It's Easy to Track Your Energy Usage at Home

BY JAMES DULLEY

Dear Jim: I try to get my family to make life-style changes to reduce our maximum electricity use, but it's tough. It may help if they can see how much is being used. What are my options to accomplish this, and what are the savings? - Ronald K.

Dear Ronald: It is surprising how some minor life-style changes can impact the amount of energy your home consumes. This is not only a matter of saving money on your utility bills, but it is also important for your family's future. As our lives and our homes become more and more dependent upon electricity to function properly, conserving energy from all sources is a wise move.

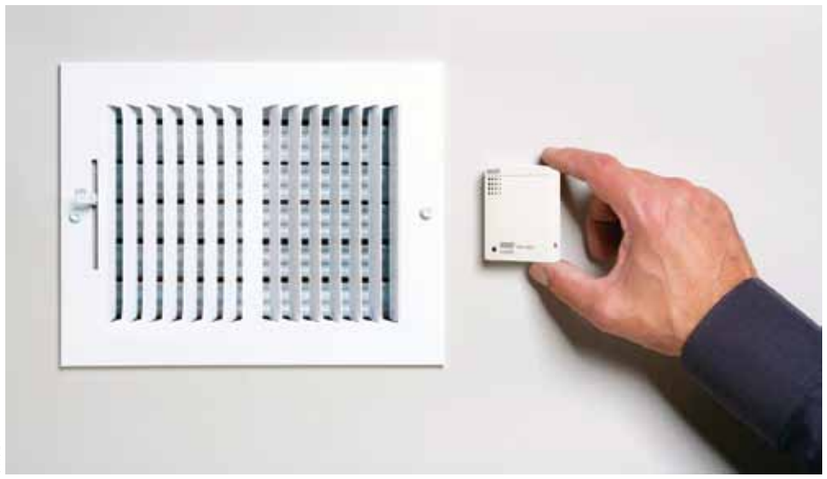
Another key reason to reduce electricity consumption is controlling what's called peak demand. It's like rush hour for the electric grid–the time of day when folks come home, switch on lights, crank up the air conditioner, and start bustling around the house. If you want to always have electricity available, your electric cooperative has to have enough electric generation capacity to meet this peak consumer demand. And since building a generating plant is extremely expensive, using less electricity overall can eliminate or delay the need for more plants, keeping electric rates down.

QUICK TIP

Being more energy efficient at home starts with an awareness of how electricity is being used. A number of new gadgets can help.

In order to trim energy use in your home, Ronald, it may help to first educate your family on which electric devices use the most electricity so they can minimize the use of these devices. Generally, any appliance or device that creates heat uses the most electricity. Some devices, which do not have heating as their primary purpose, may surprise you with the amount of heat they put out (essentially a waste of energy). Incandescent light bulbs are a good example. You might consider labeling some of these devices with a red sticker to remind everyone of the major electricity consumers.

If you have an electric meter with a visible spinning wheel, switch on various appliances while your family members are watching the meter. It is pretty impressive and it may create a lasting impression when they see how much the wheel speeds up when you switch on a hair blow dryer or the clothes dryer. Switch off all nonessential appliances to see how slow you can make it go.



ONSET

This wireless temperature and relative humidity data logger is mounted near the wall register.

As a next step, a number of new energy management devices are available to help monitor and control the electricity used in your home. The simplest ones basically accomplish the same goal as watching the electric meter.

An example is the Power Monitor by Black and Decker. This is a two-piece system: a wireless sensor attaches to the electric meter outside, and a small digital display is kept inside to relay the meter reading. Local electric rates can be programmed in to accurately calculate the real time cost in dollars. In order to see how much a specific appliance costs to use, just switch it on and watch the display to see how much more electricity is being used. These work on most electric meters, but not all, so check their web site for compatibility.

Another, more expensive example is TED (The Energy Detective) by Energy, Inc., which operates in a similar fashion except it senses electricity use from current transformers (CTs) on the circuit breaker panel. There are two TED models: the more advanced "TED 5000" can be monitored from a personal computer or even a mobile phone, taking all the mystery out of how much electricity your home is using at any given time.

More advanced energy management systems have wireless sensors on electric and gas appliances. The main control unit and display compiles this information so you can program and control the electricity use of each appliance. If there are problems or excessive energy use alerts, these systems can send out notifications by email or text message.

These sophisticated systems are particularly effective in areas with time-of-use rates because they can run appliances or change thermostat settings based on the local rate structure, ensuring that electricity is used when rates are low. Many of these "smart" devices communicate with each other using ZigBee communication protocol. This allows components from one energy management company to function with another company's components.

ENERGY, INC.

A small portable monitor shows the real-time electricity usage and the dollar cost.

Some electric utilities are installing smart electric meters which allow two-way communication between the utility and the home meter. This can be used to lower peak demand: through a voluntary program, the utility can be allowed remote access to switch off a water heater or lower the thermostat when system-wide electricity use is at its peak. In return, the utility typically compensates the homeowner by providing free maintenance of the appliance or may adjust electric rates. **KCL**

Have a question for Jim? Send inquiries to: James Dulley, Kansas Country Living, 6906 Royalgreen Dr., Cincinnati, OH 45244 or visit www.dulley.com.

> "By actually seeing how much energy we're using, it could help us conserve."

WHERE TO SHOP

The following companies offer energy management devices and control systems:

- Agilewaves, 650-839-0170, www.agilewaves.com
- Black & Decker, 800-544-6986, www.blackanddecker.com/energy
- Control4, 888-400-4070, www.control4.com
- Energy, Inc., 800-959-5833, www.theenergydetective.com
- Onset, 800-564-4377, www.onsetcomp.com