

Energy Savings

How much money will Vera save me on my energy bill?

Naturally this depends on many factors, including how much your local utility charges you for electricity. So, we'll present a hypothetical example here based on a family in California with a 3 bedroom home, with prices as of October, 2008.

Without getting too technical, the amount of electricity you are using at any given moment is measured in watts. Lights are the most common ways to use electricity, and how many watts the light uses are printed on the light bulb. 100 watts is typical. How much energy you use over time is measured in Kilowatt hours (Kwh). This is what the electric company charges you for. There are 720 hours in a 30 day month, so a 100 watt light, if left on all month, will use 72 Kwh. In California, like in most places, each home is allowed to use a very modest amount at a low price, and as you use more, the price goes up. Currently the cheapest price is 11 cents per Kwh, the highest is 35 cents. So leaving a 100 watt light on all month will cost you \$7.92 for the month if your overall energy usage is very low, and will cost you \$25.20 for the month if your energy usage is higher.

When you save energy, reducing your overall usage, you are saving money at the highest rate. *This means, in this example below, the family only need to reduce it's energy consumption by 23% to reduce the bill by more than 1/3.* Look at your utility bill and see what the highest rate you are paying is. Here is the usage for our California home with a \$233 electric bill, with actual figures:

1,048 Kwh used for the month
Baseline Usage 317.20000 Kwh @ \$0.11559
101-130% of Baseline 95.16000 Kwh @ \$0.13142
131-200% of Baseline 222.04000 Kwh @ \$0.22580
201-300% of Baseline 317.20000 Kwh @ \$0.31304
Over 300% of Baseline 96.77500 Kwh @ \$0.35876
Total \$233.31

For this family, reducing the energy usage by 23%, to 809 Kwh, will reduce the bill by 1/3 to \$153, because any energy savings come off the highest rate.

In this case, keeping that 100 watt light off will save \$25.20 per month. This family is only allowed to use 317 Kwh of electricity at the base rate before the rate goes up. That is the "baseline usage". And it translates to 440 watts of continuous power. That means if this family has only five 100 watt lights on over the month they'd be using more than their base rate and paying a premium rate. Here are some common items and how much electricity they use, and what it would cost at the premium rate if they were left on all the time. Of course, the air conditioning unit would likely not be running 24/7, even if it was left on, because once it got the house to the set temperature it shuts itself automatically.

Appliance	Watts	Cost/ hour	Cost/ month
Air Conditioner (12,000 BTU)	1500	\$.52	\$378
Air Conditioner (36,000 BTU)	4500	\$1.58	\$1,134
CD, Tape, Radio, Receiver System	250	\$0.09	\$63
Clothes Dryer	5000	\$1.75	\$1,260
Computer with Monitor (old one)	365	\$.13	\$92
Computer (new model, no monitor)	100	\$.04	\$25
Heater (Portable)	1500	\$.53	\$378
Satellite Dish w/ Receiver	360	\$.13	\$91
Television	200	\$.07	\$50
Vampire Power	50	\$.02	\$13
Vera (including Wi-Fi)	6	2/10 of 1 penny	\$1.50

So, how much energy can Vera really save me? Let's add up some common savings:

Savings	From	Comments
\$8	Morning Lights	Assume in the morning you normally have five 100 lights on in the house. You actually don't need the lights on once the sun rises, say at 7am, but, with the rush to get off to work and school you probably don't turn them off until you leave the house, say at 8:30a. Letting Vera shut the lights off for you 90 minutes earlier than you would have will save you 22.5 Kwh/month, which is \$8/month
\$17	Porch lights	Assume you have 2 porch lights which you turn on in the evening, but don't turn off when you go to bed. Having Vera shut them off for you, reducing them 8 hours/day saves you 48 Kwh/month or \$17/month
\$71	HVAC	Assume you have a 36,000 BTU central air conditioner which, when left on, runs 33% of the time. Assume that twice a week someone forgets to shut it off when you leave for work or school, and twice a week it doesn't get turned down when you go to sleep, each time for 8 hours. Vera would save you \$71 for the month.

In this example, we only looked at three simple ways Vera can reduce energy usage, and for the California family described here using 1,048 Kwh in electricity, and paying \$233/month, **Vera would save around \$90/month, well over 1/3**. If you were considering a software-based home control system that runs on a PC, note that leaving the PC computer on all month can cost between \$20 and \$90/month in electricity if you're already in the premium rate category, and will use up a lot of the energy you saved. Vera uses only \$1.50 of electricity a month and does the same thing, a fraction of that used by even the most power efficient laptops.