Counterflow

By Steve Huntoon

Vampire Power

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This ad from the local utility caught my eye. It's from Delmarva, a subsidiary of Exelon, the largest utility company in the country.[1] The idea is to unplug appliances not in use so as not to use electricity in "standby" aka "sleep" aka "idle" aka "inactive" aka "phantom" aka "always-on" mode. Vampire power.

Who wouldn't want to learn more? So I went to *delmarva.com/peakmd*, and from there to the details page, where the first specific tip is: Unplug unused electrical devices when you leave a room. Chargers use energy when left plugged in, even after your device is fully charged.[2]

Chargers? Really?

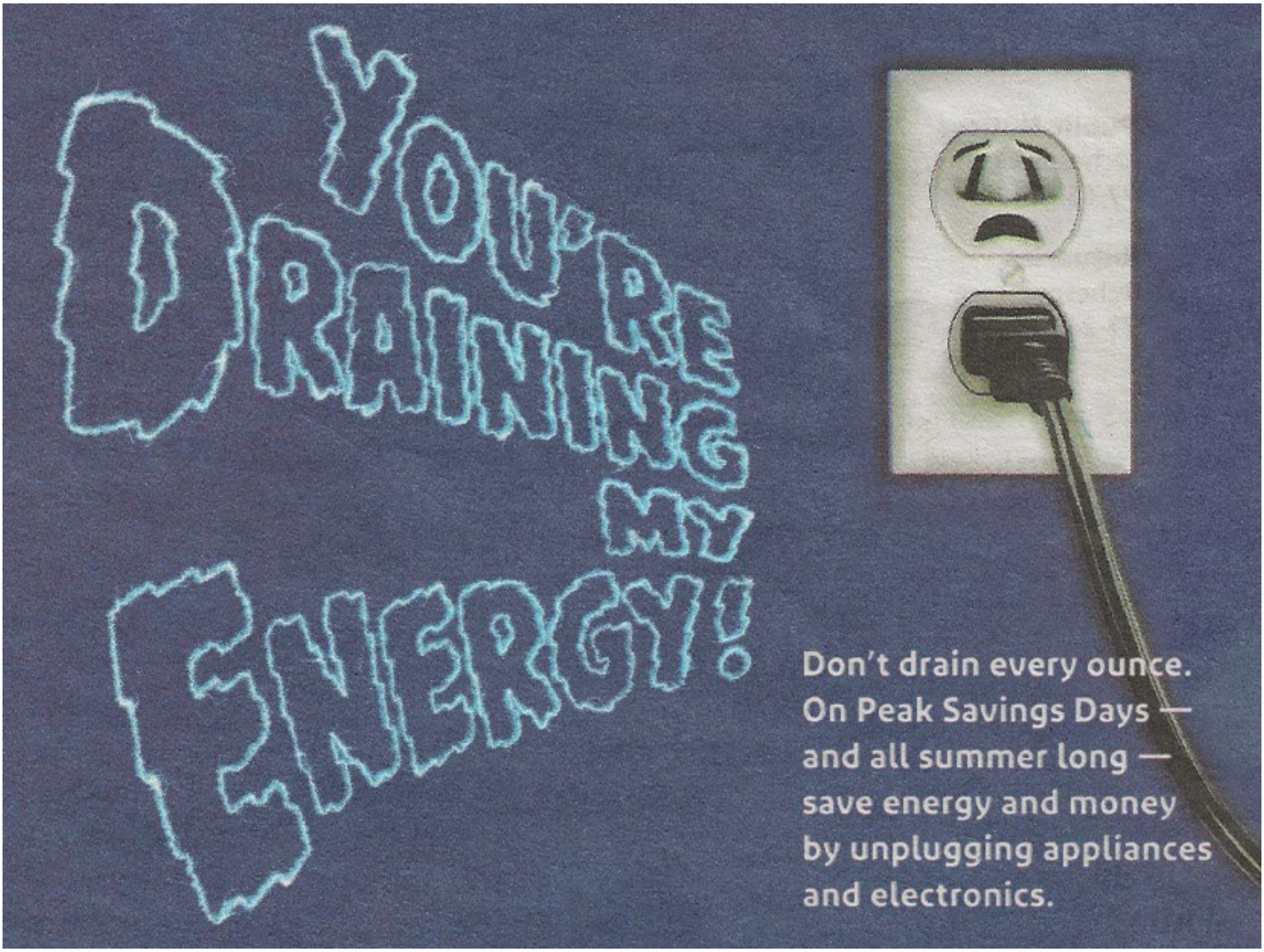
With a little Googling I came across an amusing article putting this premise to the test with a power meter.[3] Each charger registered 0 watts. Adding various chargers to a power strip didn't register more than 0 watts until the 6th charger. The reading with 6 chargers? 0.3 watts. As the article points out, that's 2.6 kWh/year which at 13 cents/kKh is 34 cents a year. About 6 cents a charger a year.

