

## FARM EQUIPMENT

	Capacity HP or Watts	Estimated kWh
<b>AT THE BARN</b>		
Barn cleaner	2-5 HP	120-yr.
Electric fence	7-10 watts	7 per mo.
Ensilage blowing	3-5	½ per ton
Feed grinding	1-7 ½	½-1 ½ per 100 lbs.
Feed mixing	½-1	1 per ton
Grain cleaning	¼-½	1 per 100 bu.
Grain drying	1-7½	5-7 per ton (heated air) 20-40 per ton (unheated air)
Grain elevating	¼-5	4 per 1,000 bu.
Hay curing	3-7 ½	60 per ton
Milking, portable	¼-½	1 ½ per cow/mo.
Milking, pipeline	½-3	2 ½ per cow/mo.
Sheep shearing	Fractional	1 ½ per 100 sheep
Silo unloader	2-5 HP	4-8 per ton
Silage conveyor	1-3 HP	1-4 per ton
Stock tank heater	200-1,500 watts	varies widely
Yard lights	400 watts	8 hours daily
Ventilation	1/6-½ HP	2-6 per day per 20 cows
<b>IN THE MILK HOUSE</b>		
Milk cooling	½-5 HP	1 per 100 lbs. milk
Space heater	1,000-3,000	800 per yr.
Ventilating fan	Fractional	10-25 per mo.
Water heater	1,000-5,000	1 per 4 gal.
<b>FOR POULTRY</b>		
Automatic feeder	¼-½ HP	10-30 kWh-mo
Brooder	200-1,000 watt	½-1 ½ per chick per season
Egg cleaning	Fractional HP	1 per 2,000 eggs
Egg cooling	1/6-1 HP	1 ¼ per case
Night lighting	40-60 watts	10 per mo. per 100 birds
Ventilating fan	50-300 watts	½-1 ½ per day per 1,000 birds
Water warming	50-700 watts	varies widely
<b>FARM SHOP</b>		
Air compressor	¼-½ HP	1 per 3 hrs.
Arc welding	37 ½ amp	100 per year
Battery charging	600-750 watts	2 per battery charge
Drill press	½ HP	½ per hr.
Fan, 10"	35-55 watts	1 per 20 hr.
Grinding	¼-½ HP	1 per 3 hrs.
Heater, portable	1,000-3,000 watts	10 per mo.
Heater, engine	1000 watts	5 per 5 hrs.
Sawing, circular (8"-10")	½-½ HP	½ per hr.
Sawing, jig	¼-½ HP	1 per 3 hrs.
Soldering, iron	60-500 watts	1 per 5 hr.
<b>MISCELLANEOUS</b>		
Farm chore motors	½-5	1 per HP per hr.
Irrigating	1 HP up	1 per HP per hr.
Snow melting, sidewalk & steps heating cable embedded in concrete	25 watts per sq. ft.	2.5 per 100 sq. ft. per hr.
Soil heating, hotbed	400 watts	1 per day per season



## Saving Energy = Saving Money

If you want to lower your utility bill by being more energy efficient, take an energy tour of your home, paying special attention to the following areas of interest.

**Windows and Doors.** Use caulking and weather-stripping to plug cracks and air leaks around doors and windows. Consider storm doors and windows or double-paned glass to help keep indoor air inside and outdoor air outside. Use the sun to your advantage. Use draperies, shutters and awnings to keep sunlight out in summer, but let it in during the winter to help warm your home and lighten the burden on your heating system.

**Heating and Cooling System.** Regularly inspect and clean or replace filters and close vents to unused rooms. Insulate ducts and pipes in unfinished spaces. When it comes to replacing your heating and cooling system, do your research and carefully consider the most energy-efficient options.

**Water Heater.** As a major energy user in your home, this appliance bears special consideration. Try a lower thermostat setting and an insulated water heater jacket. Install water-flow restrictors in showers and faucets. They cut hot water use without discomfort to the user.

**Attic, Floors, Foundation and Exterior Walls.** These are the areas where insulation can help you the most. Installing a "weather barrier" in your attic, under floors, around interior basement walls, in crawl spaces and around foundation walls can be a relatively simple, do-it-yourself operation. When it comes to exterior walls, however, you may need the aid of an expert.

When you've completed the "energy tour," decide exactly where you and your family can and will save money. Remember, caulking, weather-stripping and insulation are tax-deductible. You not only save money on your utility bill with these energy-saving measures, but money on your taxes as well.

Talk to the energy experts at your local electric cooperative. They have information on rebate programs and other ways to save money and make the most out of your efficiency investments. For more energy-saving tips, and to find out how the little changes add up, visit [www.TogetherWeSave.com](http://www.TogetherWeSave.com).



