HOME ENERGY SAVINGS GUIDE

A resource for operating your home efficiently.

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FIND OUT HOW THE LITTLE CHANGES ADD UP.

Flip the switch. Lower the blinds. Insulate your attic. These sound like simple tasks. Take these steps around your home and you can rack up big savings.

TOGETHER WE SAVE.

This home energy savings guide contains valuable tips on how to improve your home's efficiency.

For more information, please visit LCEC.NET

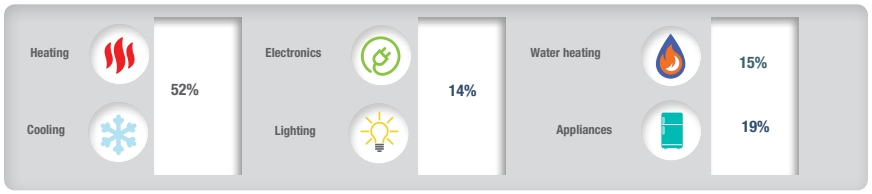
HOME ENERGY SAVINGS

LCEC, your Touchstone Energy cooperative, works hard to hold down energy prices. You can help control your energy costs by evaluating your home and using the following simple tips to trim energy use.

HOME ENERGY COSTS

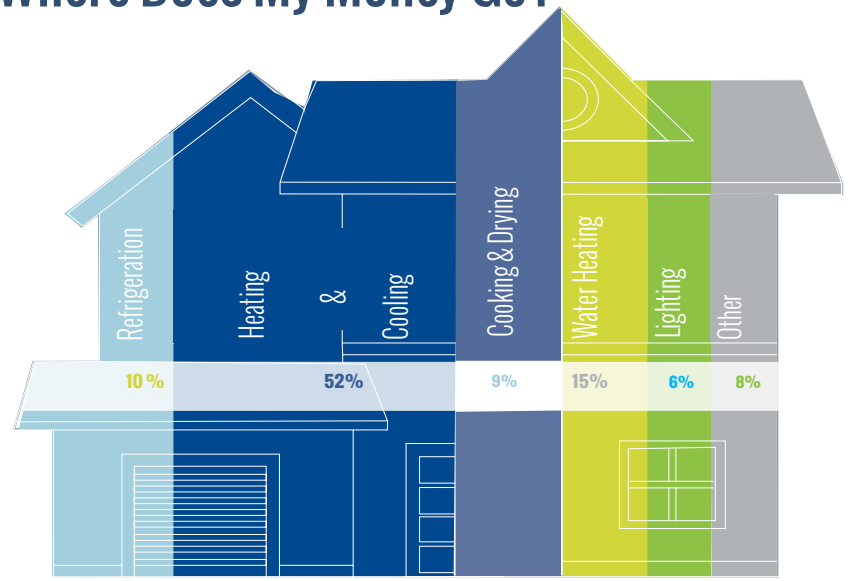
Get a clear picture of which parts of your home use the most energy.

- **The first step in reducing home energy costs is to review last year's utility bills, using the national "percentage" averages below.**



- **When implementing energy-saving measures, be aware of the energy savings from the investment.**
- **Contact LCEC, your local Touchstone Energy cooperative, to review your bills and receive a more accurate estimate. Go to TogetherWeSave.com for more information.**

Where Does My Money Go?



Other includes: telephone and external power adapters, consumer electronics (computer, TVs and DVD player), home office equipment, and small appliances

Annual energy bill usage percentages for a typical single family home

INSULATION

- If you have insulation in your attic graded at R-19 or less, consider bringing it up to R-38 in moderate climates and R-49 in cold climates.
- In cold climates, if you have floor insulation graded at R-11 or less, consider bringing it up to R-25.
- Make sure there are no openings from the attic into the home, e.g., air ducts, openings around chimneys, open cavities into the home.

AIR INFILTRATION

Air that transfers in and out of homes through cracks, crevices and holes increases energy consumption. Here are some helpful tips to avoid air infiltration:

- Seal around pipe penetrations coming through walls.
- During hot and cold weather, ensure windows are closed tightly and locked.
- Ensure weather-stripping around doors and windows is tight.
- Check the ceiling behind the cornice of built-in bookshelves for holes cut during construction.
- Attic accesses stairways should fit tightly into the ceiling and be carefully weather-stripped using insulated sheathing board.
- Remove the whole-house fan if not used and seal and insulate.
- Make sure your outside dryer vent door closes when the dryer is not in use. This requires cleaning away lint accumulation periodically.

