

Puget Sound Energy
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Select and safely install a home generator



For your home



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About Puget Sound Energy

Puget Sound Energy is Washington state's oldest local energy company. We serve 1.1 million electric customers and more than 760,000 natural gas customers in 10 counties. For more information, visit pse.com. Also follow us on **Facebook** and **Twitter**.

Standby or back-up generators

We work hard to keep the power on, but there are times when power outages occur. A standby or back-up generator can limit the interruption caused by an outage, and provide your home with an alternate source of electric power.

Consider purchasing a standby generator if:

- You want the safety and security of knowing you will not have to be without power in an outage.
- You have a home business that requires power (Internet, phone connection).
- You have a sump pump, well or septic system.
- You have medical needs that require power (medication that requires refrigeration, respirator, oxygen).
- You live in a remote area where power outages are more common.
- You are building a new home or business

Ask yourself “What electric needs do I have?”

Consider the following:

- Heat
- Medical equipment
- Septic system
- Well or sump pumps
- Cooking
- Hot water
- Refrigerator
- Freezer
- Lights
- A/V needs
- Computer
- Powered phone system
- Garage door opener
- TV

Once your needs are determined, you must choose between a permanent or portable generator system.

Permanently installed generators

This type of generator starts and operates without any input or action by you, and is typically fueled by natural gas or propane. Most customers who use our services select this type of installation.

If you have medical needs that require power, run a home-based business or have a well or septic system, you'll be best served with this type of generator. It is "automatic" and typically starts and operates without additional assistance. It is more expensive than a portable generator, but offers greater peace of mind to those who absolutely cannot be without power. Whether you are home or not, the generator starts and provides power to meet your needs.

NOTE: Before purchasing a natural gas-fueled generator:

Have an evaluation of your natural gas service prior to the installation of any generator system – this ensures that the gas service size and meter are able to meet the additional needs of the generator.

If you have not determined the generator type, size, installation details, or you have additional questions that you need assistance with, please call a PSE Energy Advisor at **1-800-562-1482**. They will provide additional assistance or direct you to PSE staff who can assist you.

If you are installing a permanently installed generator and have determined the gas pressure and volume requirements for the generator you will be adding and

your existing gas load for the gas equipment you currently have, please contact our Customer Construction Services Department at **1-888-321-7779** to determine the supply available from your current meter and service sizing.

Potential Benefits:

- Operates automatically during an outage – you do nothing!
- Able to power the majority of circuits in your home or business.
- Quieter operation than portable generators.
- Operates if you are home or away.
- Self-tests regularly to ensure that it's always ready.
- Weatherproof, locked enclosure.
- Typically a 30 second or less delay between utility outage and return of power from the generator to your home.
- Transfer switch prevents generator from backfeeding into utility lines.
- Uses clean, safe natural gas or propane.
- Significant manufacturer's warranty.

Considerations:

- Verify you have a contractor that is experienced in this type of installation and will follow all applicable codes, regulations and laws.



Portable generators

If you have a smaller budget, limited needs, and the ability to manually start and operate a generator during an outage, a portable generator can be a good option.

Potential Benefits:

- Available at many retail outlets.
- Least expensive of standby generator equipment.
- Typically gasoline powered.
- Sized for 2,000 to 4,000 Watts for direct extension cord connection.
- Sized for 4,000 to 12,000 Watts for home transfer switch power applications.
- Many Web sites offer assistance in generator sizing.

Considerations:

- Heavy, must be moved outside to use.
- Fuel must be safely stored for use (in a metal container that meets fuel storage standards) and filled often if generator is in use.
- A manual transfer switch must be properly installed to provide direct connection to selected circuits in the home.
- Most start with pull cord.
- Must manually connect cords when an emergency exists.
- Can be easily stolen when not in use.
- Significant noise when operating.

Portable generators are used either as an Independent Unit or as an Integrated System.

