

Different Sameness

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Several people who have visited our off-the-pavement, renewable energy powered home have made the comment, "If you hadn't told me, I wouldn't know this was an off-grid home." You would think that our lifestyle is unique enough that someone would notice right away. I pondered this. What do we do that is actually different from a utility-dependent home?

First Impressions

When you first walk into our house, there are no immediately obvious clues that we are using renewable electricity. Computers, desks, printer, and fax machine wrap two walls of the office/dining room. (Our friend Ernie says it looks like a NASA control room, with our office chairs lined up at the computer monitors.) So, we have a typical home office.

The half wall between the dining room and kitchen displays three digital meters. That might be the first clue that this is not an ordinary house. We have an Outback Mate, a TriMetric 2020, and a Xantrex Link 10. If possible, we like to incorporate the products that we sell into our own renewable energy (RE) system. This allows us to see how they perform in daily use. By glancing at the meters, I can tell the battery bank state of charge. If the batteries are at 100 percent, I do laundry or run the dishwasher—my biggest energy loads. To a degree, weather determines my housework schedule.

The fridge might be your next clue that our house is off-grid. If you look to the third wall of the room, you will see my 14-year-old, hedgerow green, Sun Frost RF-16 refrigerator/freezer. When I bought my fridge, I found out that you could choose from about a hundred different colors besides white for no extra charge. That's pretty unique, and so is the color of my Sun Frost. It is in the dining room because the only space for it in the kitchen was right next to the stove. Hot box next to cold box—not a good idea.

The Sun Frost is 34.5 inches wide, 62.5 inches tall and 28 inches deep (88 x 159 x 71 cm). It is so tall because it sits on a matching 13 inch (33 cm) base cabinet. It has an imposing presence. It is a 12 volt model because our RE system used to be 12 volt. When we acquired a wind turbine and a Trace SW4024 inverter (serial #37), Bob-O changed the system voltage to 24 volt (see *HP41*). Our system changes often as Bob-O tests new equipment, but the availability and quality of our electricity has always been good and keeps getting better.

A big difference from other refrigerators is the uncluttered outer appearance of the Sun Frost. Since it is covered in Formica, it will not hold refrigerator magnets. I really wanted some poetry magnets when they came out. But, alas, it was not to be.

Down in the basement, where it is perpetually cool, I have a white Sun Frost F-10 freezer. A 24 V model, it has 10 cubic feet (0.28 m³) of space. Bob-O built a base for it. Since the motor and compressor are on top, the F-10 is very low to the floor without a stand of some kind.

La Cucina

In the kitchen, everything looks like a regular home. Scatterings of fridge magnets are displayed on the front of my black Asko automatic dishwasher. The dishwasher is Swedish. It is very efficient, with low electricity and water consumption.

It contains its own heating elements for the water, as do most European appliances. It has manual switches for using the water temperature boost and heated fan drying options. I mostly leave both of those switches off. This dishwasher could easily be in a utility-dependent home. It is not a specialty item for the RE market. Its uniqueness is in its efficiency, not its appearance.

We have a mid-sized microwave oven. Again, it is an off-the-shelf model. I believe we found it on sale. Nothing noteworthy there. My black enamel range is a propane Peerless Premier. It looks and is quite normal. There are four burners with a griddle in the middle. A really nice feature is that by taking out the griddle and its cover, I can replace it with a fifth burner setup. That comes in handy during canning season or when I'm using the big wok.

Again, the special attributes of my stove are not immediately apparent. It is one of the few brands of ranges that do not have a glow bar to light the oven. (A glow bar is an electric element for preheating a thermocouple. The thermocouple regulates the flow of gas—off or on. Once the thermocouple is warmed by the glow bar and the gas is on, it is lit by electronic ignition.) Unlike most stoves today, the oven can be lit with a match. I do not use matches. I use the electronic ignition. It is a gas range, but the clock, timer, and ignition are electric. The range electrical consumption totals about 2 watts while on.

I only turn on the stove when I cook. Between the microwave and the range is a wall-mounted plug strip.