HOME ENERGY SAVING TIPS

Assess how your family uses energy in your home.

- Don't leave unnecessary lights on.
- Turn off computers and other office equipment when they're not being used, especially overnight and on weekends.
- A one degree increase in heating setpoint or reduction in cooling setpoint can increase energy use by 3 – 5 percent.
- Taking long showers runs up the electric and water/sewer bills.
- Plug electronic devices such as cable boxes, printer and TVs into power strips to turn off during vacation or long periods without use. Smart power strips make it an easy task to save money!
- Replace shower heads with low flow shower heads.
- When replacing your water heater consider a heat pump water heater which is a much lower operating cost.

GLASS AND WINDOWS

In Southwest Florida, 30 percent of the summer cooling costs are attributed to glass and windows.

Tips from our experts…

- Significant air-conditioning savings can be attained by blocking solar heat before it reaches the windows, or by using special heat-reflecting glass or heat-reflecting glass coatings (residential window tint).
- Reflective glass or reflective glass coatings should be rated to reflect at least 65 percent of all solar heat to be considered efficient in Southwest Florida.
- Internal window coverings trap solar heat between them and the window glass until the heat energy warms the air in that space. The heat-laden air flows up to the ceiling, where it waits for the air conditioner to cycle on and draw it in through the filter. This creates an illusion of efficiency when, in fact, the load on the air conditioner has not been altered.
- Awnings, storm shutters, shade trees and porch or lanai roofs are all very effective in blocking solar heat. To be 100 percent effective, the exterior shading device must never allow direct sunlight to touch the window's surface.
- East or west windows are the main source of intrusive heat. It is recommended to use shading devices and tint on east and west windows since they experience many hours of direct sunlight.
- South-facing windows experience a great deal of direct sunlight in the winter months when the sun rides lower in the sky. In the summer, south-facing windows are largely shaded by the overhanging soffit of the roof.
- Skylights experience many more hours of direct sunlight than any vertical window and should be avoided if possible.
- It is difficult to utilize shading devices to block the sun from entering skylights. Existing skylights can be tinted, covered, blocked or shaded to lessen their load on the air conditioner.
- When upgrading windows, consider energy-efficient features such as double-pane, low-E glass as well as type of frame material.

WASHERS & DRYERS

Drying clothes uses a lot of energy.

- Don't over-dry your clothes. If 50 minutes works, don't set to 70 minutes.
- Make sure to clean the inside lint filter before each drying cycle.
- Periodically check your flexible metal dryer vent hose to ensure it is still tightly connected and not kinked.
- Dryers with service problems should be replaced with an Energy Star® rated machine.
- Wash clothes in cold water.
- Replace old washers with an Energy Star® rated system. They provide great savings from lower water use and fast spins that reduce the need for drying.
- Overfilling your washer can increase your energy use.
- For older washers, set the water level to the amount of clothes to be washed.

WATER HEATER

Your water heater works with many systems in your home.

- Make sure your water heater is set at the lowest point. Try setting it to 120°.
- Insulate accessible hot water lines.
- If your water heater is located in an unconditioned space, consider installing a thermal wrap around it. Take care to install it in accordance with the manufacturer instructions.

REFRIGERATION

Trim your refrigerator's energy use.

- Make sure refrigerator and freezer seals fit tightly when doors close.
- Replace seals if they no longer seal.
- Keep outside coils clean. Dirty coils make your refrigerator compressor work longer to remove heat.
- Setting your freezer below 0° uses extra energy.
- Setting your refrigerator below 37° uses extra energy.
- Ensure refrigerator door seals are tight and coils are clean.
- Eliminate unnecessary refrigerators.

HEATING & AIR CONDITIONING

Heating, ventilating, and air conditioning (HVAC) uses the largest chunk of your home energy dollar. Keep it running "lean and mean."

- HVAC systems should be checked to verify they are moving the correct amount of air. An HVAC technician can tell you if it is.
- Heat pump and air conditioning systems should be checked annually to verify they are properly charged, strictly in accordance with manufacturer guidelines.
- Inside and outside coils should be kept clean and free of debris.
- Change HVAC air filter monthly. LCEC recommends low air flow resistive filters.
- Have an HVAC technician check carefully for duct leaks. Leaks that are found should be sealed with fiberglass mesh and mastic sealant.
- Leaks at the return, air handler and supply can be a major source of high bills. Mobile homes check at the grill, cross over duct and down flow air handler, for leaks.

