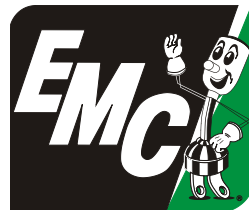


# How to save money on energy at home



*A comprehensive  
guide with money  
saving tips on  
energy use and  
misuse*

**LITTLE OCMULGEE**



This handbook was provided to you by:

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Please call Little Ocmulgee EMC with any questions you may have. A phone directory is available on the last page of this booklet.

## **ELECTRICAL OPERATING COSTS & ENERGY SAVING TIPS FOR THE HOME**

Summer cooling and winter heating, followed by water heating, are traditionally the major users of energy in your home. These few items will usually have the biggest impact on your energy bill. This guide will show you how to make the most of the energy you consume each day. It is broken down into the following sections:

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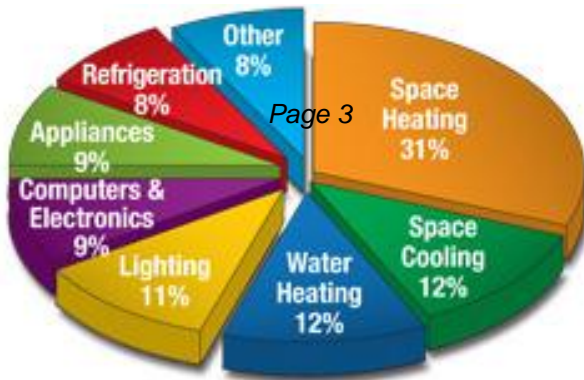


**OVERVIEW:**

## What you need to know about saving money on energy use at home

*This guide is meant to help you become aware of potential energy drains around the house, and the information is meant to give you the power to reduce your energy bill with a few changes around your home.*

**TYPICAL HOME ENERGY COSTS.** The majority of energy costs lie within the heating and cooling of your home, but several other areas also come into play. Water heating, lighting, refrigeration and other appliances all contribute to your monthly electric bill. Take a moment to review the chart below, then look through this guide to find ways to reduce your energy consumption in these key areas.



**AVERAGE BILLING PLAN.** As you are well aware, electricity bills can vary a great deal during the year, depending on air conditioning or heating usage. Our average billing plan is available to residential members who wish to average their payments. The plan provides consistent monthly bills that are more manageable (certain terms apply). You must have completed 12 months of service from Little Ocmulgee EMC before applying for average billing so that an average may be calculated.

**SECTION I:**

# What you need to know about your heat pump and the cost of using air conditioning

*Heating and cooling costs represent a large portion (41%) of your energy bill. Summer air conditioning usage can increase your energy bill significantly.*



**HEAT PUMP AND CENTRAL AIR CONDITIONING OPERATING COSTS**

10 SEER (minimum efficiency)  
Monthly **kwh** usage

Size	Operating 4 hrs/day	Operating 8 hrs/day	Operating 12 hrs/day	Operating 16 hrs/day
2 ton	288	576	864	1152
2 ½ ton	360	720	1080	1440
3 ton *	432	864	1296	1728
3 ½ ton	504	1008	1512	2016
4 ton	576	1152	1728	2304
4 ½ ton	648	1296	1944	2592
5 ton	720	1440	2160	2880

**Heat Pump Auxiliary or Emergency Heat**

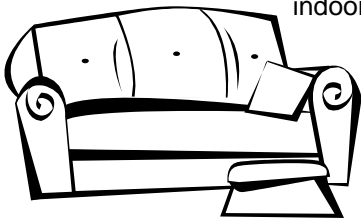
5 kw	600	1200	1800	2400
7.5 kw	900	1800	2700	3600
10 kw *	1200	2400	3600	4800
15 kw	1800	3600	5400	7200
20 kw	2400	4800	7200	9600



# Heating and Cooling Energy Saving Tips

*Heating and cooling your home uses more energy and drains more energy dollars than any other electrical equipment in your home. Here are some tips that will help keep your electric bill in check during the winter and summer months.*

- **A thermostat setting** of 78 in the summer and 68 in the winter is recommended. Each degree setting lower in summer or higher in winter can result in 5% or more in energy costs. Fans will increase your comfort level, especially in warm weather. Remember, however, that in order to save energy dollars with ceiling fans be sure to turn your
- air conditioner thermostat up (this will cause the air conditioner compressor to operate less) and switch to fan only when you are in the area of the fan's air flow.
- Keep window curtains drawn during the day to block out summer sunlight. Keeping east and west windows shaded is particularly important as they get the most sunlight during hot summer days.
- A yearly service inspection by a licensed HVAC contractor is recommended, with emphasis on **correct refrigerant levels** and **keeping coils clean**. A dirty outdoor (air conditioner condenser) coil or indoor (air conditioner evaporator) coil will decrease system efficiency.
- **Filters** should be checked on a monthly basis and changed when dirty (usually 4-6 times per year). Better quality filters (quilted instead of fiberglass) will also insure better indoor air quality.



