

How to Use This Chart

Every appliance's monthly energy consumption is a product of its wattage (or basic electrical draw) times the number of hours that the appliance is in use. Multiplying these, then dividing by 1000, gives you kilowatt hours. One kilowatt hour is any combination of watts times hours that equals 1,000. One thousand watts is one kilowatt. (See table below).

First, Find Your Gizmos.

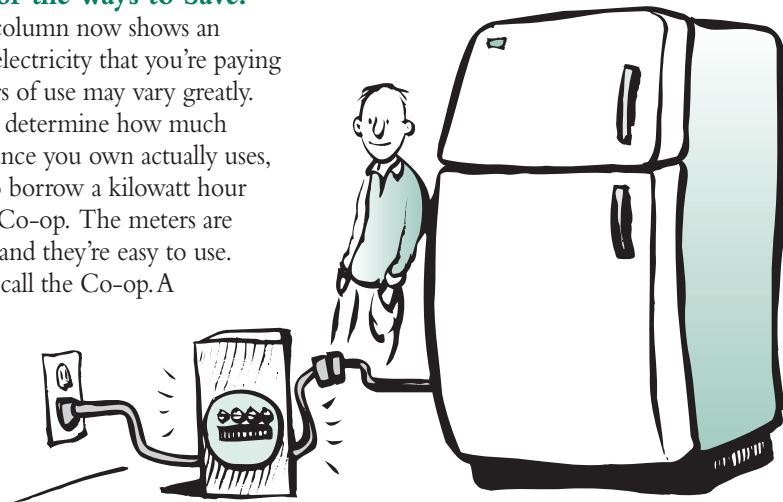
To use the chart, find the appliances that your family uses. (You may want to concentrate on those that you use often, or that have high wattages, or both.) This chart gives the average hours of use per month for a typical family of four. You may want to use these averages, or estimate your own.

Now, Do the Math.

Multiply each appliance's typical wattage (or its actual wattage, which most appliances show) times the average number of hours that you use it each month. Divide the result by 1,000 and enter it in the righthand column.

Next, Look for the Ways to Save.

The righthand column now shows an estimate of the electricity that you're paying for. Actual hours of use may vary greatly. To more closely determine how much energy an appliance you own actually uses, you're invited to borrow a kilowatt hour meter from the Co-op. The meters are loaned out free, and they're easy to use. To borrow one, call the Co-op. A meter may help you to identify opportunities for saving energy and money.



For example, today's refrigerators are far more efficient than the models of just a few years ago. A new model, with a lower-wattage motor that is more efficient so it runs less often, may well pay for itself in a few years.

You may also find that simple awareness leads to savings. For example, learning how much a clothes dryer costs to run may prompt you to use it only when you really need it. Same for an engine block heater in the winter. Or an air conditioner in the summer. Notice how much less it would cost to run a ceiling fan at just 80 watts, compared to 1,500 watts for a 12,000 BTU air conditioner!

The chart at right will help you learn how many kilowatt hours each of your appliances is using.

Larger household power users are highlighted on the chart.

Electrical Usage Chart

for a typical four-person household

*= ENERGY STAR availability

APPLIANCE	MONTHLY AVERAGE			ANNUAL AVERAGE	
	Hours in use	kWh used	Months used	Annual kWh	Annual cost
Air Conditioner—central	125	375	3	1125	\$146
Air Conditioner 8,000 BTU—room/window*	100	90	3	270	\$ 35
Air Purifier	730	37	6	219	\$ 28
Aquarium with heater, light, filter	360	34	12	410	\$ 53
Clothes Dryer—electric (6 loads per week at 45 minutes)	20	75	12	900	\$117
Clothes Dryer—gas (6 loads per week at 45 minutes) ¹	23	9	12	110	\$ 14
Clothes Washer (7 loads per week) ^{2*}	30	9	12	108	\$ 14
Coffeemaker (1.5 pots per day)	30	5	12	54	\$ 7
Computer with monitor*	60	8	12	90	\$ 12
Dehumidifier (moderately damp basement)*	250	200	6	1200	\$156
Dishwasher—air dry (4 loads per week)*	16	8	12	96	\$ 12
Dishwasher—heat dry (4 loads per week)*	16	13	12	154	\$ 20
Electric Blanket (queen size)	240	8	6	50	\$ 7
Fan—box or floor stand	71	11	3	32	\$ 4
Fan—ceiling (without lights)*	150	12	6	72	\$ 9
Freezer Chest, 18 CF, manual defrost, 20 years old	730	75	12	897	\$117
Freezer Chest, 18 CF, manual defrost, 10 years old	730	51	12	610	\$ 79
Freezer Chest, 17 CF, manual defrost, new*	730	36	12	426	\$ 55
Freezer Upright, 17 CF, auto defrost, 20 years old	730	112	12	1342	\$174
Freezer Upright, 17 CF, auto defrost, 10 years old	730	90	12	1082	\$141
Freezer Upright, 17 CF, auto defrost, new*	730	57	12	685	\$ 89
Freezer Upright, 17 CF, manual defrost, 20 years old	730	76	12	917	\$119
Freezer Upright, 17 CF, manual defrost, 10 years old	730	51	12	608	\$ 79
Freezer Upright, 17 CF, manual defrost, new*	730	40	12	479	\$ 62
Furnace Fan	178	152	6	914	\$119
Hair Dryer (10 minutes per day)	5	6	12	75	\$ 10
Heat Tape—30' (thermostatically controlled)	365	77	6	460	\$ 60
Heater—electric baseboard: 10'	240	300	5	3000	\$390
Heater—engine block	180	135	4	540	\$ 70
Heater—portable (1500 watt, 8 hours per day)	240	360	6	2160	\$281
Heating System—hot water circulator (3 zones)	178	48	6	288	\$ 37
Hot Tub—indoor	70	196	12	2350	\$306
Hot Tub—outdoor	128	298	12	3577	\$465