Independent unit/small portable generator

- Calculate the wattage of items you want to power and be sure the unit will do the job.
- A properly sized and grounded extension cord is connected directly between the generator and the appliance or device that requires power.
- Check the cord for the Underwriters Laboratories (UL) rating for the capacity.
- Cords must be rated for outdoor use.
- Do not overload the cords or generator by connecting too large a load or too many items to the cord.
- Be sure to route any cords where they will not be at risk for damage.
- DO NOT plug any cords from the generator into any outlets or wall connections. This could cause fire or electrocution to you or others nearby as well as those working on power lines.
- Have a fire extinguisher nearby.
- Be sure to follow all instructions that come with the generator and contact a licensed contractor if you have any additional questions.



Caution

When a power outage occurs, follow the manufacturer's recommendations.

Move the portable generator outside, away from any living space to a safe, properly vented area, fuel as necessary, make proper electrical connections from the generator either to previously installed transfer equipment, or directly to the appliance using an approved extension cord. Check unit for safe and proper operation often.

Integrated systems and large portable generators

Same as small portable generator plus:

- May be connected to existing wiring using a properly installed and approved transfer switch or mechanism, protecting against dangerous electrical back feed.
- Can safely power larger items and more circuits in the residence or home business when designed and installed correctly.
- Always have a licensed electrical contractor install equipment to ensure proper installation.
- All permits must be secured from appropriate jurisdiction and approved prior to installation or use of any transfer equipment.
- Have a fire extinguisher nearby.

Considerations:

- Large, heavy and difficult to move.
- Requires home owner to move, connect, fuel, secure against theft and store when not in use.



Manual Transfer Switch (MTS)

- Used most often with a larger portable generator to connect the generator power supply to the home circuits.
- Must have all permits, approvals and inspections as required by local jurisdictions.
- Wired permanently to the home and requires properly sized connection cord between generator and MTS.
- Allows you to power select circuits in your service panel to the limit of your panel or generator.

Information contained in this brochure is not intended to address the National Electrical Code (NEC) requirements for the installation of standby or back-up emergency electrical systems required by law. (Consult with a PSE generator contractor or a licensed professional for all NEC requirements for these and other back-up power system installations.)



Generator safety checklist — do's and don'ts

Do's

- Do install and use your generator in absolute compliance with the manufacturer's instructions.
- Do verify codes, standards and requirements with the appropriate jurisdictions and assure that your generator and installation are in compliance. If you are unsure of complete compliance, use a PSE pre-screened contractor or a licensed contractor who will meet all the proper requirements.
- Do follow NEC requirements for installing your generator and transfer switch.
- Do operate a generator in a safe, open air environment defined by the product manufacturer. Burning fuels produce carbon monoxide (CO) gas, which is odorless, colorless and deadly.
- Do install battery-operated or plug-in (with battery back-up) CO alarms in your home, following manufacturer's instructions.
- Do test CO alarms often and replace batteries when needed.
- Do store liquid fuel in proper containers and in a manner that meets fuel storage standards.
- Do keep your generator dry. Operating the generator in snow or rain, or near water, can lead to death or serious injury.
- Do have your generator serviced regularly in accordance with the manufacturer's instructions.
- Do call **1-800-562-1482** and speak to a PSE Energy Advisor for more information.

Don'ts

- Don't connect a back-up generator to the wiring system of a residence or home business without an approved and inspected permanently installed, transfer switch. The transfer switch keeps your generator from sending power back through the utility grid and endangering the lives of electrical workers repairing power lines or citizens who may accidentally contact fallen lines. Also, the transfer switch protects your generator from damage when power is restored. Consult a licensed contractor for assistance.
- Don't refuel a hot engine if your generator burns gasoline or diesel. Spilled fuel on a hot muffler can be disastrous. Let the generator cool while not operating for at least 15 minutes to minimize the danger of fire.
- Don't use an undersized extension cord with a generator. An extension cord that is not heavy enough can damage the equipment you are operating and cause a fire hazard. Both the length and diameter of wire affect its ability to carry an electrical load. The longer the extension cord and the larger the electrical load, the larger the diameter of the wire must be. If you have any questions, get help from a licensed electrician or qualified supplier who can size the cord to match the equipment you want to operate.



For more information about standby or back-up generators, visit pse.com or contact a PSE Energy Advisor at **1-800-562-1482**, Monday through Friday, 8 a.m. to 5 p.m.

For further information in determining if the contractor you are selecting is licensed and bonded in Washington state, visit ini.wa.gov/tradeslicensing/contractors/hirecon.