# Where does your electricity dollar go?

Knowing the answer to this question will help you understand why your electric bill is the size it is. Many of us do not realize what we receive for the money we spend on electricity each month. Too often, we see only the bottom line (the dollars) and not what we are paying for.

Most of us wouldn't think of buying any commodity without knowing exactly what we were getting for that money. Whether it's pounds of oranges, number of pork chops, or gallons of gas, we consciously compare prices and are very aware of what our food or gasoline dollar is buying. Why isn't it that way with electricity?

Maybe it's because electricity is an invisible commodity – we don't think about what it does for us.

When you pay your electric bill, you are paying for kilowatt-hours that are consumed by your appliances, electronics, lighting and more in your home. Knowing how these items affect your electric bill will help you determine where your electricity dollar is going.

### Understand your usage

It's time to get a grasp on how you use electricity in your home. Examine this list of typical electric appliances and equipment. Fill in the information for the appliances you use each month. Add up the kilowatt-hours, and you'll have a very good idea of where your electricity dollar goes.

The average monthly kilowatt-hour consumption figures shown on this chart are based on normal usage. Your electrical consumption may be higher or lower depending on how you or other people in your home use the various appliances.

For example, the chart states that a 32" LCD TV uses 13 kilowatt-hours per month if used four hours every day. If you have a similar TV that's on more than four hours per day, adjust the kilowatt-hour consumption figure accordingly.

The energy experts at your local electric cooperative can assist you if you have further questions about your electricity consumption.

### Calculations

You can calculate your own appliance usage and cost of operation:

1. Find the wattage of your appliance, usually on serial plate. If wattage is not listed, look for the amperage and voltage ratings on the serial plate, and multiply amperage (amps) by voltage (volts) to get the wattage (watts).
2. Multiply the wattage by the hours you use the appliance each month, and then divide by 1,000. For example, if you have a 19" LCD TV that is used eight hours every day every month:  $8 \times 30 = 240$  hours. The wattage on the TV is 46:  $240 \times 46 = 11,040$  watt-hours. Divide that by 1,000: 11.04 kilowatt-hours per month are used to operate the TV.

You can translate this or any of the other kilowatt-hour amounts from the chart to dollars and cents:

1. Divide the number of kilowatt-hours you purchased on your last bill into the amount of the total bill. This will give you the average cost per kilowatt-hour. For example, if you purchased 1,000 kilowatt-hours last month, and your bill was \$80:  $80 / 1,000 = \$0.08$  per kilowatt-hour
2. Multiply this figure times the kilowatt-hours used by any one appliance or all your appliances.

**Now you know where your ELECTRICITY DOLLAR goes.**

# Where does your electricity dollar go? A guide to electric consumption in the home.

Appliance	Average monthly kWh consumption	Insert kWhs you use each month
<b>KITCHEN</b>		
Blender	2	
Broiler	8	
Coffee maker, percolator type	12	
Coffee maker-drip		
Brew cycle	8	
Warm cycle	12	
Corn popper, conventional	1	
Hot air	1	
Crockery cooker	3	
Deep fryer	3	
Dishwasher, Energy Star	26	
Baby food warmer	2	
Bag maker-sealer	0.003	
Can opener	0.003	
Carving knife	6	
Clock	2	
Floor polisher	1	
Food processor	4	
Food slicer	0.008	
Freezer, Energy Star		
Chest freezer, manual defrost	27	
Upright freezer, frost-free	51	
Freezer, non-Energy Star (15-20 years old)		
Chest freezer, manual defrost	85	
Upright freezer, frost-free	150	
Fry pan	14	
Microwave oven	11	
Mixer	1	
Oven		
Bake element (4 hrs/weekly)	50	
Broil element (4 hrs/weekly)	54	
Self-clean cycle (2 hrs/monthly)	6.8	
Roaster	5	
Refrigerator, Energy Star		
Side-by-side standard (25 cu. ft.)	44	
Top freezer (18 cu. ft.)	32	
Bottom freezer (25 cu. ft.)	40	
Refrigerator, non-Energy Star (15-20 years old)		
Side-by-side standard (22 cu. ft.)	190	
Side-by-side standard (25 cu. ft.)	210	
Top freezer (19 cu. ft.)	135	
Top freezer (24 cu. ft.)	165	
French door with bottom freezer	51	
Toaster		
2 slice	3	
4 slice	4	
Toaster oven-broiler	12	
Trash compactor	4	
Waffle iron	2	
Waste disposal	3	

## TOTAL KILOWATT-HOUR CONSUMPTION IN THE KITCHEN

## LAUNDRY & CLEANING

Clothes dryer (1 hr/day)	168	
Clothes washer (1 hr/day)	16	
Iron	5	
Sewing machine	1	
Vacuum cleaner	3	

