

Re: What do I need to conserve power on my old Linux box?

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- *From:* John-Paul Stewart <jpstewart@xxxxxxxxxxxxxxxxxxxx>
 - *Date:* Thu, 02 Nov 2006 20:23:22 -0500
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Moe Trin wrote:

On Wed, 01 Nov 2006, in the Usenet newsgroup comp.os.linux.hardware, in article <0onn14-j22.ln1@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>, John-Paul Stewart wrote:

It could still cost more than that...the above was just a best-guess estimate. I took a quick look at the SCE website but couldn't find any definitive rate information, just a lot of complex rate tiers. So your actual cost could be more or less than that. (Good luck deciphering your electric bill, though! If it's as hard to follow as the SCE website, you may never know!)

In the US, electrical rates (among others) are "set" by the individual states (usually something named approximately "Public Utilities Commission"). The idea is that the state is protecting the public from the monopoly of the utilities companies, while at the same time seeing that those companies get a "reasonable" price for their product. The companies propose various rates, and the state agency may (or may not) approve them. Some people like the idea, some don't.

It's not terribly different around here, aside from the names of the various regulatory bodies. Also, a lot of the "companies" involved are owned by the provincial government (the largest electricity generator, the operator of the provincial power grid) or municipal governments (local utilities). So it's one government body regulating a bunch of arm's length government bodies and crown corporations.

This is all specific to Ontario. Other provinces no doubt have their own way of doing things, but in most cases crown corporations are involved.

The rate plans always seem to include a base fee, and then the fee for the power used. This might be a flat fee per KWH, a progressive fee (increasing or decreasing) as a function of KWH, a "time-of-day" fee, or many other combinations.

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Here, there is the fee for the power used which is two-tiered (over/under a certain threshold) for residential and small business customers (which are defined as those using less than 250,000 kWh per year). On top of that are delivery fees, regulatory fees, and a "debt retirement charge" to cover stranded debt left behind after the government restructured things a few years back.

So it's just the four basic categories of costs. The distribution fee is set partially by the local utility but everything else is standardized across the province. All of the fees are overseen by the Ontario Energy Board AFAICT. (The Board similarly regulates the natural gas industry.)

There are no time of day fees or anything like that. Few electricity meters are equipped to handle that information. Progress is being made towards installing "smart meters" over the next couple of years to make that an option. That's driven largely by a need to reduce peak demand (which already exceeds peak generating capacity) to reduce the need to import power at peak times.

These different plans can make a very significant difference in the total cost to the consumer, and if your utility company offers a choice, you really should look at them, and run "what if" calculations to see which plan is best for you. One size does NOT fit all.

You can opt to purchase a fixed-rate, multi-year contract with an energy supplier but that's about the only option you have around here, AFAIK.

Some of those energy suppliers are unscrupulous and use heavy-handed sales tactics (which are now illegal but still used sometimes) giving the entire industry a bad name. I've avoided dealing with all of them for precisely that reason.

As an example of the complexity, the "Combined Advantage" plan I'm using with APS makes 7 calculations (there are actually 19 costs, but they lump into these seven) to come up with the final bill:

Total KWH 0.028407 \$/KWH
On Peak (09:00 – 21:00 Mon–Fri) 0.03113 \$/KWH
Off Peak (other times) 0.01020 \$/KWH
Peak Demand 11.81 / KW of maximum use hour
Daily fee 0.493 \$/day
Monthly fee 0.35 \$/month
Taxes 11.45% of sum of above

Then to make life more interesting, the rates are different between summer and winter. The above are the "summer" rate.

The provincially mandated rate can be altered every six months (May 1 and November 1, the start of the summer and winter seasons,

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respectively). The two seasons have different thresholds for when the higher rate kicks in (above 600 kWh per month in summer, above 1000 kWh per month in winter) but that's the only difference in seasonal rates.

Around here (province of Ontario in Canada), residential electricity rates are regulated at 5.5 to 6.4 cents per kWh.

Set by the provincial authorities, or national?

Provincial.

So your equipment could cost me as much as \$15.58 CAD (approx. \$14 USD) per month.

At "last kilowatt" costs, it would be US\$17.12 added to my (summer) monthly bill. Winter costs would be lower – perhaps US\$12.37, but that's a wild guess as they increased the rates in May of this year, and I haven't seen a winter rate bill yet. This ignores the difference in heating/cooling costs that this 338 watt heater (equivalent) is adding.

Ignoring the heating factor is fine by me! I can't imagine 338 Watts of heat being a significant amount. I know my furnace (natural gas, not electric) is rated somewhere over 20 kW, so 0.3 kW from the computer is trivial. I would assume it's an equally trivial percentage for cooling.

IOW, electricity rates *will* vary from the estimate I provided earlier, but not by an order of magnitude.

Order of magnitude (10:1) – no, but they can vary quite a bit. The last time the local power company showed me the comparative costs, choosing the "wrong" rate plan could increase my annual electrical costs by 70%. That gets your attention.

Indeed, 70% is a huge variation. I never would have suspected it to vary so widely in a single location.

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