- Check all inside air vents to insure that they are not obstructed (rugs, furniture), causing poor airflow.



- It is important to understand the value of a properly designed, installed, and maintained heating and cooling duct system. **Duct leaks, uninsulated ducts in unconditioned areas, attic duct heat gain and loss, inadequate returns, incorrect duct and system sizing, improperly hung ducts, crimped ducts, extra long and winding duct runs, etc.** can significantly affect the amount of energy dollars you spend to keep warm in the winter and cool in the summer.



- **Ductwork** in unconditioned areas should be **insulated and sealed with mastic (a duct sealing paste)**, not tape. The average duct system loses 15% to 25% or more energy because of duct leaks. Duct leaks in unconditioned areas can affect comfort, health and safety levels by bringing additional dust, humidity, and other harmful pollutants into the conditioned areas. Properly sealing duct leaks can cut heating and cooling costs in many homes by 20% or more.
- When you have the need to replace your older heating and cooling system, make sure the new air conditioner or heat pump has a 12 SEER efficiency rating or higher. It is also important to select a qualified HVAC Contractor who will properly size your new system by calculating the heat loss/gain of your home. A properly sized system will not only save you energy dollars, but will help insure a more comfortable environment.
- The outside unit (air conditioner or heat pump) should be free of obstructions (weeds, shrubs, etc.) to insure proper air flow. If installed under a ceiling (porch, deck) a clearance of four feet is advised.

## NOTES:

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**SECTION 2:**

# What you need to know about electric space heaters and the cost of using window air conditioners

*Electric space heater usage (used as primary heat or supplemental heat) can quickly add up in energy dollars.*

*During the summer keep your window air conditioners operating at their best, and save energy dollars! Window air conditioner costs are lower when the unit and filter are cleaned on a regular basis.*

## **ELECTRIC SPACE HEATER OPERATING COSTS**

Monthly kwh usage

<b>Size</b>	<b>Operating 4 hrs/day</b>	<b>Operating 8 hrs/day</b>	<b>Operating 12 hrs/day</b>	<b>Operating 24 hrs/day</b>
750 w	90	180	270	540
1000 w	120	240	360	720
1500 w	180	360	540	1080
2000 w	240	480	720	1440



## **WINDOW AIR CONDITIONER OPERATING COSTS**

9.5 EER (minimum efficiency)

5000 btu	63	126	189	378
7500 btu	95	190	285	570
10000 btu	126	152	378	756
15000 btu	189	378	567	1134
18000 btu	227	454	681	1362

**SECTION 3:**

# What you need to know about the cost of electric water heaters

*Some of the common causes for excessive electric water heater running time include:*

**BURNED OUT ELEMENT.** If you are experiencing a shortage of hot water, or there has been a significant increase or decrease in hot water temperature, then you may have an element problem.

**HOT WATER LEAKS.** A leaky hot water faucet, leaking one drop of water a second can waste 60 gallons of hot water per week.

**ADDITIONAL USAGE.** Having guests or adding members to the household will result in additional hot water use for showers and tubs, as well as for washing clothes and dishes.

**THERMOSTAT SET TOO HIGH.** 120 degrees recommended. Most electric water heaters are set on 140 degrees.

**WATER HEATER TANK NOT INSULATED.** An electric water heater that is warm to the touch needs additional insulation. A water heater 'jacket' costs \$10-\$15 and is not difficult to install.

**HOT WATER PIPES NOT INSULATED.** Insulate hot water pipes wherever accessible, especially in unheated areas. If it takes an excessive amount of time for water to become hot when called for, then heat loss through pipes is probably the reason.

