

# Getting Generator Electricity into the Home

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During the infamous Eastern ice storm of 1998, people went running out and bought every generator available and set them up to power something in the house during the extended black-out. Many of those efforts created great problems for the utility because homeowners were often feeding electricity back into the downed wires, something very dangerous for the line workers trying to reconnect the power lines.

## SIZING YOUR GENERATOR TO YOUR NEEDS

Before even buying a generator, figure out what you want to power during an emergency. A small generator could supply some basic lighting and you could even use long extension cords to run the frig for an hour, then the freezer for an hour and maybe even the TV. Having a small generator means you will be sharing a limited resource, moving cords from one appliance to another as needed within your power supply limit.

A slightly larger generator would be capable of powering all of that and the furnace fan motor and controls giving you the full force of heating from a gas or oil furnace -- but you would need to have some special wiring set-up because you can't just plug your furnace into an extension cord. Some generators can even provide 240V power, giving you the possibility of moderate use of your electrical oven and/or the electrical water heater. Define your necessities, then add up the power required -- decide what you want to use all at the same time, and what you could switch in and out (like EITHER your stove OR your hot water tank -- you don't really need those two energy hogs to run at the same time).

With an all electrically heated house you will have to choose some limited heating based on the size of your generator. You will not have the comfort of a fully heated house that you can get by running the moderate demands of the electrical components on a gas, oil or propane heating system. (Nobody told you that when you went "all electric", did they!) If you have all electric heat you will probably want to buy a big enough generator to provide a minimum of heat in the house, or install a new efficient wood heating device -- yes wood heating is still legal even in Montreal if it meets rigorous pollution requirements and there are now over 150 such accredited devices available.

## THE GENERATOR MUST STAY OUTDOORS

Gas or propane fueled electrical generators must stay outdoors. You wouldn't run your car in the kitchen -- and you don't want to run a generator in a closed garage either. So the challenge is how to get the power from the generator into the house where you need it. Since power keeps going out with our wild weather changes, many new products have come on the market to get the power into the house without running an extension cord through a window.

## THE THROUGH THE WALL DIY SOLUTION

At least one company has made a simple solution of an outdoor plug box to plug in the main line from the generator then a PVC pipe through the wall to an indoor 6 plug outlet. Then you play with extension cords from there. The Reliance Controls Portable Generator Through-The-Wall Kit is available at both HomeDepot and Home Hardware for around \$150 to \$200. Because you are not touching household wiring with this device, it is legal for anyone to install it in their home -- legally it is just an extension cord and does not energize any of your household wiring.

## USING HOUSEHOLD WIRING

It would certainly be much more convenient if we could power at least a selected few of your household circuits with the generator. The Electrical Code now forbids connecting a generator

directly to any household circuit unless it is done through a special device called a "transfer switch". Without the transfer switch, connecting a generator to household wiring could send electricity back to the utility power lines and possibly shock the guy trying to fix the downed line, or it could actually feed into your neighbour's house which happens to be on the same side of the transformer as you -- and their demand would certainly blow all the overload safety devices on your generator. But installing a transfer switch generally requires permits and especially a licensed electrician.

So, what does a transfer switch do?

Depending on the size of the generator you have and the number of lines you want to load onto it, you redirect the wiring for from one to six or eight lines in your house from the circuit breaker box to the transfer box. Now the transfer switch will feed electricity from the utility to that line, or from the generator to that line, but won't let the two cross over. If you are using the generator and the power comes back on from the utility, you will need to go back down to the transfer switch and switch the source from the generator to the utility. You could get an automatic transfer switch that does the switching for you when the power goes off, or comes back on. You can even get a generator that starts automatically when the power goes out. The key is that they can't hurt each other, or anybody else. The advantage is that once switched over to the generator, the chosen lines function normally, light switches work, things don't have to be plugged in or switched from one place to another. Transfer switches cost from \$300 to \$500, maybe another hundred or two for an electrician to install it -- or more if the wiring gets complicated. If you have purchased a generator, this is the missing piece to put that generator into service quickly and safely whenever you need it. You can now buy a wide variety of transfer switches in stores, but it is generally not legal for you to install it yourself because this is really playing with the mains box and household wiring. No mistakes allowed.

[Click here for information on the LEGALITY OF DIY ELECTRICAL WORK.](#)

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