responsiblenergy

appliance energy costs

operating costs for major household appliances

taking responsibility

As an individual, your efficient use of energy brings benefits such as lower bills, improved comfort levels in your home and a reduced personal impact on the environment.

Acting together, our individual choices add up—for the benefit of our community, our environment and our energy future. That's the power of working together.

As your community energy company, we are committed to sharing our experience and energy expertise. You can always contact us for:

- Answers to your energy questions.
- Energy efficiency information and advice.
- Help in evaluating energy-saving options.
- Assistance in finding energy-efficient products.

How much do your appliances cost to operate?

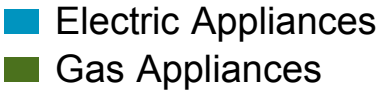
Some appliances cost little to operate. Some cost a lot. The graph on the next page gives typical monthly costs. It helps to determine which appliances deserve energy-saving efforts.

Use this brochure to make energy decisions. Compare operating costs of a microwave and the oven or a whole house fan and central air conditioner. Make informed appliance choices.

Table of contents

Typical monthly costs*

(Excluding home heating and cooling.)



Clothes dryer (electric)
$14.33

Clothes dryer (gas)
$2.56

Clothes washer (ENERGY STAR®, water heated by gas)
$1.58

Clothes washer (with agitator, water heated by gas)
$5.82

Dehumidifier
$25.95

Freezer
$7.90

Lighting
$12.29

Microwave oven (20 minutes/day)
$1.84

Range (gas, without pilot light)
$1.87

Refrigerator
$8.72

Television (27”)
$2.15

Television - Plasma (42”)
$6.84

Water heater (electric, .86 energy factor)
$59.50

Water heater (electric, .93 energy factor)
$55.02

Water heater (gas, .57 energy factor)
$17.60

Water heater, ENERGY STAR tank-style (gas, .67 energy factor)
$15.20

*Based on a four-person household:
Average electric rate of $0.14/kWh
Average gas rate of $0.80/therm
Average hot water use 64.3 gallons/day

How to use this brochure

Get your utility rate

Find your rates by adding components from your MGE bill, or visit *mge.com* and type “rates” in the search box. For natural gas add the rates for therms used:

- Distribution Service
- Administrative Charge
- Natural Gas Service

For electricity add the rates for kWh used:

- Distribution Service
- Electricity Service

The energy prices in this brochure are not a prediction of future costs/ rates. This range of gas and electric rates is provided to cover possible fluctuations in energy prices mainly due to volatility of natural gas costs. Natural gas is traded on a national commodity exchange and its costs are affected by supply and demand.

Find the average cost of using appliances

- Gas appliance tables, pages 5 to 6
- Electric appliance tables, pages 7 to 19

The tables are grouped by use or room, then divided between big energy users and medium to small energy users.

Estimated monthly costs for big energy users

Big energy users cost the most to operate. Use these appliances wisely to lower monthly bills.

Find the average amount of electricity used each month in the kWh/month column. It’s based on average-size appliances and average monthly use.

Many big energy users are controlled by a thermostat. They turn on and off automatically. Energy use is estimated with an average amount of “on” time.

Cost per hour for medium to small energy users

The cost per hour of operation is given for appliances that use medium to small amounts of energy.

Find the column that is closest to the electric or gas rate you pay. Use this column to find the hourly cost of operation. Multiply the cost per hour by the number of hours per month the appliance is used. This is the monthly cost.

Figuring operating costs

Have an appliance that’s not listed? Calculate the operating cost or borrow a portable energy meter from the library.

Gas appliances

Divide the Btu rating by 100,000. This is the number of therms used in one hour of operation. Multiply by the rate per therm (see page 3, Get your utility rate) and by the number of hours the appliance is used.

$$\text{Cost of operation} = \frac{\text{Btus}}{100{,}000} \times \text{rate/therm} \times \text{hours used}$$

For example: A gas clothes dryer uses 20,000 Btus per hour. Estimate that it runs one hour per load. How much does it cost to dry one load?

$$\text{Cost of operation} = \frac{20{,}000}{100{,}000} \times \$0.80/\text{therm} \times 1 = \$0.16$$

Electric appliances

Find the wattage of the appliance. It may be stamped on the back or bottom. Divide the wattage by 1,000 to get the kilowatts used per hour. Multiply this by the rate per kilowatt-hour (see page 3, Get your utility rate) and by the number of hours the appliance is used.

$$\text{Cost of operation} = \frac{\text{Wattage}}{1{,}000} \times \text{rate/kWh} \times \text{hours used}$$

Some appliances cycle on and off automatically, using energy only when they are on. To figure their energy use, estimate the amount of time they use energy.

