meter. When the generation system includes optional production metering, the placement of the disconnect switch relative to the production meter shall be as follows:

- For 240 V and 120/208 V self-contained and CT-rated production meters, the disconnect switch shall be connected to the Line side of the production meter (between the production meter and the inverter).
- In the case of 480 V self-contained production meters, the disconnect switch shall be connected to the Load side of the production meter (between the production meter and electrical panel).

Commissioning

Customer must leave the customer generation system OFF until PSE commissions and installs the net meter.

Systems that include optional production metering shall be left on at the disconnect switch with PSE production meter socket empty. The system is expected to turn on for testing when PSE installs the production meter.

For systems without a production meter, the following applies:

- Systems with a visible/accessible ac disconnect switch: The system must be left off at the ac disconnect switch after the electrical inspection. The system will be turned on by PSE when the net meter is installed.
- Systems without an accessible ac disconnect switch: The system must be left off at the breaker after the electrical inspection. PSE will make an appointment with customer to coordinate installation of net meter commissioning.

Resources

Additional information about interconnection and net metering with PSE (including Rate Schedules 150 and 152, details about the state and federal incentives, and system diagram guides) can be found at <u>www.pse.com/netmetering</u>.