## TYPICAL WATER HEATER ENERGY COST

Family Size	Gallons used	Average daily running time	Monthly kwh
2/3	64	3.23 hrs.	<b>436</b>
4	79	3.99 hrs.	<b>538</b>
5	94	4.74 hrs.	<b>640</b>
6	109	5.50 hrs.	<b>742</b>
7	134	6.30 hrs.	<b>844</b>
8	149	7.06 hrs.	<b>946</b>



# Electric Water Heating Energy Saving Tips

*Assuming that your household uses 64 gallons of hot water per day (a family of four probably uses more), your water heater efficiency rating is .86 (ratings range from a low of .86 to a high of .95) and your water is heated to 140 degrees from an inlet water temperature of 60 degrees (average inlet temperature), your water heating costs should average **\$34 to \$35** per month (based on an average of 8 cents per kwh). Many factors, however, will affect your household's cost.*

*There are four ways to cut your water heating bills: turn down the thermostat, insulate the tank and hot water pipes, consider a high efficiency water heater when replacing existing unit and use less hot water.*

- **Turn down the thermostat:** Water heater thermostats today come from the factory set at **120 degrees**. This temperature will generally meet most household needs. Check your thermostat settings, if they are set higher than 120 degrees, consider lowering them. The majority of electric water heaters have two thermostats (heating elements) and both should be set at the same temperature to prevent one element from doing all the work and wearing out prematurely.
- **Insulate the tank:** Insulating the water heater with a 'jacket' can be cost effective in reducing tank losses, especially when the tank is located outside of conditioned space (garage, crawl space, basement). If a tank is warm to the touch, it is losing heat and probably needs a "jacket".
- **Insulate the hot water pipes:** Insulating the pipes is inexpensive and will reduce losses from the tank to faucets, showers, dishwasher, etc. If you feel that it takes excessive time for your pipes to heat up, then they probably need to be insulated.



**SECTION 4:**

# What you need to know about pool operating costs and how to save energy while staying cool in summer

*The filter pump is the major cost of pool operation. Check with your pool maintenance professional to determine the proper number of filter hours needed for your pool. By using a **timer** on the pool pump, running time can be controlled.*

## **POOL PUMP OPERATING COSTS AND ENERGY SAVING TIPS**

Monthly kwh usage

**1/4 Horsepower**

(600 watts)

6 hrs/day-**108** kwh

12 hrs/day-**216** kwh

24 hrs/day-**432** kwh

**1/3 Horsepower**

(745 watts)

6 hrs/day-**134** kwh

12 hrs/day-**268** kwh

24 hrs/day-**536** kwh

**1/2 Horsepower**

(1,014 watts)

6 hrs/day-**183** kwh

12 hrs/day-**365** kwh

24 hrs/day-**730** kwh

**3/4 Horsepower**

(1428 watts)

6 hrs/day-**257** kwh

12 hrs/day-**514** kwh

24 hrs/day-**1028** kwh

**1 Horsepower**

(1656 watts)

6 hrs/day-**298** kwh

12 hrs/day-**596** kwh

24 hrs/day-**1192** kwh

**1½ Horsepower**

(2070 watts)

6 hrs/day-**373** kwh

12 hrs/day-**745** kwh

24 hrs/day-**1490** kwh

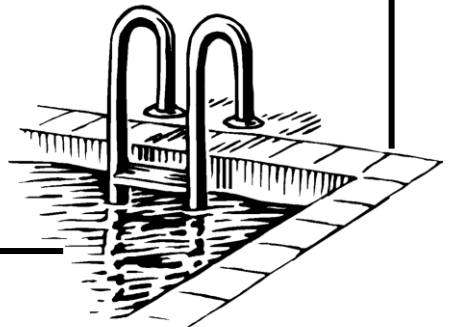
**2 Horsepower**

(2400 watts)

6 hrs/day-**432** kwh

12 hrs/day-**864** kwh

24 hrs/day-**1728** kwh





## SECTION 5:

# What you need to know about spas and hot tub operating costs and how to save energy when using them

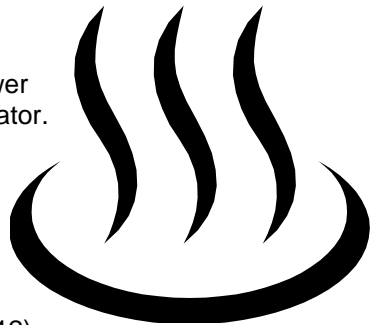
*Spas and hot tubs can use a significant amount of energy, the vast majority going to heating and filtering water. The four major factors that affect operating costs are weather, spa size, operating temperature and filtering.*

**SPA SIZE:** The average 6 ft. by 6 ft. spa (500 gallons) has a 2-horse power filter pump and a 1-horse power aerator. The water is usually heated with approx. 5,000 watts of electric heat.

