



Backup Power Installation Guide

Generation and Storage

April 2020

Backup Power and Emergency Preparedness

We recognize that living without power is more than an inconvenience. While a decision to turn off power can protect against devastating consequences, it also disrupts lives and can include its own risks, particularly for those in vulnerable circumstances. For this reason, backup power can be a helpful part of any emergency preparedness plan. If you have decided that backup power may be a good solution for your home or business, please carefully review the following information and always work with a qualified electrician or contractor to ensure safety.

Backup Power Systems

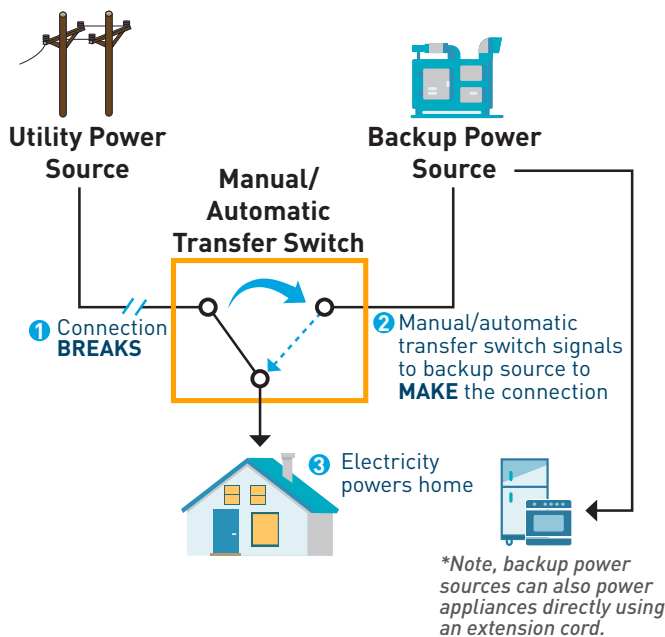
There are two key types of backup power systems:

“Break-Before-Make” Systems:

This style of backup power system involves switching your electric usage over to a backup power source using an extension cord, a manual transfer switch or an automatic transfer switch.

It is called a “break-before-make” system because your power must be shut off (break) before the system can function again (e.g., using an extension cord to plug devices directly into the generator).

This type of system typically requires the least amount of effort and includes solutions such as portable backup power systems available at hardware stores, as well as permanent standby generators.

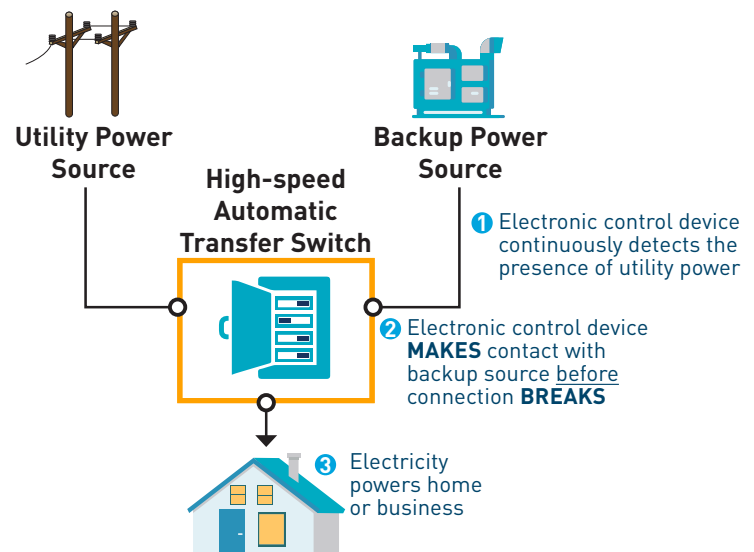


“Make-Before-Break” Systems:

This style of backup power system involves installing technology that automatically switches your energy usage over to a backup power source when an outage occurs.

This means that the system is ready to operate (make) before an outage has occurred (break) and that it functions seamlessly without manual assistance.

This type of system typically requires more effort to install in your home or business and includes solutions such as permanent backup generators, solar generators and battery storage technology.



See reverse for backup power and storage requirements, backup power worksheet and safety tips.

Backup Power and Storage Requirements

A variety of local, state, federal and PG&E rules regulate the usage of backup power and storage solutions. Consider the following when choosing the type of system and energy source that is right for your home or business.

- Local Building Requirements:** Every jurisdiction regulates backup power and storage in their own way. Customers who are ready to install their backup power system should consult a qualified electrician or contractor who understands local building codes and notification requirements.
- Local Air Quality Requirements:** Be aware that operating a backup power system may be subject to local air quality regulations. To find the air quality regulator serving your area and for more information, please visit arb.ca.gov/app/dislookup/dislookup.php.
- PG&E Interconnection Requirements:** Interconnection to PG&E’s grid is governed by both federal and state regulations for safety and reliability. All solar and renewable backup power systems must connect to the PG&E grid. Customers may need to notify PG&E or work with their qualified electrician or contractor to complete PG&E’s Interconnection Application. Learn more about interconnection, including the application timeline, at egi-pge.com.
- Transfer Switch Requirements:** Both manual and automatic transfer switches must be certified under the UL 1008 standard. We encourage customers to consult a qualified electrician or contractor to ensure their equipment is UL 1008-certified. Learn more by visiting standardscatalog.ul.com/standards/en/standard_1008_8.
- National Electric Code (NEC) Requirements:** Backup power systems must meet specific requirements set by NEC Articles 445, 700, 701 and 702. These articles regulate the installation, operation and maintenance of emergency, legally-required and optional backup power systems. We encourage customers to consult a qualified electrician or contractor to ensure their system meets NEC requirements. Learn more by visiting nfpa.org/electricalsolutions.

Backup Power Worksheet

Use the worksheet below to ensure you are selecting the right backup power source for your home or business.

System Type	Power Source	Necessary Equipment	Local Agency Notification or Permitting Required	PG&E Interconnection Application Required
“Break-Before-Make”	Portable Gas, Battery Storage, Diesel or Propane	Extension Cords	Generally No	No
		Manual Transfer Switch	Yes	No
	Permanent Natural Gas or Propane	Manual/Automatic Transfer Switch*	Yes	No
“Make-Before-Break”	Permanent Natural Gas, Propane or Diesel	High-speed Automatic Transfer Switch*	Yes	Yes
	Battery Storage	High-speed Automatic Transfer Switch*	Yes	Yes
	Solar with Battery Storage	High-speed Automatic Transfer Switch*	Yes	Yes

*Back up power systems using automatic transfer switches may require an associated control scheme.

A NOTE ABOUT SOLAR BACKUP SYSTEMS

Customers who have a home battery system paired with their solar power system may be able to “island” from the grid (i.e., create a microgrid) and use battery power during a PSPS event. This type of system allows solar panels to recharge the battery during an outage without impacting PG&E’s grid. We recommend customers speak with their solar and battery service provider to find out if their system is equipped for islanding and whether their current interconnection agreement with PG&E allows for islanding.



For more information on backup power and safety tips, visit:

pge.com/backuppowers

Para ayuda en español por favor llame al **1-866-743-6589**.

要用粵語/國語請求協助，請致電 **1-866-743-6589**。

Để được giúp đỡ bằng tiếng Việt, xin gọi **1-866-743-6589**.

한국어로 도움을 원하시면 **1-866-743-6589** 번으로 전화하십시오.

Para tulong sa Tagalog, mangyari lamang na tumawag sa **1-866-743-6589**.

Для получения помощи на русском языке, пожалуйста, позвоните по телефону: **1-866-743-6589**.