

Portable Electric Power: Tips and Tricks

A portable or backup power generator is a handy household utility that has been growing in popularity among homeowners in recent years.

Manufacturers are producing quiet, lightweight models that are convenient for recreation and emergencies.

The Copper Development Association has gathered some tips for buying and using power generators at home.

Safety First!

The power source for an electric generator is an internal combustion engine running on fossil fuel. It should be operated outdoors well away from open windows, just as one would operate any engine. Provisions should be made for safe storage and handling of fuel. Electrical connections should be installed in accordance with local electrical codes and manufacturers' recommendations. Use

the generator only for those purposes for which it was designed.

Transfer Switch

To feed backup power through your home's circuit-breaker panel, the safest way is to have a qualified electrician install a transfer switch. With a transfer switch, electricity can be distributed safely to the power outlets of your home, instead of relying on long extension cords. It also avoids the danger of sending your backup power back up the utility's transmission lines and may avoid a shock hazard. Never attempt to power the circuit-breaker box from an extension cord, and never plug the generator into an outlet!

Right-Size Your Generator

There are many sizes and types of generators. A few factors to consider are quietness, fuel capacity, portability (size

and weight), type of power (AC or DC), cleanliness of the power (power quality) and power output.

Truly portable generators typically are rated for only 1,000 to 1,500 watts. These generators weigh only 30 to 50 pounds, not including fuel, and some can be carried like a suitcase. They are perfect for providing power during camping trips, recreational activities or outdoor community gatherings to power devices you would plug into one outlet, but they are inadequate for backup power throughout a home.

Mid-size generators typically output 3,000 to 6,000 watts. They are mounted on carts with wheels and can weigh several hundred pounds. Fuel tanks typically hold four to six gallons, which can last 8 to 15 hours depending on the power load.

Some homeowners want uninterrupted power at high output levels in

the event of an emergency. Large generators are often powered by natural gas and installed on a concrete pad.

An overloaded generator can be worse than no generator. Generator output should be carefully compared with the loads. It is also important to properly size any extension cords in use with a generator. In summary, generators should be right-sized according to needs, with 3 to 8 kilowatts typically a minimum for household use.

For more safety tips, see www.cpsc.gov/cpscpub/pubs/portgen.html or www.usfa.fema.gov/safety/co-generator.shm. For more information on specific brands of generators, you can search the Internet using combinations of the following keywords: *household, backup, standby, generator* and *brands*. For general information about copper for building wire and power quality, visit www.copper.org. **HP**