APPLIANCE	MONTHLY AVERAGE			ANNUAL AVERAGE	
	Hours in use	kWh used	Months used	Annual kWh	Annual cost
Humidifier	230	29	6	173	\$ 22
Lighting—compact fluorescent bulb (100W equivalent)*	100	3	12	32	\$ 4
Lighting—fluorescent light (two 40W tubes and ballast)*	100	9	12	106	\$ 14
Lighting—incandescent (100W bulb)*	100	10	12	120	\$ 16
Lighting—outdoor flood, compact fluorescent*	90	2	12	29	\$ 4
Lighting—outdoor flood, incandescent*	90	11	12	130	\$ 17
Microwave Oven (15 minutes per day)*	8	11	12	137	\$ 18
Oven (2 hours per week)	8	21	12	255	\$ 33
Oxygen Concentrator	240	96	12	1152	\$150
Radio/Tape Player	153	2	12	18	\$ 2
Range—large cooking surface unit	8	19	12	230	\$ 30
Range—small cooking surface unit	8	10	12	125	\$ 16
Refrigerator—18 CF, 20 years old	730	98	12	1181	\$154
Refrigerator—18 CF, 10 years old	730	70	12	845	\$110
Refrigerator—18 CF, new*	730	41	12	486	\$ 63
Refrigerator—22 CF, side-by-side, 20 years old	730	135	12	1619	\$210
Refrigerator—22 CF, side-by-side, 10 years old	730	96	12	1146	\$149
Refrigerator—22 CF, side-by-side, new*	730	56	12	675	\$ 88
Satellite/Cable Receiver Box*	730	18	12	219	\$ 28
Stereo	90	5	12	54	\$ 7
Swimming Pool Filter Pump	365	274	4	1095	\$142
Television—15" to 27" standard*	150	18	12	216	\$ 28
Television—27" LCD flat screen*	150	18	12	216	\$ 28
Television—42" Plasma*	150	49	12	588	\$ 76
Toaster Oven (5 minutes per day)	3	4	12	43	\$ 6
Water Heater—50 gallon tank	83	386	12	4626	\$601
Waterbed Heater (queen size)	256	96	12	1152	\$150
Well Pump	17	12	12	140	\$ 18

¹ Cost does not include gas use.

² Cost does not include hot water.

High Energy Use Appliances—operating costs annually of \$100 or more—are listed in green. Average usage data compiled by Efficiency Vermont.

Some Ways to Use a Kilowatt Hour

Device	Watts	Time Used	KWH	Service Delivered
Fluorescent bulb	25	40 Hours	1	About 8 evenings of light
Incandescent bulb	100	10 Hours	1	Just 2 evenings of light
Computer	200	5 Hours	1	A good afternoon's work
Dryer	5000	12 Minutes	1	Less than a single load

How Much Are Your Electrical Appliances Costing You This Month?

To figure your estimated monthly hot water cost, multiply kwh by the average Vermont 2007 average cost of \$.15/kwh (source: Vermont Department of Public Service)

Tank in Heated Location		Tank in Unheated Location	
1	2	3	4
Number of People			
30 gal.	521	374	521
40 gal.	529	382	529
50 gal.	540	393	540
80 gal.	560	413	560
120 gal.	580	433	580
1	177	276	177
2	185	283	185
3	196	295	196
4	216	315	216
5+	236	335	236
30 gal.	92	190	92
40 gal.	102	200	102
50 gal.	116	214	116
80 gal.	137	239	137
120 gal.	166	264	166
1	387	289	387
2	397	298	397
3	411	312	411
4	435	337	435
5+	460	362	460

Estimated monthly kwh consumption for hot water

To estimate how much electricity you may be using for hot water tanks in heated (below left) or in unheated (below right) locations, use the average numbers given on the appliance chart inside, use the table below. Find your tank size and the number of people in your household, in either the table for tanks in heated (below left) or in unheated (below right) locations. For example, a family of four with a 50 gallon tank in an unheated basement would use about 411 kwh per month for hot water. Note that these figures are estimates for an untrapped tank. Wrapping the tank with a water heater jacket may reduce consumption of electricity by 5-10%.

