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Power Outage Strategies

By the time you're reading this last weekends storm has come and gone. That said, I'm sure many of us are still waiting for PG&E, phone and cable service to get restored. So it seems like a great time to bring up a few alternatives for dealing with power outages beyond candles and kerosine lamps.

The most common approach I see used at homes and businesses is a gasoline, propane or diesel powered generator. A transfer switch is used to transfer power feeding the house from PG&E to the generator. If a home only needs a few thousand watts and doesn't need 240 volt power, Honda makes a very quiet and efficient generator. They come in 1000, 2000 and 3000 watt sizes and feature a built-in inverter. The inverter helps it produce very clean power and, in combination with the "eco-switch" feature, varies the power produced – and gas consumed – to match the power you need. It's also fairly quiet compared to many other models.

Another approach used quite a bit in Nevada County is a solar system with battery backup. We've installed many such systems and I have one for my own home. When PG&E goes down our system keeps the house powered with no interruption. After several days of no PG&E, I'll fire up the 2000 watt Honda generator we have connected to our system if the sun hasn't come out yet. It only needs to run for just a few hours during the day to top off the batteries and power the house, so we can leave it off and have things quiet overnight. A solar system with batteries allows us to operate reliably and quietly during a power outage as well as sell power back the rest of the time.

When PG&E is available our solar system sends whatever excess power we're making back to the grid. Our total electricity cost for the last 12 months was $130, which isn't much considering I drive an electric vehicle! The previous two years it was actually -$50 (minus fifty dollars) but this past year has been less sunny than average. The best part of a system like this is the money it has saved us. The loan payments we make every year on our system are less than what we would otherwise be paying PG&E. And on top of that, we're paying less and less every year because we have a low fixed loan payment whereas PG&Es electricity is going up about 7% every year!

Our home is located at about 3300 feet elevation, so this past storm brought lots of snow along with the commensurate power outage to the neighborhood. The top of a huge black oak broke off in our neighbors yard, landing atop our PG&E, cable and phone lines, bringing them all down to the ground. So even after PG&E has power restored to the neighborhood it'll probably take a few more days to get our homes outside services hooked back up. But that's fine with me because once the sun comes out our solar panels – not the generator – will keep us humming along!

I've also installed systems just like mine but without solar. They can provide emergency power to an entire home or business and the generator only needs to run part time. They also have the high quality power provided by the inverter, better than most inexpensive generators alone, making these systems

ideal for use with sensitive electronics like computers.

There is an even simpler and less expensive approach to backup power as long as you don't need much and are willing to keep an eye on things. Before I purchased my large solar system I had a small 12 volt DC system consisting of two deep cycle batteries, a battery charger, a battery meter and some wiring. All we needed was enough power to run the small 12 volt DC pump for our hydronic radiant floor, a few 12 volt lights, and a 12 volt radio/TV (back when antennas still worked) so we could get the news. I installed a few 12 volt outlets in the house so we had a few options for plugging in. The whole system was less than $500 (excluding radio/tv. lights & pump of course) and that included a meter so I could see how much power was left in the batteries. I added a small "pocket inverter" later so we could plug in the refrigerator, and a small solar panel for those days when the power didn't come back on again right away. But the total cost was still under $1,000, quite a bit less than a generator, and there's no messy, stinky gasoline to deal with.

This might sound a bit odd, but I always enjoy snowy winter days when the power goes out. It's an opportunity to make my own power, proving I don't need to rely on PG&E. I enjoy keeping an eye on the meter that tell me how much power I'm using and how much I have left. I like the challenge of tailoring my use to live within my means. There's just something comforting about knowing you can sustain comfort and fulfill needs with any number of backup power options!

Ray Darby is President of Sustainable Energy Group Inc., a Grass Valley company offering energy efficiency and solar services for residential and commercial buildings, from comparing the alternatives through installation and servicing of energy systems of all types. You can reach him at 530-273-4422, via email RayDarby@SustainableEnergyGroup.com, or visit their web site at www.SustainableEnergyGroup.com.