

How To Choose An Emergency Backup Generator

If you live in California, power outages are not a matter of ‘IF’ anymore. It is a matter of when, and how often. A permanent solution to deal with multiple, prolonged power outages is to install solar plus battery backup. Solar energy plus battery backup is a long-term, permanent solution that has an ROI of seven to eight years, delivering savings plus security. If you look at the 10-year cost of ownership, a battery backup solution is less expensive than a gas-powered generator, portable, or permanent.

Although we will recommend that a homeowner first look at how affordable and reliable a solar plus battery backup solution is, we recognize that there are a lot of homeowners that really just want a portable generator that will meet their needs. That being the case, here are a few things to consider if you are thinking of buying a portable emergency power generator.

1. Emergency Portable vs. Hard-Wired

If you want to have multiple circuits in your service panel powered by your generator, you will need a larger generator (it can still be portable), a transfer switch installed, and electrical work done. This is a different level of emergency power generator and requires a licensed, skilled electrician. At this level, the cost is well north of \$4,000.

The more traditional, easy, and affordable solution is an emergency power generator that you wheel out of your garage, and run a few extension cords into the house.

2. Fuel Source:

Emergency portable generators are all typically gasoline powered. There are some dual fuel portable generators that can also run on natural gas or propane. On the plus side, a gas generator can theoretically run for days and days, as long as there is a constant fuel supply.

With a portable, emergency, gasoline-powered generator, you will have to keep a supply of gasoline on hand, regularly start the generator, and cycle out the gas tank every few months with fresh gas.

3. Size

Understanding that an emergency portable generator will utilize power cords to power devices in your home, do not expect a portable generator to run your air conditioner. Unless, of course, you have a portable air conditioner that you can plug in.

Figure out ahead of time what you want to power with your portable generator. Refer to this home appliance consumption table.

https://solarponics.com/wp-content/uploads/2019/08/home_appliance_consumption_table.pdf

Example; I want two lights, a refrigerator, internet, a computer, garage door opener, a phone charger, a CPAP machine, and a PlayStation game console and monitor. Combined, this amounts to about 2,000 peak watts, meaning if everything was on at the same time, the devices will draw 2,000± watts. Once you calculate your power needs, add 50% to that. So, for the above example, a 3,000 watt generator is a good size. A portable generator of this size typically includes two 20-amp outlets.

Here are 10 high rated portable power generators.

1. Prymax 300W Power Station – small, extremely portable, battery power source. \$269



2. Champion Remote Start – Wireless remote start, 3500W, 12 hour run time at 50% \$469



3. Champion 100263 3400W, Dual Fuel – one 30A, two 120V 20A, 12V DC outlet \$1,057



4. A-I Power 12000W, Electric Start, wheel kit included, built-in DC adaptor \$749



5. Wen 56200i Super Quiet, 2000W \$450



6. Champion 7500W electric start, dual fuel, gas or propane \$929



7. Westinghouse WGen 7500, transfer-switch ready. 16-hr run time \$899



8. Rainier R2200i Super Quiet Inverter 2200W, only 52 dBA \$ 425



9. DuroStar DS4000S 4000W, 7 Hp, air cooled, OHV engine \$375



10. DuroMax ZP12000EH 12000W, dual fuel, electric start wheel kit \$1,300



battery backup vs. portable generator

Refer to the chart below for a comparison of battery backup versus a conventional generator, including a review of factors like cost, fuel supply, size, features, and maintenance.

Tesla Powerwall 2



size:	13.5 kW
cost:	\$14,900 installed
fuel source:	solar / electric
fuel consumption:	none
voltage:	120/240 single-phase
surge watts:	7,000 peak
rated Amps:	30 Amps
decibel rating:	0
transfer switch:	automatic
warranty:	10 years
rechargeable from solar:	yes
monitoring app:	yes
indoor/outdoor:	either
maintenance:	none
run time:	varies / limited
tax credit:	-\$3,630
state rebate:	-\$2,800
10-yr operating costs:	\$0
10-yr energy savings:	-\$6,670
Total adjusted est. 10-year cost of ownership:*	\$1,800

Portable Gas Generator



size:	12kW
cost:	\$4,400 w transfer switch installed
fuel source:	duel fuel
fuel consumption:	1.0 gal / hr
voltage:	120/240 single-phase
surge watts:	15,000 peak
rated Amps:	50 Amps
decibel rating:	110
transfer switch:	manual
warranty:	3 year
rechargeable from solar:	no
monitoring app:	no
indoor/outdoor:	outdoor only
maintenance:	yearly
run time:	8 hours at 50% load, refillable
tax credit:	NO
state rebate:	NO
10-yr operating costs:	\$1,300
10-yr energy savings:	\$0
Total adjusted est. 10-year cost of ownership:**	\$5,700

* Total adjusted est. lifetime cost based on adding solar for 100% energy offset, and a single Powerwall. Does NOT take into consideration inflation, or any increase/decrease in grid energy rates, which would likely increase the peak shaving savings.

** Westinghouse WGen1200. Total adjusted est. lifetime cost, assuming the generator continues to run for seven additional years beyond warranty expiration, with no service or repairs needed beyond regular maintenance.