Plugged into this are the range, the microwave, and a fluorescent light strip. When I am cooking, I turn on the plug strip. The light comes on automatically and all the features of the range and microwave are available to me.

Curse of the Phantom

This brings us to the subject of phantom loads. Anything in our home with a clock or “instant-on” feature is on a plug strip. That means the two TVs, DVD player and VCR, stereo system, the microwave and range, the three computers, printer, and satellite connections.

Our two wall clocks and my bedside radio are battery powered. Any appliance that has a rechargeable battery is unplugged after it is charged. We use them until the battery has completely discharged, and then plug them in again for full recharge. These include an electric toothbrush, the camera and drill battery rechargers, and a small electric broom. Many of these appliances have nickel cadmium (NiCd) batteries in them with a charge memory. If you recharge them before the battery is fully discharged, they may charge only to the level of the previous charge.

Water Course

Some special instructions come with using water in our house. We use a Myson, tankless, demand water heater. It uses propane and has a pilot light. Our large water heater tank also uses any extra electricity to heat water when our batteries are full. When water flows from the tank through the demand heater, it is checked for temperature. If the water is above a certain temperature, the demand heater does not turn on. The flow rate must also be above a certain rate for the burners to light.

What this means is that during some periods of the year (times with lots of sun and wind), the water can be very hot coming from the faucet. At other times of the year (when sun, wind, and water in the creek are not so available), the demand heater kicks in every time.

The upshot of this is that when you want hot water, you turn the hot water tap (in the shower, or any of the sinks) all the way on and use the cold water tap to regulate the heat.

Guests need a few more instructions before using our bathroom. We use a Sealand one-pint flush toilet. It is a ceramic toilet with a trap door. It is a type used most often in RVs. After you flush, the trap door closes and a pint of water is released into the bowl. A foot pedal on the side of the toilet opens the trap door. By raising the foot pedal, you can fill the bowl with water to the desired amount.

Sometimes a pint works; sometimes you need more. I have a framed set of instructions above the toilet. When you are standing, looking at the toilet, they are at eye level.

Wash Day

I have had a Staber washing machine for ten years or so. It was the first top-loading, horizontal-axis washing machine available. It is very efficient on electricity and, just as important for us, on water. It uses very little soap and does a really swell job. It is rather loud, but it is in the basement, so I don't care.



Kathleen with her trusty, 14-year-old Sun Frost fridge.

My clothes dryer is a Frigidaire Gallery. It is gas (propane) powered. It needs electricity for the timer, tumbler motor, and inside light. It has a glow bar to ignite the gas, but it only comes on long enough to heat the thermocouple that starts the gas flow and lights it. In the summer months, I use my solar clothes dryer (clothesline).

Light Lite

Of course, all of our lighting is compact fluorescent bulbs. We have been using CFs since they were big bulky things that wouldn't fit in a regular lamp. Now we see them everywhere. Stores, motel rooms, and many people's homes sport these efficient lights. We've found that a selection of compact fluorescent lights is a perfect housewarming gift for on or off-grid friends.

So What's Different?

After all this pondering, I have come to the conclusion that it is not obvious that we are off the utility teat. Everything we do can be done in a utility-dependent home. No magic here—we are just efficient with our energy use.

I'm sure some people are thinking right now that we have a lot of appliances and electronic gear. Couldn't I really

just wash the dishes in the sink like I did every other day in my childhood? (My sister Mary washed them the other days.) Sure I could. And if we are low on energy, I do. But if we produce electricity and I don't use it, the fact is, I am wasting it. I don't like wasting energy.

Off & On

Energy efficiency is an integral part of an RE system. If you are on-grid and wanting RE, train yourself to be as efficient as possible. It's good practice, and the money you save is like not paying interest on your credit card.

Turning out the lights or TV when you leave a room is a simple habit to acquire. Turning on a plug strip before you turn on the appliance becomes second nature. Gazing out the window at the weather before deciding a course of action is a good thing. Energy conservation is the key to a successful renewable energy system. Go with the flow—of electrons, that is.

Access

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