For example: The dehumidifier uses 620 watts. Estimate that it runs 10 hours a day. How much does it cost to run the dehumidifier per day?

$$\text{Cost of operation} = \frac{620}{1{,}000} \times \$.14 \times 10 = \$0.87$$

Some appliances list only amperage and volts. They may be stamped on the back or bottom. If it plugs into a standard outlet, it's a 120 volt appliance. Use amperage multiplied by volts to figure the operating cost.

$$\text{Cost of operation} = \frac{\text{Amperage} \times \text{volts}}{1{,}000} \times \text{rate/kWh} \times \text{hours used}$$

Caution: Using this formula usually overestimates operating costs.

Portable Energy Meter

For the most accurate electric appliance operating cost, borrow a portable energy meter. Accurate and easy to use, this tool has helped hundreds of individuals save energy and make appliance decisions. It may be reserved for checkout through all public libraries in the South Central Library System.

Gas Appliances

Big energy users

	Btu/hour	Monthly cost estimate (rates per therm)		
		$0.60	$0.80	$1.00
Clothes dryer*	20,000	1.92	2.56	3.20

*Approximate therm/load = 0.1 and average use = 32 loads per month.

Medium to small energy users

	Btu/hour	Hourly cost estimate (rates per therm)		
		$0.60	$0.80	$1.00
Gas fireplace (sealed)	18,000	0.108	0.144	0.180
	30,000	0.180	0.240	0.300
	45,000	0.270	0.360	0.450
Gas log set	50,000	0.300	0.400	0.500
	75,000	0.450	0.600	0.750
Grill	27,000	0.162	0.216	0.270
Outdoor gas light	2,000	0.012	0.016	0.020
Range:				
Surface unit	9,000	0.054	0.072	0.090
Oven, bake-broiler unit	25,000	0.150	0.200	0.250
Broil unit	20,000	0.120	0.160	0.200
Pilot light	400	0.002	0.003	0.004
Swimming pool heater	200,000	1.200	1.600	2.000
Pilot lights:				
Dryer	300	0.002	0.002	0.003
Range	400	0.002	0.003	0.004
Furnace	1,000	0.006	0.008	0.010

Gas Water Heater

Estimated hot water costs

	Btu/hour	Average use*	Approx. therms/ month	Monthly cost estimate (rates per therm)		
				$0.60	$0.80	$1.00
Typical tank-style (Energy Factor = .57)	40,000	64.3 gals./day	22.0	13.87	18.50	23.12
ENERGY STAR tank-style (Energy Factor = .67)	40,000	64.3 gals./day	19.0	12.28	16.37	20.47
ENERGY STAR tankless, no pilot light (Energy Factor = .82)	180,000	64.3 gals./day	15.0	9.14	12.18	15.23
ENERGY STAR condensing tank-style (Energy Factor = .80)	75,000	64.3 gals./day	15.6	9.36	12.48	15.61
Pilot light	400	Continuous	3.0	1.80	2.40	3.00

*Based on a household of four.

Cost per use	Therms per use	Cost per use (rates per therm)		
		$0.60	$0.80	$1.00
Dishwasher (ENERGY STAR)	0.037	0.02	0.03	0.04
Dishwasher (typical)	0.051	0.03	0.04	0.05
Clothes washer (ENERGY STAR)	0.046	0.03	0.04	0.05
Clothes washer (typical)	0.169	0.10	0.14	0.17
Shower	0.110	0.07	0.09	0.11
Tub bath	0.165	0.10	0.13	0.17

Note: Based on typical gas water heater, Energy Factor = .57. Electricity cost per load of dishes is about 10 cents. Electricity cost per load of clothes is about 2 cents. These are in addition to the cost of gas for heating water.