**OPERATING TEMPERATURE:** The cost of operating these pumps is the same as pool pump operating costs (see operating costs on page 12).

A 5,000 watt electric heater operates at a cost of 40 cents per hour (based on an average of 8 cents per kwh). To reduce your spa's operating costs, keep it covered with a tight fitting insulated cover when not in use. When installing a spa, insulate it well around the sides and bottom. Heat the spa ONLY when you plan to use it, allowing time for warm up, and keep temperature at 102 degrees or lower. Check the accuracy of your spa's thermostat. An inaccurate thermostat can cost you significant energy dollars.

**FILTERING:** Filtering is another major cost of owning a spa. Reduce the number of hours you filter. The average spa requires one-half to one hour of filtering each day. If you have a pool/spa maintenance service, be sure to check with them before reducing filtration hours. Have your filter pump operation checked yearly by a qualified pool/spa maintenance company. A malfunctioning filter pump costs more to operate. When it's not needed, switch off your aerator, the device that adds bubbles to the water jets.





## SECTION 6:

# What you need to know about the electrical costs of using basic household items and how to save energy when using them

*Your home's electrical base usage is the average consumption of a household – not including heating or cooling or other seasonal items (pools, etc.). It includes the household electrical load that operates 12 months a year, such as lights, refrigeration, television, washers, dryers, water heaters, computers, etc.*

*Every household is different, and there are other items that may be considered base usage. Items such as pumps, motors, workshop tools, fans and other household electrical items used 12 months a year should be considered base usage.*

*Use the chart and energy saving tips on the next three pages to understand and possibly lower your base usage over the next year.*

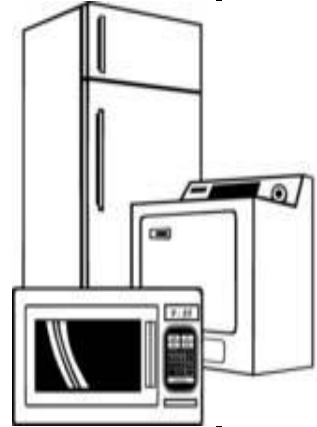


## ELECTRICAL COSTS OF BASIC HOUSEHOLD ITEMS

Average monthly kwh usage

### Kitchen

Refrigerator 20 cu. Ft. upright FF	160 / 200
Refrigerator 17 cu. Ft. S by S FF	140 / 150
Refrigerator 25 cu. Ft. S by S FF	175 / 185
Freezer 13 cu. ft. upright FF	135 / 145
Freezer 18 cu. Ft. upright FF	170 / 180
Freezer 21 cu. Ft. upright FF	240 / 250
Freezer 10 cu. Ft. Chest	65 / 75
Freezer 15 Cu. Ft Chest	90 / 100
Freezer 20 cu. Ft. Chest	115 / 125
Freezer 28 cu. Ft. Chest	155 / 165
Range (self clean)	85
Microwave Oven	23
Toaster Oven	8
Fry Pan	8
Coffee Maker	9
Toaster Oven	35
Dishwasher ( <i>Hot water not included</i> )	37



### Living Area

Color TV (6 hrs/day)	37
Radio (3 hrs/day)	7
Stereo (3 hrs/day)	11
Computer, etc. (4 hrs/day)	37
VCR (4 hrs/day)	6



### Bath / Laundry

Washer ( <i>Hot water not included</i> )	9
Dryer (30 loads)	90
Iron	17
Curling Iron	10



### Miscellaneous

Electric Blanket (8 hrs/day)	42
Ceiling Fan (24 hrs/day)	72
Whole House Fan (10 hrs/day)	150
Water Bed (10 hrs/day)	120