DUCT-CLEANING TIPS

The return ducts directly behind the HVAC filter are the most likely to be contaminated.

- Use a soft-bristled brush attachment on a vacuum cleaner, and be careful not to bruise or abrade the inner duct wall.
- In cases of severe mold or mildew contamination, the duct should be replaced. Usually replacement approximately 10 feet of duct at the supply and return ducts will suffice.
- As standards are developed, some companies will be certified by the National Air Duct Cleaners Association (NADCA) or an equivalent trade association. It is important to determine that your contractor is certified, and that the technicians performing the work are also certified.
- When a company cleans your ducts, they should clean the air handler, fan blades, coil and drain pan as well.

DUCT REPAIR

Duct leaks can be repaired by using metal foil duct tape or mastic adhesive.

METAL FOIL TAPE

- Most duct leaks, regardless of the type of duct, can be repaired using metal foil duct tape.
- Care should be taken when using metal foil tape. The edges are sharp and can inflict a cut.
- Metal foil tape must be burnished or rubbed down with a plastic putty knife or an old credit card. If this step is neglected, the tape will loosen quickly, and the leak will return.
- All tape must be applied to clean, dry surfaces.

MASTIC ADHESIVE

- A more permanent method of duct repair.
- A thick latex paste, usually reinforced with chopped fiberglass, that is applied in a thick coat over potential and existing leaks.
- Will not fill large cracks or voids. Tape first then reinforce with mastic.
- Once properly sealed with mastic, potential and existing leaks are permanently repaired.

AIR DUCTS

DUCT LEAKS

Studies covering both new and old homes show that duct leaks account for 20 to 60 percent of all air exchange in homes. When conditioned air escapes through duct leaks, homeowners lose conditioned air and unconditioned air is drawn into the home.

Sophisticated blower door testing can identify homes with leaky ducts and measure the severity of the leaks. Some HVAC contractors offer blower door testing for free or at a nominal price. Most duct leaks are readily identified through close visual inspection of the ductwork and occur within 10 feet of the air handler, the area of the duct system exposed to the highest levels of vibration, pressure, humidity and temperature difference.

FLEX DUCTS

- These are round insulated ducts resembling clothes dryer vents, but much larger.
- They are double-wall, insulated and seamless.
- Try to avoid unnecessary kinks, curves and bumps since every irregularity in the duct layout adds resistance and cuts down airflow.
- Flex duct leaks usually occur at joints and junctions.

BOX-SHAPED DUCTS

- Could be made of metal but are usually made of duct board.
- Joints and seams of metal duct systems are secured with special metal closure strips.
- Duct board ducts are simply taped shut. As a home ages, taped seams and joints loosen and begin to leak.

LIGHTING

Take a look at your home's lighting. Consider these points:

- An LED light uses 1/5 the energy of incandescent lighting and lasts up to 50 times longer. Consider replacing incandescent lighting with energy-saving LEDs. They use about one quarter of the energy, last much longer and give off less heat.
- LED lights have different colors, soft white or 3,000 K bulbs are best for indoor use.
- Turn off lights when not needed.
- Don't leave unnecessary lighting on during the day.
- Smart bulbs, outlets and switches allow you to save energy by customizing a schedule that fits your families needs.

HOW YOUR THERMOSTAT SETTING AFFECTS THE COST OF AIR CONDITIONING

The thermostat setting is a critical factor when determining how much it will cost to maintain a comfortable temperature inside your home. This thermostat chart gives the estimated difference in operating costs from one degree setting to another. As the chart shows, lowering the thermostat setting will increase the operating cost. A difference of only one degree (from 78 to 77) will increase the operating cost approximately 8 percent. The difference between a setting of 78 and 73 degrees is about 50 percent. In dollar terms, if the air conditioning portion of your electric bill normally costs $30 a month with a thermostat setting of 78 degrees, lowering that setting to 73 degrees would cost $15 more.

Percent of cost increase		Percent of cost savings
	80°	16%
	79°	8%
NORMAL SETTING	78°	NORMAL SETTING
8%	77°	
18%	76°	
28%	75°	
39%	74°	
50%	73°	
63%	72°	
Cost of keeping room temperatures above and below 78° during the summer months	71°	
	70°	

SOLAR POOL HEATING

Solar pool heaters are the best source for heating your pool because there are no additional operating costs involved. The heat from the sun heats the pool for you. The payback of a solar pool heater is just under three years. The key to a quick return of your money is to retain the heat in your pool by using a pool cover, especially at night when temperatures drop and heat is drastically lost.