Air-Conditioning

Central air conditioner - Estimated seasonal cost

	Size (tons)**				
	1.5	2	2.5	3	3.5
8.0 SEER* (typical pre-1992)	$110	$146	$183	$219	$256
10.0 SEER (least efficient allowed after 1992)	88	117	146	176	205
11.0 SEER	80	106	133	160	186
12.0 SEER	73	98	122	146	171
13.0 SEER (least efficient allowed after 2006)	68	90	113	135	158
14.5 SEER (ENERGY STAR minimum efficiency after 2008)	61	81	101	121	141
15.0 SEER	59	78	98	117	137
16.0 SEER	55	73	91	110	128

*Seasonal energy efficiency rating (SEER) compares air conditioners over an entire cooling season. Costs are for 325 hours of operation at $0.15 per kWh.

**Expressed in tons (one ton equals 12,000 Btus/hour).

Note: A typical central air conditioner costs between 20 and 60 cents per hour of operation.

Room air conditioner - Estimated seasonal cost

	Size (Btus per hour)	
	8,000	12,000
8.0 EER* (typical pre-1990)	$49	$73
9.7 EER (least efficient after 2000)	40	60
10.7 EER (ENERGY STAR minimum efficiency)	36	55

*Energy efficiency rating (EER) compares air conditioners under continuous operation. Costs are for 325 hours of operation at $0.15 per kWh.

Note: A typical room air conditioner costs between 10 and 20 cents per hour of operation.

Home Comfort, Ventilation

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Air-to-air heat exchanger	55	0.0077	0.0083	0.0088
	200	0.0280	0.0300	0.0320
Electric fireplace	1,500	0.2100	0.2250	0.2400
Whole house - tankless water	100	0.0140	0.0150	0.0160
Fans:				
Attic	375	0.0525	0.0563	0.0600
Bathroom exhaust	60	0.0084	0.0090	0.0096
Ceiling	100	0.0140	0.0150	0.0160
Furnace:*				
With efficient fan motor	250	0.0350	0.0375	0.0400
With standard fan motor	500	0.0700	0.0750	0.0800
Kitchen range hood	250	0.0350	0.0375	0.0400
20" to 24" window	200	0.0280	0.0300	0.0320
Oscillating	88	0.0123	0.0132	0.0141
24" whole house	390	0.0546	0.0585	0.0624
30" whole house	575	0.0805	0.0863	0.0920
Heater:				
Portable space heater	1,500	0.2100	0.2250	0.2400
4 ft electric baseboard heater	1,000	0.1400	0.1500	0.1600
Humidifier:				
Portable	88	0.0123	0.0132	0.0141
Furnace	115	0.0161	0.0173	0.0184
Vaporizer:				
Steam	420	0.0588	0.0630	0.0672
Cool spray	60	0.0084	0.0090	0.0096
Whole house exhaust system	75	0.0105	0.0113	0.0120

*Typical furnace fan runs about 1,000 hours per heating season and 400 hours per cooling season.

Dehumidifier:	kWh/ month	Estimated monthly cost at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Typical dehumidifier	194	27.16	29.10	31.04
ENERGY STAR dehumidifier	163	22.82	24.45	26.08

Home Entertainment, Office

Medium to small energy users

	Typical wattage	Cost per hour of operation at the following rates (kWh)		
		$0.14	$0.15	$0.16
Cable box converter	25	0.0035	0.0038	0.0040
Computer (desktop):				
With CRT monitor	135	0.0189	0.0203	0.0216
With LCD monitor	100	0.0140	0.0150	0.0160
In standby mode	5	0.0007	0.0008	0.0008
Computer (laptop):				
With LCD monitor	20	0.0028	0.0030	0.0032
Computer printers:				
Ink jet (3 ppm*):				
Idling	10	0.0014	0.0015	0.0016
Printing	19	0.0027	0.0029	0.0030
Laser (4 ppm*):				
Idling	48	0.0067	0.0072	0.0077
Printing	175	0.0245	0.0263	0.0280
Laser (8 ppm*):				
Idling	88	0.0123	0.0132	0.0141
Printing	275	0.0385	0.0413	0.0440
Fax machine (laser):				
Standby	45	0.0063	0.0068	0.0072
Active	400	0.0560	0.0600	0.0640
Radio	15	0.0021	0.0023	0.0024
Stereo	60	0.0084	0.0090	0.0096
Fish aquarium:				
Filter	10	0.0014	0.0015	0.0016
Heater	100	0.0140	0.0150	0.0160
Pump	10	0.0014	0.0015	0.0016
Television:**				
27" conventional	75	0.0105	0.0113	0.0120
42" plasma	240	0.0336	0.0360	0.0384
42" LCD	150	0.0210	0.0225	0.0240
Digital video recorder	30	0.0042	0.0045	0.0048
Video game system	160	0.0224	0.0240	0.0256

*Pages per minute.