**Lighting** (average family) 210

### Electric water heater

Family of 2	436
Family of 4	538
Family of 6	742



**Well pump** 20 / 70

# Lighting and Appliance Energy Saving Tips

*Here are some easy ways to reduce your base usage.*

- **Lighting:** You can save energy dollars by using household lighting only when needed and replacing high wattage bulbs with lower wattage bulbs (replacing a 100 watt bulb with a 60 watt bulb will save 40%). Using lights in summer when not necessary will also add to air conditioning cost. Switching from incandescent light bulbs to compact fluorescent can save energy dollars. While incandescent bulbs are inexpensive to purchase, they are inefficient and costly to operate. Compact fluorescent bulbs cost more to buy than incandescent, but the energy savings and the fact that they usually last 10 times or more longer than incandescent makes them worthy of consideration. In most cases, the light from fluorescent bulbs is just as bright and offers comparable colors and light quality. For example, a 19-watt fluorescent bulb typically gives off the same amount of light as a 75-watt incandescent bulb. The 19-watt fluorescent bulb will cost \$1.10 per month in electrical costs running 24 hours per day, compared to a cost of \$4.32 for the 75-watt incandescent bulb. Fluorescent bulbs have the same screw-in base as incandescent and are slightly larger, but fit in many different types of fixtures.
- A 75-watt incandescent bulb costs \$4.32/month, while a 19-watt fluorescent bulb costs \$1.10/month*



# Lighting and Appliance

## Energy Saving Tips *continued*

- **Cooking:** The typical cost of electric cooking with standard coils is usually so low for a family that it is difficult to justify new, more expensive options solely on the value of energy saved. There are many new types of burners on the market, but while they save energy, their main advantages are ease of cleaning, greater heat control, and other amenities. To save energy and increase comfort, consider using microwave and convection ovens. They will also release less heat into the home, helping lower air conditioning needs.
- **Dishwashing:** Over 80% of the energy used by a dishwasher can be for heating water (see Electric Water Heating). Models that use less water will also save energy. A model with a booster heater will allow you to set the water heater temperature to 120 degrees yet still have water temperatures in the dishwasher of 140 degrees. Using the air-dry feature and operating the unit at full load capacity will save energy and water. Overall, dishwashers are a better and more efficient way to clean dishes than hand washing.
- **Washers:** Approximately 90% of the energy used by clothes washers is for hot water. (see Electric Water Heating). Models that use less water use less energy. Remember to wash full loads. Use cold water settings as much as possible. This reduces the energy used to heat water. Modern detergents are designed for cold water washing.
- **Dryers:** Remember to clean the filter after every load. This practice will reduce the possibility of fire, increase air-flow, and decrease drying time, which will save energy. Dry a full load of clothes. The dryer uses nearly the same amount of energy to dry a few items as it does to dry a full load.



## SECTION 7:

# What you need to know about your home's insulation and how to use it to save on thermal energy waste

*Checking your home's insulation levels in the attic and floor areas is a fast and cost-efficient way to reduce energy waste and maximize energy dollars. Insulation is measured in R-Value -- the higher the R-Value, the better your insulation will resist the flow of heat.*

**ATTIC:** In the attic, R-30 batt (fiberglass) or blown (fiberglass or cellulose) type insulation is recommended. You should also weather-strip and or insulate doors and other openings that lead to unconditioned areas (attic, basement, etc.) Adequate roof ventilation is important for heat removal as well as humidity control. Attics should have proper ventilation from both top and lower areas of roof. Penetrations (plumbing, electrical, other) from the attic to conditioned areas should be sealed if possible.

**FLOORS:** Floors over unconditioned areas such as basements and crawl spaces should be insulated with batts rated at R-19. It is also important that 6 mil. plastic be placed on the ground or dirt floors of basements and crawl spaces. This plastic will protect the insulation and the home from excess moisture in the ground. Penetrations (plumbing, electrical, other) from the crawl space or basement to conditioned areas should be sealed if possible.

**WINDOWS AND DOORS:** Outside doors and windows should be caulked and weather-stripped. If you have single pane windows, a storm window is recommended. When replacing old windows, select double panes that have low-e coatings on the glass to reduce heat loss. Storm doors are also recommended. Other air infiltration areas of the home (plumbing and electrical penetrations, electrical outlets, etc.) should be sealed with caulk or foam insulation.

**FIREPLACE:** Fireplaces are one of the most inefficient heat sources you can possibly use. It literally sends your energy dollars right up the chimney along with volumes of warm air. When not in use, keep the damper closed. A glass screen is also recommended.



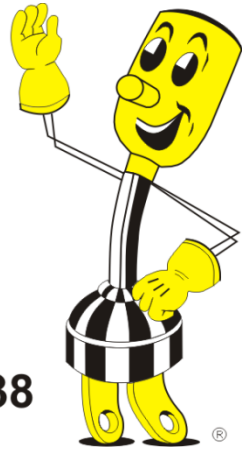
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