Hot Water – A Special Case

It Can Pay to Know.

This brochure will help you break down your total monthly electricity usage into its critical parts.

How much energy does your refrigerator use?

Your clothes dryer? Your electric water heater, if you have one?

It's not hard to get a better picture of what's soaking up those kilowatt hours.

Once you see that, you can start to save.

Find Out How Much 'Juice' Your Gadgets Use.

Most people think about their home's electrical use in terms of how many dollars it costs. That's natural, because that's what your electric bill tells you every month.

But your electric bill also gives you another number: your kilowatt-hours (kwh) of electric use. Kilowatt-hours are the measure of electric consumption, the basis on which your electric bill is calculated. The key to reducing your monthly bill is understanding which household electric "loads" use what amounts of electricity. An electric "load" refers to any single use of electricity, e.g., an appliance, lighting, refrigeration.

Your electric meter doesn't reveal those details; it only shows how much power you've used over a period of time. However, there are two ways to assess the specific electric loads in your home and begin to determine what they are costing you::

- use this appliance chart (see inside) as a general guide
- borrow a Co-op test meter and directly measure any 120-volt load

The test meter is portable and easy to use. You hook it up to your 120-volt appliance and it measures that appliance's electricity consumption in kilowatt-hours, which is the basis of your electric bill.

Four typical household uses of electricity deserve special attention. In each case, the product of the electrical usage is heat. The Big Four include:

- electric space heating (baseboard or portable units)
- electric hot water
- electric clothes drying
- electric stove

Electric space heating. This is the most expensive heating system to operate. Baseboard electric heat is rarely installed in new homes these days, but older homes may still employ it, and both baseboard and portable electric heating units are frequently used to supplement other heating systems. The Co-op provides technical assistance for members interested in reducing energy use (and cost), and access to financing for home energy improvements that can help you avoid or replace this expensive heating option.

Electric hot water. Electric water heaters have the highest operating cost of any fuel type. The amount of electricity used by electric water heaters is primarily driven by the number of household occupants: on average, 3 kwh per-person per-day. The data provided on the panel entitled "Hot Water – A Special Case," on the back of this appliance chart, allow for various

levels of occupancy (as well as tank location).

Electric clothes drying. Members with electric dryers have another potentially significant electrical "load" – although its impact on the household electric bill is subject to several variables (number of occupants, frequency of use, seasonal or year-round use of the appliance). In one hour of operation, the typical electric clothes dryer consumes about 5 kilowatt-hours of electricity. Consumer Reports recommends that new dryers be equipped with moisture sensors. Consumer Reports also says that in most U.S. locations clothes dryers operated by propane (or natural gas, where available) cost less to operate than electric units.



Money Isn't All You're Saving

Electric stoves. While electric stoves draw significant electricity when in use, they typically do not operate for extended periods of time. However, if your home is equipped with propane already, as for a clothes dryer, it may make sense also to use propane for cooking.

For homes without electric hot water, **refrigeration** is probably the most costly electric usage on a year-round basis. However, great improvements have been made in energy efficiency for refrigerators, reducing their operating costs. (The chart shows examples of this type of appliance which assume 15-year-old units.) Now more than ever, it may pay to remove old refrigerators and invest in a newer model.

Lighting, especially incandescent lighting (the typical "light bulb"), may be another significant electricity cost over the course of a year. Another group of electric loads can be characterized as **seasonal:** swimming pools, air conditioners, dehumidifiers, engine block heaters, heat tape, and water trough deicers for livestock.

ALL THE VALUES IN THIS CHART ARE AVERAGES. Every home is different. Inside this brochure you'll find a detailed chart, with simple instructions to help you learn how much it is costing you to heat your home, cool your food, light up your life and run other appliances. You'll see that every appliance's electric consumption depends on its **wattage**

and the **number of hours** it gets used – because even appliances with relatively low wattage, such as lighting, can use significant amounts of kilowatt-hours if left on for extended periods. For appliances with high wattages, like clothes dryers, kilowatt-hours mount up in a short time. See the table, "Some Ways to Use a Kilowatt-Hour."

The math is easy to do. Once you do it, you can begin to see which efficiency and conservation steps may save you money.



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