

To protect the electric reliability and safety of our customers, we look at the big picture

Your project may affect the electrical reliability and safety of our other customers. Consequently you may be asked to purchase equipment outside the design scope of your project to eliminate those risks. Pacific Power considers the issues below for each interconnection, especially the larger ones.

- Power size and type of distributed generation already connected (or planned to be connected) to the circuit.
- Locations of line reclosers and line regulators between the point of interconnection of your distributed generation and the power system source substation.
- Minimum amount of power consumed by the existing customers on the circuit.
- The dead time between the interruption of fault current and the automatic reclosing of the fault interrupting devices on the circuit.
- Minimum power consumed by the customers connected to the substation transformer.
- Type of protection system used for the power transformer at the power system source substation.



Let's turn the answers on.

Connecting to Pacific Power's electrical system:

GETTING STARTED

For net-metering customers who want to interconnect up to 2 megawatts of distributed generation



Let's turn the answers on.



Pacific Power welcomes your interest in distributed generation. Our goal is to make the process for connecting to our system easy to understand so there are no unexpected and costly surprises after you initiate your project. With that goal in mind, we have created this guide to get you started.

Every interconnection project is unique and we encourage you to contact us during the planning process and before you purchase any equipment. We can help you plan technical solutions for your project to ensure a high level of reliability and power quality –

so our system and your interconnection will function properly.

This guide will introduce you to the general requirements and processes to connect to Pacific Power's system. Detailed technical requirements are contained in the following documents which should also be reviewed by you or the technical experts for your project:

- Pacific Power Policy 138 available at pacificpower.net/netmetering
- IEEE 1547
- UL 1741

Note that most generator installers should already be familiar with IEEE 1547 and UL 1741, or the documents are available online for a fee.

Pacific Power’s general interconnection requirements

If you wish to connect generators to Pacific Power's electric grid you must ensure your projects do not compromise the safety, reliability and operability of the electric grid or place other customers' equipment at risk. This may increase project costs beyond your original scope.

A few of the technical requirements for interconnection of distributed generation to the electrical grid are:

- You will be required to provide an “anti-islanding” scheme. Islanding is a condition in which a portion of Pacific Power's system can stay energized and operate by itself even when our power is de-energized. If warranted, you will be required to pay for protection against islanding.
- Your generating facility must include a UL listed AC disconnect switch that provides a visible break, is lockable in the open position, and is located between the production meter and the sub-panel or other connection to the generating facility. Your disconnect switch must be accessible to Pacific Power personnel at any time of the day. Specific requirements may vary by state and system size.
- Your generation system must be effectively grounded. Most utility distribution systems in North America, including most of our utility distribution lines, are four-wire multi-grounded systems. This particular kind of system depends on effective grounding to prevent dangerous over voltages during short circuits on the line.
- The protection system at your generation site must meet the latest IEEE 1547 standard and Pacific Power Policy 138. If it doesn't, you will be responsible for purchasing and installing additional protection equipment.

Inverter-based interconnection

Inverter-based generators include solar, fuel cell, small-scale wind systems and energy storage systems. Each interconnection project is assigned a 'Tier' determined by the size and characteristics of the distributed generation technology to be used:

Tier level	Distributed Generation system size	Distributed Generation technology
Tier 1	Less than 25 kilowatts	Inverter based
Tier 2	25 kilowatts - 2 megawatts	Inverter based
Tier 3	25 kilowatts - 2 megawatts	Inverter based Non-inverter based

In addition to the general interconnection requirements listed above, each Tier has additional interconnection requirements. Here are some of those:

Tier 1

- The total combined distributed generation power rating on the circuit with the addition of your system cannot exceed a reasonable portion of the total circuit annual peak load.
- The inverter to be connected is UL 1741 approved.

Tier 2

- You must meet the requirements for Tier 1 systems.
- The aggregate generation capacity connected to the circuit, including your system, may not contribute more than a safe portion of the circuit's maximum fault current.
- If you want to interconnect a Tier 2 system on a circuit having one or more rotating machines connected to it your project will be moved to Tier 3.

Tier 3 – Inverter-based or non-inverter based interconnection

Non-inverter based generators include rotating machines such as induction generators and synchronous generators. Generators of this type, irrespective of power capacity, will be evaluated in the Tier 3 category. Inverter-based distributed generation projects that do not meet the requirements for Tier 2 will also be classified as Tier 3. A few requirements are listed below:

- All non-inverter based interconnection requests will be processed per a state-mandated interconnection process. Learn more about the requirements for your state at pacificpower.net/netmetering.
- Tier 3 interconnection requests may require one or more interconnection studies be performed by Pacific Power to determine feasibility, system impact, and cost of safely connecting your generation facilities to our system. You will be responsible for paying for the interconnection studies at our actual costs.
- Based on the interconnection studies, you may be responsible for purchasing and installing any necessary protection requirements such as fault detection schemes, reclose blocking, direct transfer trip or different breaker tripping schemes.



Pacific Power’s general interconnection process

- Step 1. Select a designer/installer who can build your project to conform to Pacific Power Policy 138, IEEE 1547 and UL 1741.
- Step 2. Complete a Net Metering Application/Agreement available at pacificpower.net/netmetering. If you have any questions, call us toll free at 1-888-221-7070.
- Step 3. Submit your application and application fee, if required for your state. Pacific Power will review it and let you know if there are issues needing further study. The review period typically takes 15 to 30 business days.
- Step 4. Receive approval from Pacific Power via email.
- Step 5. Install your project and have it inspected by the local authorities (city or county electrical inspector or other authority for your area).
- Step 6. Submit your approved electrical inspection form from the local authority to Pacific Power.
- Step 7. Pacific Power will install a net meter within 10 days of receipt of your approved inspection.
- Step 8. Start generating electricity!

