

Getting some feedback can help you save your energy costs

Published Monday August 22nd, 2011

A school near my home recently installed a radar speed sign. It's posted where the school zone begins and shows the maximum speed drivers are supposed to go during school hours. But it also includes a radar gun that measures the speed of vehicles as they approach and a display that indicates their speed. If drivers are going over the speed limit, the display flashes rapidly until they slow down.

An amazing thing about the sign: it works, consistently. Most drivers are going too fast as they approach, but their brake lights come on as soon as they see their speed flashing back at them, and by the time they enter the school zone most are no longer speeding. It's a perfect example of the power of feedback in changing behaviours.

Feedback on energy consumption

Bob Gilligan, vice-president of GE Energy, has been quoted as saying, "Today, most consumers live in a black hole when it comes to information about their energy consumption and costs."

It's mostly true. The average consumer has very little idea of the power consumption of their home or the things inside it, because we get only one form of feedback: the monthly bill. It tells us our total usage, but provides no hint as to where that power was consumed. It also arrives a month after consumption has happened, when it's too late to do anything about it.

The same goes for vehicles. Most of us have only a vague idea of how far we go on a litre of fuel. (Kilometres or dollars per tank are largely meaningless because different vehicles have different-sized tanks and fuel prices change.)

But just as drivers slow down when they see a flashing radar speed sign, research has shown that we'd use less energy if our homes and cars gave us instant feedback on what we consume. As a result, many companies are working to develop feedback tools that can help us save a lot of energy and money. Here are just a few examples.

Home energy monitors

A home energy monitor is a wall-mounted device that displays a readout of the amount and cost of power being used at any given moment. In other words, it provides instant feedback: If you turn on a power hog like a clothes dryer, you'll see dollars and kilowatt-hours flash by on the display in real time. Before long, you'll have a pretty good idea of how much everything uses and what's really running up your bill, and then you can take action. It's estimated that home energy monitors can result in power bill savings of up to 15 per cent.

Some meters, such as GE's Energy Monitoring Dashboard, must be wired directly into new homes. Others, such as the PowerCost Monitor by Blueline Innovations of Newfoundland (www.bluelineinnovations.com), are available at hardware stores and can be installed easily in any home.

In the future, you'll be able to monitor and adjust your home's power consumption from anywhere using an online service such as Google's free Powermeter (www.google.com/powermeter/about).

Vehicle fuel consumption monitors

Driving style has a huge impact on fuel consumption, but without instant feedback, it's difficult for drivers to know what habits improve mileage and what habits kill it. Fuel consumption monitors can provide that type of real-time feedback. The Toyota Prius was one of the first vehicles to feature such a monitor, displaying consumption in real time on its dashboard alongside the usual gauges. Tramp on the gas, and the display instantly shows how your fuel consumption doubles, triples or worse. Ease off and coast, and the display shows that that style of driving will get you over 100 miles per gallon. That's why Prius owners very quickly learn what driving techniques save them gas and money, and often beat the vehicle's official fuel consumption rating.

It's estimated that fuel consumption monitors could save most drivers 10-20%. Nissan has become the first automaker to offer them in all of its vehicles, and most automakers offer them in at least a few models. Car specialty shops offer monitors that can be installed into most vehicles.

Feedback works

Ever get a cash bonus for some particularly good work? Ever choose one gas station over another because the posted price differed by one-tenth of a cent? Feedback is a powerful tool to change human behaviour.

To quote a recent Wired magazine article on the subject, "managing personal energy consumption could be the difference between a climate under control and one beyond help"

All the more reason to surround ourselves with as many forms of feedback as possible: to help us understand our energy consumption, and then take action to reduce it.

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