**High-definition televisions use more.

Kitchen

Big energy users

Dishwasher	kWh/ use	Estimated cost per load at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Typical dishwasher including electricity to heat water	5/load	0.70	0.75	0.80
ENERGY STAR dishwasher including electricity to heat water	2/load	0.28	0.30	0.32

Range	Typical wattage	Estimated cost per hour at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Small surface unit	1,300	0.18	0.20	0.21
Large surface unit	2,400	0.34	0.36	0.38
Oven bake unit	3,200	0.45	0.48	0.51
Broil unit	3,600	0.50	0.54	0.58
Self-cleaning	4,000	0.56	0.60	0.64

Refrigerator	kWh/ month	Estimated monthly cost at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Top freezer - 18.5 to 20.4 cubic foot (bottom freezer models use about the same amount):				
July 2001 or newer (ENERGY STAR models)	37	5.18	5.55	5.92
1993 to June 2001	58	8.12	8.70	9.28
1990 to 1993	82	11.48	12.30	13.12
Older than 1990	100	14.00	15.00	16.00
Side-by-Side - 21.5 to 22.4 cubic foot:		0.00	0.00	0.00
July 2001 or newer (ENERGY STAR models)	51	7.14	7.65	8.16
1993 to June 2001	71	9.94	10.65	11.36
1990 to 1993	110	15.40	16.50	17.60
Older than 1990	135	18.90	20.25	21.60
Compact - 1.7 to 6.0 cubic foot - manual defrost:		0.00	0.00	0.00
Conventional	32	4.48	4.80	5.12
ENERGY STAR	26	3.64	3.90	4.16

Note: Ice makers will increase operating costs by 15% to 20%. Through-the-door ice and water dispensers will add another 10% to 15% to operating costs. Each cubic foot larger adds about 25 kWh per year.

Kitchen

Big energy users (continued)

Freezer	kWh/ month	Estimated monthly cost at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Chest freezer - 12 cubic foot (approx.):				
July 2001 or newer (ENERGY STAR models)	25	3.50	3.75	4.00
1993 to June 2001	31	4.34	4.65	4.96
1990 to 1993	54	7.56	8.10	8.64
Older than 1990	83	11.62	12.45	13.28
Upright - 15 cubic foot (approx.), manual defrost:				
July 2001 or newer (ENERGY STAR models)	36	5.04	5.40	5.76
1993 to June 2001	45	6.30	6.75	7.20
1990 to 1993	59	8.26	8.85	9.44
Older than 1990	97	13.58	14.55	15.52

Note: Auto defrost increases operating costs by about 60%. Each cubic foot larger adds about 15 kWh per year.

Medium to small energy users

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Blender	400	0.0560	0.0600	0.0640
Broiler	1,500	0.2100	0.2250	0.2400
Coffee maker (drip):				
2 to 10 cups	1,400	0.1960	0.2100	0.2240
Coffee percolator:				
5 to 12 cups	600	0.0840	0.0900	0.0960
12 to 36 cups	1,090	0.1526	0.1635	0.1744
25 to 100 cups	1,500	0.2100	0.2250	0.2400
Corn popper:				
Oil-type	575	0.0805	0.0863	0.0920
Hot air-type	1,200	0.1680	0.1800	0.1920

Kitchen

Medium to small energy users (continued)

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Deep-fat fryer	900	0.1260	0.1350	0.1440
	1,200	0.1680	0.1800	0.1920
	1,500	0.2100	0.2250	0.2400
Exhaust fan	275	0.0385	0.0413	0.0440
Fondue pot	750	0.1050	0.1125	0.1200
Food dehydrator	400	0.0560	0.0600	0.0640
Food processor	360	0.0504	0.0540	0.0576
Fry pan/skillet	1,300	0.1820	0.1950	0.2080
Garbage disposal	500	0.0700	0.0750	0.0800
Griddle	1,470	0.2058	0.2205	0.2352
Hot plate	1,100	0.1540	0.1650	0.1760
Ice crusher	180	0.0252	0.0270	0.0288
Microwave oven	1,300	0.1820	0.1950	0.2080
Pressure cooker	1,300	0.1820	0.1950	0.2080
Roaster	1,350	0.1890	0.2025	0.2160
Rotisserie	1,575	0.2205	0.2363	0.2520
Slow cooker (high setting):				
2 quart	115	0.0161	0.0173	0.0184
4 to 6 quart	200	0.0280	0.0300	0.0320
Toaster:				
2 slice	1,000	0.1400	0.1500	0.1600
4 slice	1,500	0.2100	0.2250	0.2400
Toaster oven	1,350	0.1890	0.2025	0.2160
Wok	1,000	0.1400	0.1500	0.1600