## TOTAL KILOWATT-HOUR CONSUMPTION FOR LAUNDRY & CLEANING

## HOME ENTERTAINMENT & RECREATION

Radio (3 hrs/day)	1	
Television (4 hrs/day)		
CRT 13"	7	
19"	12	
27"	15	

Appliance	Average monthly kWh consumption	Insert kWhs you use each month
<b>ENTERTAINMENT</b>		
LCD		
43"	24	
19"	6	
32"	13	
42"	25	
52"	39	
Plasma		
32"	13	
42"	45	
50"	58	
Projection 42"-50"	45	

## TOTAL KILOWATT-HOUR CONSUMPTION FOR ENTERTAINMENT

## COMFORT CONDITIONING: HEATING & COOLING

Air cleaner	18	
Air conditioner (8 hrs/day operating time)		
Window, 10 EER		
6,000 btu-h	144	
10,000 btu-h	240	
12,000 btu-h	288	
14,000 btu-h	336	
16,000 btu-h	384	
18,000 btu-h	432	
20,000 btu-h	480	
Central, 16.5 EER		
1 1/2 ton	270	
2 ton	360	
2 1/2 ton	450	
3 ton	540	
4 ton	720	
5 ton	900	
Dehumidifier	31	
Electric blanket	24	
Fans, attic	24	
Furnace 1-3 horsepower	30	
Window, 20"	18	
Circulating	4	
Heat pump, air source (cooling 8 hrs/day; heating 5 hrs/day)		
Cooling (18 SEER)		Heating (9.0 HSPF)
2 ton	320	400
3 ton	480	600
4 ton	640	800
5 ton	800	1,000
Heat pump, ground source (cooling 8 hrs/day; heating 5 hrs/day)		
Cooling (19 SEER)		Heating (3.5 COP)
2 ton	288	301
3 ton	432	452
4 ton	576	603
5 ton	720	754
Electric heating		
Central furnace (5 hrs/day operating time)		
10,250 watts	1,537	
15,350 watts	2,303	
20,490 watts	3,074	
25,670 watts	3,851	
Individual room, baseboard units (5 hrs/day operating time)		
500 watts	75	
1,000 watts	150	
1,500 watts	225	
2,000 watts	300	
Portable space heaters (5 hrs/day operating time)		
1,000 watts	150	
1,500 watts	225	
Humidifier	14	
Water bed, 400-watt heater	85	

## TOTAL KILOWATT-HOUR CONSUMPTION FOR HEATING AND COOLING

\*To get an accurate estimate of your monthly electricity consumption, remember that heating and cooling equipment are not normally used in the same month. Make your estimates based on a winter or summer month.

Appliance	Average monthly kWh consumption	Insert kWhs you use each month
<b>LIGHTING</b>		
Incandescent (5 hrs/day operating time)		
40 watt bulb	6	
60 watt bulb	9	
75 watt bulb	11	
100 watt bulb	15	
150 watt bulb	22	
CFL (5 hrs/day operating time)	18	
Fluorescent (5 hrs/day operating time)		
2-ft. length	3.3	
4-ft. length	6.6	
8-ft. length	12.4	
Christmas (6 hrs/day operating time)		
Indoor: 50 lights, miniature	11	
Outdoor: 25 lights, 7 watts ea.	32	
LED: 25-light strand	0.9	

## PERSONAL CARE

Hair dryer (hand held, used 10 min./day)		
250 watts	3	
500 watts	6	
1,000 watts	13	
Hair dryer		
Hard bonnet	4	
Soft bonnet	3	
Curling Iron	2	
Flat iron	8	
Heat lamp (infrared)	1	
Lighted mirror		
Incandescent	4	
Fluorescent	2	
Shaver	2	
Sun lamp	1	

## TOTAL KILOWATT-HOUR CONSUMPTION FOR PERSONAL CARE

## WATER SUPPLY & HEATING

### Water pump

Each hour of operation times horsepower equals kilowatt-hours. For example: a 3-hp motor on a water pump running for one hour uses 3 kilowatt-hours (assumes motor efficiency of 75%). To determine the amount of electricity used by your water pump motor, check the horsepower of your pump and estimate how many hours per month it runs.

\_\_\_\_\_ Horsepower X \_\_\_\_\_ hours = \_\_\_\_\_ kilowatt-hours

### Electric water heating

The average person uses 15 gallons of hot water per day. This includes hot water for bathing, dish washing, etc. For the purpose of estimating your electrical consumption please use the following table. Insert the kilowatt-hours used monthly in the right-hand column opposite that with number of people in your home.

No. of people	No. of gal. month	Average kilowatt-hour per month
1	450	77
2	900	154
3	1,350	231
4	1,800	308
5	2,250	285
6	2,700	462

## TOTAL KILOWATT-HOUR CONSUMPTION FOR WATER SUPPLY AND HEATING

## TOTAL KILOWATT-HOUR CONSUMPTION FOR ALL APPLIANCES IN YOUR HOME