Although some advertisements indicate that heat pumps only cost a dollar a day, a 32-amp, 220-volt heat-pump pool heater actually costs just under a dollar for one hour of operation. Think of the daily cost of a heat pump running four to eight hours per day. This misconception may leave customers who have purchased a heat pump unhappy once they have received a high winter electric bill.

SPAS

Your monthly energy costs depend on the temperature of your spa, your usage and your spa pump. Select a spa and heater size that match how quickly you want to heat up the water. Many owners want their heaters to be capable of raising the water to the desired temperature in about an hour. A larger heater can actually cost less to operate than a smaller heater because the shorter heating time minimizes heat loss to the air.

REMEMBER:

- Always use a cover while the spa is not in use or while it's heating. Your spa or hot tub will reach the desired temperature faster and retain heat longer with a cover.
- To conserve energy, simply be sensible. If you use your spa or hot tub daily, use a cover and only turn the heater up when you're ready to use it.
- Using the air pump to make bubbles greatly increases heat loss.

POOL COVERS

Using a quality pool cover when the pool is not in use can reduce heat loss by more than 50 percent. It has also been estimated that a pool cover can cut water evaporation in half. Covers keep the water clean and extend the life of the chemicals in the pool. There are different types of covers (bubble/solar, vinyl and insulated) and various types of systems (automatic, manual, etc.). Talk to your pool contractor to determine the best cover for your pool.

Source: Energy Star

POOLS, SPAS & POOL PUMPS

Researchers have studied pool pump energy use and found that it is the second largest user of electricity for the typical home, averaging 4,200 kW of electricity each year. Pool pumps can amount to $1 or more a day based on current electricity rates in Southwest Florida. Energy Star certified in-ground pool pumps use up to 65 percent less energy than standard pool pumps and can save $450 a year in energy bill costs. Certified above-ground pool pumps use about 17 percent less energy and can save more than $130 over the lifetime of the product.

POOL HEATING

LCEC recommends checking with your local pool company to determine the proper pool temperature and pump running times for your specific type of pool. We also encourage the use of chemicals or pool toppers to lessen the use of their pool heater run times.

	KILOWATT HOURS (kWh)			
Size	Per Hour	6 Hrs/Day	8 Hrs/Day	10 Hrs/Day
1/2 HP	.70	4.2	5.6	7
3/4 HP	1	6	8	10
1.0 HP	1.4	8.4	11.2	14
1.5 HP	1.9	11.4	15.2	19
2.0 HP	2.4	14.4	19.2	24

To calculate your hourly cost, multiply your kilowatt hour amount based on the size of your pool pump by the current kilowatt cost.

Each degree higher adds about 8-12 percent to your energy costs. You can also cut costs by lowering the thermostat to 70 degrees when the pool will be unused for three or four days. Less energy is utilized to reheat a pool for a weekend or special occasion than to maintain a constant temperature all week.

Shielding your pool from wind helps reduce temperature loss. Winds above three to five miles per hour can lower the pool temperature significantly, and a seven-mile-per-hour wind can increase a pool's heat loss by 300 percent. The use of shrubs, trees, or fences can provide an effective windbreaker.

Waterfalls, fountains and other features can also increase heat loss and evaporation.

SELECTING A CONTRACTOR

Some of the work you will want to complete will require the services of a contractor. When selecting a contractor, keep in mind that the best price is not always the best value. Here are some questions to ask when deciding who to use:

- **How long have they been in business?**
- **Can they provide proof that they are state-licensed and carry workers' compensation insurance?**
- **Can they provide the names of neighbors who have used their services?**
- **Are they a member of the Better Business Bureau?**

NOTES:

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FOR MORE INFORMATION ON ENERGY SAVINGS CHECK WITH THE FOLLOWING SOURCES:

- VISIT LCEC.NET
- U.S. DEPARTMENT OF ENERGY – ENERGY.GOV/YOURHOME.HTM
- ENERGY STAR – ENERGYSTAR.GOV
- ALLIANCE TO SAVE ENERGY – ASE.ORG
- YOUR STATE'S ENERGY OFFICE.

For more information, please visit LCEC.NET