Cost per use	kWh per load	Cost per use at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Breadmaker	0.4	0.0560	0.0600	0.0640

Laundry, Utility

Estimated laundry use - electric water heater

	kWh per load	Loads per month	Estimated monthly cost at the following rates (per kWh)		
			$0.14	$0.15	$0.16
Clothes washer:					
ENERGY STAR clothes washer including electricity to heat water	0.65	32	2.91	3.12	3.33
Typical clothes washer including electricity to heat water	2.40	32	10.75	11.52	12.29
Electric clothes dryer:					
With typical washer	3.20	32	14.34	15.36	16.38
With ENERGY STAR washer	2.50	32	11.20	12.00	12.80

Note: ENERGY STAR washers remove more water, so they save on drying time.

Medium to small energy users

	Typical wattage	Cost per hour at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Carpet cleaner	1,200	0.1680	0.1800	0.1920
Floor waxer/cleaner	350	0.0490	0.0525	0.0560
Iron	1,000	0.1400	0.1500	0.1600
Sewing machine	100	0.0140	0.0150	0.0160
Sump pump (1/3 hp)	620	0.0868	0.0930	0.0992
Vacuum cleaner	650	0.0910	0.0975	0.1040
Water softener	3	0.0004	0.0005	0.0005

Lighting

Medium to small energy users

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Christmas lights:				
Miniature - 50 per string	17	0.002	0.003	0.003
Miniature - 100 per string	35	0.005	0.005	0.006
C-7 - 25 per string	125	0.018	0.019	0.020
LED - 35 per string	3	0.0004	0.0005	0.0005
Household lighting:				
ENERGY STAR compact fluorescent torchiere	58	0.008	0.009	0.009
Halogen torchiere (not recommended)	300	0.042	0.045	0.048
	500	0.070	0.075	0.080
Standard incandescent	40	0.006	0.006	0.006
	60	0.008	0.009	0.010
	75	0.011	0.011	0.012
	100	0.014	0.015	0.016
	150	0.021	0.023	0.024
Fluorescent:				
4-foot tube	40	0.006	0.006	0.006
Efficient 4-foot tube	34	0.005	0.005	0.005
Circle including ballast	22	0.003	0.003	0.004
	32	0.004	0.005	0.005
Compact fluorescent or LED	9	0.001	0.001	0.001
	15	0.002	0.002	0.002
	20	0.003	0.003	0.003
	27	0.004	0.004	0.004
Outdoor lighting:				
Standard flood/spotlights	75	0.011	0.011	0.012
	150	0.021	0.023	0.024
Compact fluorescent flood/spotlights	23	0.003	0.003	0.004
Halogen flood/spotlights	45	0.006	0.007	0.007
	90	0.013	0.014	0.014
Compact fluorescent	18	0.003	0.003	0.003
Mercury vapor	175	0.025	0.026	0.028
Metal halide	39	0.005	0.006	0.006
High-pressure sodium	50	0.007	0.008	0.008

Outdoor Equipment

Medium to small energy users

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Auto engine heater	600	0.084	0.090	0.096
Battery charger:				
6 amperes output	155	0.022	0.023	0.025
10 amperes output	235	0.033	0.035	0.038
Bug exterminator (large)	145	0.020	0.022	0.023
Electric fence	100	0.014	0.015	0.016
Garage door opener	350	0.049	0.053	0.056
Garden tools:				
Edger	650	0.091	0.098	0.104
Hedge trimmer	300	0.042	0.045	0.048
Weeder	440	0.062	0.066	0.070
Heat tape - 10-foot	50	0.007	0.008	0.008
Lawn mower	1,200	0.168	0.180	0.192
Outdoor grill (electric)	1,500	0.210	0.225	0.240
Snow blower (electric)	840	0.118	0.126	0.134
Snow melting cable:				
100 ft gutter	700	0.098	0.105	0.112
4 ft x 70 ft sidewalk	11,200	1.568	1.680	1.792
10 ft x 50 ft driveway	20,000	2.800	3.000	3.200
Stock tank heater	1,000	0.140	0.150	0.160
Sump pump - 1/3 hp	620	0.087	0.093	0.099
Swimming pool pump - 1 hp	1,800	0.252	0.270	0.288
Well pump*:				
Jet pump - 1/2 hp	1,200	0.168	0.180	0.192
Submersible - 1/2 hp	1,200	0.168	0.180	0.192

