

BACK-UP GENERATOR SELECTION FOR HOME USE

Backup generators available for home use may vary with respect to size and function, from portable generators with temporary cord type connections to permanent installations wired with automated transfer switches. In general, generators are manufactured to operate using a variety of fuels, such as gasoline, diesel, natural gas, and propane. The size and type of generator selected will dictate the costs that will be associated with their installation and maintenance. The selection process will be largely driven by the electrical demand of appliances and electrical/HVAC systems in your home, as well as the desired ease of operation. It is recommended that a licensed electrician be consulted to guide you in the selection process to ensure that all factors are considered and an appropriate selection is made.

Portable gas powered generators are readily available for retail purchase, and may range in cost from roughly \$400 to \$1,000. Generators are rated by their electrical output, normally measured in kilowatts (KW). For most homes a 4-6 KW portable generator will be sufficient to operate essential systems and appliances on an emergency basis, however, this type of generator has functional limitations. Fuel tanks may have to be refilled several times per day if run continuously at rated load. They may not be suitable as a long-term power backup given operational restrictions and inability to power the full electrical demand of a typical home. Air conditioners, as an example, may not be able to be operated by a portable generator due to the significant electrical demands associated therewith. Most kitchen appliances however could be operated. Hazards associated with operating portable gasoline engines must be considered.

Permanently installed standby generators are typically fueled by natural gas or diesel, and can be sized to supply enough electricity to meet the full demand of any home. As compared to portable generators, permanently installed units differ with respect to installation, operation and cost. A permanent standby generator is permanently connected to both the house electrical wiring system and the fuel source, therefore is not portable. It can start manually by a push of a button or automatically. Costs for permanently installed generators are largely dependent upon the house size and level of electrical demand necessary. Typical ranges of cost which may be expected are in the \$3,000 to \$10,000 range.

Permanently installed systems are typically fitted with an auto-transfer switch which can sense a power outage, isolate your electrical wiring or designated emergency circuits from the grid, and start the generator. When power is restored, such a system will connect the house back to the utility lines and will turn itself off. Installation of such systems is complex and will require a licensed electrician, along with the issuance of electrical permits by the municipality. Portable generators which connect via permanent wiring to the electrical panel may also require the issuance of electrical construction permits, however to a lesser extent.

As with any equipment, adequate preventative maintenance is necessary to ensure long term operation of a portable or permanent generator. When choosing which type best fits your needs consider cost, function, operating & maintenance expenses, and impact on home value.