

# It's always good to have backup power

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Even in off-grid solar systems it is recommended to have a back-up generator. Having a Standby generator for your home is a wise move. With the grid becoming more and more unstable having a generator to keep the freezer operating may be as important as a furnace in your home.

Alternative Power is not just renewable. Having an alternative power source is important today. If you are on oxygen or need power for a freezer, a generator is the ticket.

Standby and back-up generators are permanently installed outdoors, much as an air-conditioning unit is. Standby and back-up generator operates on your home's existing fuel source — whether that is natural gas or liquid propane.

Different manufactures offer a variety of power system sizes and options to fit any requirement. Available from 8.5 to 150kW out-

put capabilities and higher, generators provide worry-free emergency power to supply your total electrical needs for days, or even weeks. In addition, unlike portable generators that require refueling every few hours, standby and backup power systems are fueled by a permanent LP or natural gas connection.

No hassle and no worries. Noise levels of generators vary widely, for every 10db points the noise level is cut in half.

The warranty that comes with generators is different among manufactures. Buying from a local dealer will usually insure good service. Always have a qualified installer so that the installation is cording National Electric Code. Price should not be the first consideration when buying a generator. Longevity and maintenance cycles can lower the actual cost of a unit.

Generators operate at either 3600 rpm or 1800 rpm. The 3600 rpm units are 2-pole machines and are of simpler construction, resulting in lower acquisition cost. Two-

pole generators are thus most convenient for use in relatively light duty applications that require less than 400 hours per year of operation. The 1800-rpm machines are 4-pole machines and are more expensive, but more common in larger sizes or heavy duty units.

Four-pole generators are recommended when more than 400 hours of operation per year are anticipated.

Generators come in many voltages. From 120 volt single-phase to 480 volt three-phase. Commercial applications usually will require a three-phase generator.

Most homes will run on a 120/240 volt single-phase supply. In order to interface with the utility an automated transfer switch is required.

On off-grid photovoltaic systems the transfer is done in the inverter so no transfer switch is needed.

There are several choices to consider when it comes to generators. For homes with little demand and small sized off-grid systems it

is recommended to use an 8.5 KW generator.

For larger systems such as double-stacked inverter sets or medium demand a 12 KW generator is recommended.

If you intend on running air conditioning and other large loads put in 20 to 30 KW generator.

Design life is how long a generator is designed to run. Most standby residential generators are designed for a 2000-hour life. The actual life depends on maintenance and the amount of load on the generator. Some have advanced digital control features like compact controller integrally mounted to the generator set. Most will have a remote start/stop capability. The thing to ask for when buying a generator is an isochronous governor to maintain steady-state speed at all loads and voltage regulation. For small to medium sized systems, these generators perform quit well. These generators run at 3600 RPM. If the generator is anticipated to run more than 400 hours per year, it is best to invest in a four-pole

generator.

There are many brands to choose from on the market. Gillette, Generac, Briggs and Stratton, Siemens and Kohler to name a few that are sold in the area. Gillette is the lowest cost but remember you get what you pay for in this world. Generac and Siemens are the same company and are identical except for color. Generac is a good choice for standby applications but is not good for off-grid back-up power. Kohler is the Cadillac. It has the most to offer whether standby or back-up power needs.

Weather your needing a standby generator or one for off-grid back-up choosing the right generator is important. It is better to buy a little larger generator than you think you need to cover those unforeseen loads. Check on warranty and installation when considering a supplier.

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