*Typical well pump for single-family residence runs about one to two hours per day.

Waterbeds, Personal Care, Health Care

Big energy users

	kWh/ Month	Estimated monthly cost at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Waterbed heater (350-watt) King-size bed at 90°F:				
Room 70°F, with comforter	123	17.22	18.45	19.68
Room 70°F, unmade bed	162	22.68	24.30	25.92
Room 60°F, with comforter	195	27.30	29.25	31.20
Room 60°F, unmade bed	234	32.76	35.10	37.44

Medium to small energy users

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Blanket	200	0.028	0.030	0.032
Curling iron	40	0.006	0.006	0.006
Hair dryer (hand held)	1,200	0.168	0.180	0.192
Heating pad	50	0.007	0.008	0.008
Heat or sun lamp	250	0.035	0.038	0.040
Massager:				
Back	55	0.008	0.008	0.009
Foot	135	0.019	0.020	0.022
Hand	30	0.004	0.005	0.005
Oxygen concentrator:				
Home	400	0.056	0.060	0.064
Portable	42	0.006	0.006	0.007

Electric Water Heater

Big energy users

	Typical wattage	Average use (gals./ day)	kWh/ month	Estimated monthly cost at the following rates (per kWh)*		
				$0.14	$0.15	$0.16
Typical - since 2004 (Energy Factor = .90)	3,800	64.3	406	56.84	60.90	64.96
High-efficiency (Energy Factor = .93)	3,800	64.3	393	55.02	58.95	62.88
ENERGY STAR heat pump (Energy Factor = 2.0)	2,500	64.3	183	25.62	27.45	29.28

*Based on a household of four.

Cost per use*	kWh per use	Cost per use at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Typical clothes washer	2.4	0.34	0.36	0.38
Dishwashing:				
Hand	1.6	0.22	0.24	0.26
Typical dishwasher	2.1	0.29	0.32	0.34
Shower	1.9	0.27	0.29	0.30
Tub bath	2.9	0.41	0.44	0.46

*Based on typical electric water heater listed above.

Workshop

Medium to small energy users

	Typical wattage	Cost per hour of operation at the following rates (per kWh)		
		$0.14	$0.15	$0.16
Motors*				
1/4 hp	350	0.049	0.053	0.056
1/3 hp	440	0.062	0.066	0.070
1/2 hp	580	0.081	0.087	0.093
3/4 hp	850	0.119	0.128	0.136
1 hp	980	0.137	0.147	0.157
1.5 hp	1,440	0.202	0.216	0.230
2 hp	1,900	0.266	0.285	0.304
Tools				
Drills:				
1/4"	240	0.034	0.036	0.038
3/8"	360	0.050	0.054	0.058
1/2"	540	0.076	0.081	0.086
Grinder	312	0.044	0.047	0.050
Router	600	0.084	0.090	0.096
Sander	200	0.028	0.030	0.032
Saws:				
Chain	1,380	0.193	0.207	0.221
Circular	1,200	0.168	0.180	0.192
Jig	360	0.050	0.054	0.058
Table	1,380	0.193	0.207	0.221
Soldering iron	250	0.035	0.038	0.040

*Motor cost of operation depends on the type and use. See "Figuring operating costs" (page 4) for more information.

Hot Tubs, Spas

The cost to operate these products varies widely but averages about $20 per month. To save energy:

- Use a cover
- Buy a large heater to heat the water quickly
- Turn on the heater before use
- Turn off the heater when weather permits

Considerations:

- Location - indoors or out?
- Pump motor size?
- Heated with electricity or natural gas?
- Frequency of use?
- Size in gallons?

For general pump information, see page 16.

Look for this symbol when you shop

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