Not to scoff at saving 6 cents a year from unplugging/plugging a charger every day for a year. But perhaps there are bigger vampires to slay.

OK, What Bigger Vampires to Slay?

It's said a zillion times on the internet that the Department of Energy reports that homeowners can save anywhere between $100 and $200 each year by unplugging devices not in use.[4] I can't find this DOE report (if you can please send me the link).[5]

It's possible that this range attributed to DOE might have its origin in a Natural Resources Defense Council study, which estimated average residential vampire power costs at



| *Delmarva Power & Light Co.*

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$165 per year.[6]

The study put power meters on individual electronic devices at a sample 10 homes in California. When you look at the details (Appendix C), you find that the big usages in "inactive" devices are for things like fishpond/aquarium pumps, refrigerators, furnaces, hot water recirculation pumps,[7] GFCI outlets, networking equipment (modems, routers), printers, alarm clocks, irrigation systems, garage door openers and security systems. In other words, not stuff you unplug (assuming you even could). By the way, there were an average of 65 devices per household using vampire power, so one can imagine the hassle of plugging/unplugging these devices on a daily or other routine basis (again, assuming you would or could).

One of the few things you might unplug when not using is set-top boxes. (TVs themselves consume very little power in stand-by mode.)[8] Is someone going to make a habit of unplugging set-top boxes? Waiting for a reboot every time it's plugged back in? Missing a show you wanted to record because you forgot to plug it back in? I think not.

In short: Big savings from unplugging vampire power are as much a fantasy as, well, vampires.[9]

Meanwhile Back at the Ranch

Missing from the Delmarva list is an easy way to significantly reduce electric usage: LED lighting. The math is something like 1,105 kwh/year for average residential lighting,[10] times 13 cents/kwh, times 84% for the reduction in electric usage from switching from incandescent to LED lighting, for about $120 per household. While LED lighting has dramatically increased since 2015, it's dominant in only half of U.S. households, so there's a long way to go.[11]

And LED lighting pays for itself in equipment savings alone (ignoring the electric bill savings) because it outlasts an equivalent incandescent by maybe 20 times while costing maybe two times as much.

Wrapping Up

There is reason to doubt the value proposition for customers to fund public service advertising by utilities. But where it happens, the least to ask is that utilities promote effectual and hassle-free ways to reduce electric usage instead of ineffectual and hassle-ladened ways. ■

[1] https://www.exeloncorp.com/company/about-exelon

[2] https://www.delmarva.com/WaysToSave/ToolsAndResources/Pages/EnergySavingTips.aspx.

[3] https://www.howtogeek.com/231886/tested-should-you-unplug-chargers-when-youre-not-using-them/

[4] https://questionanswer.io/does-unplugging-microwave-save-money/

[5] I emailed the DOE/Berkeley Lab expert on standby power but didn't get a reply.

[6] https://www.nrdc.org/sites/default/files/home-idle-load-IP.pdf

[7] It appears these generally come with sensors and/or timers that reduce electric use. https://homeinspectorsecrets.com/hot-water-recirculating-pumps/how-recirculating-pumps-work/

[8] https://www.latimes.com/nation/la-na-power-hog-20140617-story.html

[9] I'm not suggesting that makers of electronic devices shouldn't reduce vampire power. There's been progress on that front from voluntary and mandatory standards, and it should continue.

[10] https://www.eia.gov/consumption/residential/data/2015/c&e/pdf/ce5.3a.pdf (data is for 2015, before large penetration of LED lighting).

[11] https://www.ny-engineers.com/blog/us-energy-information-administration-47-of-homes-use-led-lighting

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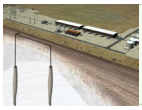

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