

PACIFIC GAS AND ELECTRIC COMPANY

POWER RESILIENCE PLAYBOOK



For Small Businesses

INTRODUCTION

In the event of extreme weather, wildfires or other emergency situations, PG&E may need to turn off power to ensure public safety or protect critical infrastructure.


Be ready to act in the event of a power outage. Backup electric power, including generators, can be a vital part of any preparedness plan.


Backup electric generators operate as a stand-alone power source and are not connected to PG&E's power grid. Generators are typically powered by solar plus back-up storage, battery, natural gas, gasoline, propane or diesel fuel.


This guide is intended for businesses of all sizes. Information on backup power options and considerations is available on PG&E's website at pge.com/backupper.

BACKUP POWER

Consider these important factors when deciding whether you need backup power:

 **Energy Needs:** Do you own certain devices or equipment that need to keep functioning in the event of a loss of power? How crucial is it for you to have power during an extended outage?

 **Cost:** Backup power can cost thousands of dollars. Take any immediate needs into consideration as you examine which option may be the best choice for you.

 **Noise & Emissions:** Are there community ordinances that restrict or limit the decibel level or emissions from outdoor equipment?

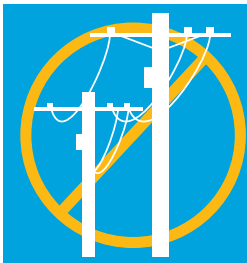
Portable and permanent-standby generators may be able to provide power for large equipment or a whole building. Alternative backup power solutions include portable power stations and battery technology that can charge devices ranging from phones to refrigerators.

For more information, visit PG&E's Marketplace at www.marketplace.pge.com/portable-power-stations.

GENERATOR SAFETY

Understand how to use your generator in order to avoid damaging your property, endangering your life and the lives of PG&E employees who may be working on power lines in your community.

For more information, visit pge.com/backuppower.



FOR YOUR SAFETY: Understand and follow all safety instructions provided by the manufacturer. Never connect generators to another power source, including PG&E power lines.

PORTABLE GENERATOR SAFETY

- Ensure backup generators are the correct size for your power needs
- Position your generator where the exhaust can vent safely
- Only use extension cords that are properly sized for your generator's electric output to prevent overheating
 - The American Wire Gauge (AWG) industry standards can be utilized to determine which extension cord is right for you - remember, the thicker the cord, the smaller the AWG rating
- Keep cords out of high-traffic areas to avoid tripping hazards

PERMANENT-STANDBY GENERATOR SAFETY

- Apply for Interconnection for a Permanent-Standby Generator by visiting the PG&E Interconnection Portal at yourprojects.pge.com
- Installation requires a licensed electric contractor or other qualified professional
- Ensure electricity from your generator does not flow or "backfeed" into PG&E's power lines
 - Prevent "backfeed" by installing a "double-pole, double-throw transfer switch"
- Additions or adjustments to your facility wiring should be inspected by your city or county building department
- Once installation is complete, call PG&E at 1-800-743-5000 to let us know about your backup system
 - PG&E employees will then be aware of your generator when working on an outage in your area

GENERATOR OPTIONS

Power outages can happen at any time. Backup electric generators can be a part of any preparedness plan.

Below are representative suppliers and contractors. PG&E does not make any endorsements or recommendations. Before you purchase, PG&E recommends reviewing your options and getting more than one bid. This list is not comprehensive of all possible suppliers.

RESIDENTIAL OR SMALL AND MEDIUM BUSINESS

[Amazon >](#)

[Cummins >](#)

[Lowe's >](#)

[Angie's List >](#)

[Generac Battery Solution >](#)

[Kohler >](#)

[Ascentium Capital >](#)

[Generac Power Systems >](#)

[Peterson Power >](#)

[Briggs & Stratton >](#)

[Home Depot >](#)

[Sears >](#)

[Champion Power Equipment >](#)

[Home Advisor >](#)

[Tesla >](#)

GENERATOR PLACEMENT

Keep your generator in a safe and secure location.
Consider the following:

- ✔ **Maintain three or four feet of clear space on all sides of your generator for adequate ventilation.**
- ✔ **Consider a weatherproof enclosure that is large enough to provide adequate ventilation and easy access to your generator's radiator, fuel tanks, air and oil filters, and charging system.**
- ✔ **Buy or rent a generator built with acoustical steel and sound insulation if it will be located in a residential area.**
Note: Local noise ordinances should also be reviewed as they may impact generator siting, design or operations.
- ✔ **Consider installing a cement pad to provide a stable surface for portable generators during an outage.**
- ✔ **Cover your generator with a roof to increase its life expectancy.** Or position the generator pad so that a roof can be added later.
- ✔ **Generators and their fuel tanks should be located above flood levels.** A common height requirement for critical infrastructure is three feet above the 100-year floodplain. Check your local and state requirements.

FUEL

Maintain on-site fuel and have multiple ways to obtain additional fuel from vendors during emergencies.

It may be difficult or impossible to purchase fuel during a power outage. To keep your generator operating for an extended period and to maximize availability, consider using a bi-fuel generator and reducing energy consumption. To help manage fuel availability in the event of an emergency, consider the following:

1. Local fuel availability during power outages and other emergencies
2. The number of hours you expect your generator to run without refueling
3. Adequate on-site fuel storage to mitigate emergency fuel delivery
4. Safe storage requirements for fuel in natural disaster areas
5. Periodic tests for fuel degradation
6. Operating a generator may be subject to air quality regulations.
 - To find the air quality regulator serving your area and obtain more information please visit arb.ca.gov/app/dislookup/dislookup.php.

GENERATOR MAINTENANCE

If generators are not properly maintained, they will not function properly during emergencies, leaving you without backup power when you need it the most.

Maintenance requirements for generators vary, so be sure to have a contractor perform scheduled maintenance as recommended by the manufacturer.

DID YOU KNOW? During Hurricane Sandy, many generators failed after 24 to 48 hours because they had not been properly exercised and maintained.

Generator Operation Maintenance and Tips:

- ✔ **Regularly run generators** under required load for extended periods to test for any problems.
- ✔ **Record all maintenance activities** to assess performance and operating costs and inform future buying decisions.
- ✔ **Test your generator** under load after each time it is serviced.
- ✔ **When you change the oil in your generator, consider sending a sample to be tested for the presence of metals.** Metals could indicate engine wear, which may require repairs.
- ✔ **Perform additional maintenance** on your generator if you anticipate it may be run for extended periods of time (more than five days).

For more information please visit
pge.com/backupper