

There is a solution to energy-gulping always-on TV boxes

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So your TV show's over. You pick up the remote and press the button. Everything's off, right?

Not by a long shot. Possibly not even if all the little red lights are off.

A new report shows that the set-top box in particular - the device that translates the signal from the cable, satellite, or other provider - keeps on guzzling power.

And lots of it. In most cases, the report from the National Resources Defense Council found, the set-top boxes used almost as much power when they were off as when they were on.

Over the course of a year, the total power use of some set-top configurations exceeds that of the big-screen TV they're attached to. Or a newer-model [refrigerator](#).

Although the industry is promising improvement, at the moment there's little an energy-conscious TV-watcher can do other than physically unplugging the thing - and putting up with a delay when you turn it back on.

The NRDC report estimated that Americans are spending \$3 billion a year to power their set-top boxes.

Roughly 80 percent of [households](#) in the United States have some form

of paid TV, and when you sign up, choices about which box to get are limited.

The report found that the typical configuration of a high-definition set-top box paired with a high-definition digital recorder uses more power than a 21-cubic-foot fridge.

But that wasn't the worst of it. When the researchers went into 50 homes and hooked up [energy](#) meters, they found that pressing the "off" button on the remote didn't do much to stem the flow of electrons.

"The aha moment was realizing that hitting the power button does next to nothing," said Noah Horowitz, senior scientist for the New York-based nonprofit. "All it does is dim the clock."

If the box uses 30 [watts](#) of power when it's on, it might use 29 watts when it's "off."

The homeowners were horrified, Horowitz said. "Without fail," he related, everyone thought that they were shutting down the power.

Instead, they were adding \$25 to \$50 to their annual energy bill.

The NRDC scientists estimated that of the \$3 billion a year to power all these various boxes, \$2 billion was expended when they were supposedly off.

"These set-top boxes seem to be the biggest insomniac in the home," Horowitz said. "They never go to sleep."

He figures it's because there's no incentive for change.

The federal government has devised Energy Star standards for the boxes,

and those that meet the standards (listed at www.energystar.gov) are an average of 30 percent more efficient.

But Energy Star doesn't address having an "off" button that means what it says. And since neither the manufacturer nor the signal providers are paying your electric bill, do they really care?

Horowitz thinks they should. In an era of declining resources and increasing concern about climate change, energy efficiency is paramount.

The typical home has myriad devices that consume power all the time - a gaggle of power-hungry microwave memories, stove-top clocks, cellphone chargers. Basically anything with a digital clock, a remote control or a little red indicator light.

This is also called standby power. It's the trickle of electricity required to make sure the machine remembers the time and date, not to mention you, your remote and your preferred settings.

The latest estimate from scientists at the U.S. Department of Energy's Lawrence Berkeley National Laboratory in California is that the average home has 40 products consuming standby power, accounting for 10 percent of residential electricity use.

Set-top boxes are among the greediest, because they perform many of the same functions whether they are on or off.

But they do vary. In its test of 50 homes, the NRDC found some "streaming devices," which don't do much other than accept the signal and adapt it, consume less than 10 watts.

But the top-consuming digital video recorder used nearly 55 watts when

it was on, and just over 50 when it was "off."

Representatives of Comcast, Verizon and DirecTV said that they offered customers in this region many models and that it was impossible to come up with a "typical" energy draw.

Nevertheless, "this is something the entire industry is looking at," said Comcast spokeswoman Jenni Moyer. She said the company was working closely with its equipment providers to increase energy efficiency.

With the exception of a few older receivers that have been refurbished, DirecTV's 2009 and later models are Energy Star-compliant, said spokesman Robert Mercer.

In October, DirecTV plans to launch a receiverless scenario - no set-top box needed - that would further reduce energy consumption, Mercer said.

Verizon also has been testing new delivery modes - Blu-ray players are one example. Another improvement, called an IP media server, would deliver service to as many as six TVs or other devices in a home, said spokesman Lee Gierczynski.

The NRDC's Horowitz would like to see things move a little faster.

Europe is already way ahead. There, Sky Broadcasting offers a high-definition recorder that draws 23 watts in "on" mode and just 13 watts when the user initiates "light sleep" mode.

Every night at 11, the boxes default to a "deep sleep" mode (unless the user overrides it) that consumes just 1 watt and requires only 90 seconds to become fully awake again.

Meanwhile, what's an American viewer to do?

Ask the provider for an Energy Star-compliant box, for one.

Or, as some committed folks are doing, simply unplug the thing. Or get a power strip with a switch. A variation of that is a "smart" power strip: Plug the TV into the "control" outlet on the strip, and when the TV shuts off, the whole strip goes dark.

The providers don't recommend any of this. They say that if the box is fully off, it will miss updates that the box must download when the power returns, causing a delay.

And, oh, aren't we an impatient lot!

But here's a report from the Kennedy household in Swarthmore:

Don Kennedy cares about energy use. He recently quit his information technology job an hour's commute away so he could take one at a food co-op nearby - and ride his bicycle to work.

Last month's electric bill shows that he and his wife used just 306 kilowatt hours - about one third the national household average. They've made several changes to save energy, but a key habit, he said, is "we remember to turn things off."

Including their lone TV and Comcast set-top box, on a wheeled cart with an umbilical cord to a [power](#) outlet. When they're not watching, it's unplugged.

Kennedy recently timed what happens when he reconnects:

Immediately: All channels available; channel number displayed when

changing channels.

After six minutes: channel name displayed next to number.

After 10 minutes: name of program displayed.

"We only watch a few channels anyway," Kennedy said. "What you lose is the frills, not the necessities."

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