Our Energy Plan

Predicting future energy use is not an easy job. The stakes keep getting higher and higher because we all depend on electricity now more than ever. And it’s our job as your cooperative to make sure that energy is available to you when you want or need it. Electricity effects our wallets and our daily lives.

Two of the main components we look at are energy and demand. We have to prepare for the potential demand on our system at any time. That means if each of our members should turn on all their heat pumps, computers and plasma televisions at one time, our system has to be designed to handle that extreme. The chart above shows you the difference in the two components.

In this issue of Alabama Living, you’ll find an article that addresses just some of the issues that we look at when planning for your future electric needs. You’ll see just what a utility looks at to determine your future electrical needs. Everything from your appliance and entertainment choices in your home to the size of your home impacts the decision we have to make.

If demand continues to increase, your cooperative and it’s power supplier will be forced to look for more generation alternatives.

Relatively high costs for construction materials and uncertainty about climate change goals, which could place strict limits on carbon dioxide emitted by power plants, have stalled development of new baseload generation: the large, efficient stations that provide dependable and affordable electric power year-round. New nuclear power plants—sources of clean baseload generation—are stymied by high costs and local political resistance in many areas.

As you make decisions for your home and family, please keep in mind the effects those choices will have on your cooperative. We work hard to keep costs affordable. But through conservation and wise purchases, you can also play a role in shaping the future of your electric cooperative.

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Max Davis is General Manager of South Alabama Electric Cooperative
Don’t let the air out!
*Get back to efficiency basics with weatherization*

Children running in and out of the house on a hot summer’s day may hear a common warning: “Don’t leave the door open—you’ll let the air out!” But how many adults do the same thing without realizing it?

While you may not leave your front door open, air leaks in the attic and basement let valuable air in—and out!—of your home.

Laura Matney, a Building Performance Institute (BPI)-certified building analyst, advises electric co-op consumers to look into weatherization before investing in other energy efficiency measures. “I certainly encourage the selection of energy-efficient appliances, but they don’t provide the amount of savings that proper sealing of air leaks can. We’re trained to look at the basics of building science—seal, insulate, and then look at the equipment. If a homeowner only has money for one area then nine times out of 10 I recommend sealing.”

For example, the U.S. Department of Energy’s ENERGY STAR program advises addressing air leaks and ductwork in your home before investing in a new heating and cooling system; sometimes, those are the real sources of problems rather than your equipment.

If air leaks are generally hidden, where do you start? Most leaks occur in the basement and attic. Starting in your basement, look for gaps and cracks where your cement or block foundation meets the frame of your home. Joists (building supports which are smaller than beams) between the floor and the foundation (called rim or band joists) create cavities, small empty spaces that are hard to insulate and may leak. Not all of the gaps are visible, so ENERGY STAR suggests sealing the top and bottom of cavities around rim joists. Use caulk to seal cracks that are 1/4 inch or smaller; spray foam works best to fill gaps from 1/4 inch to about 3 inches.

It’s also a good idea to seal gaps between the basement ceiling and the floor above, like holes for wiring and water pipes.

In the attic, there are many small areas where air may come in, but focus on large spaces. For example, if your home has dropped soffits—part of the ceiling that has been lowered for lighting design—be sure they’ve been properly sealed. These design elements, common in bathrooms and kitchens, are often built before your home’s drywall is installed, leaving part of your wall open to air from wall or floor cavities.

Even though there may be insulation covering dropped soffits in your attic, be sure all cavities around the soffits have been properly plugged. To do this, place fiberglass insulation inside plastic garbage bags and stuff it tightly into any cavities.

Pay attention to dirty insulation; it’s a big clue that air is moving through the area. And just like the basement, be sure to seal gaps between the attic ceiling and the rooms below, including holes for wiring, lighting, and the attic door.

Weatherizing your home will save you money down the road—an average of $358 each year according to the U.S. Department of Energy Weatherization Assistance Program—but some people may not be able to pay for improvements. As a result of the federal stimulus package, families with household incomes below 200 percent of the national poverty level are eligible for up to $6,500 in energy efficiency improvements. For a family of four, that’s an income limit of $44,100.

For co-op consumers not eligible for the program, the stimulus bill provides a homeowner efficiency tax credit of up to $1,500, or 30 percent, of the cost for upgrades, including insulation that meets the 2009 International Energy Conservation Code.

There are many more ways to protect your home, including weather stripping doors and windows and sealing ducts. For step-by-step instructions on how to weatherize your home and start saving energy dollars today, download Sealing Air Leaks and Adding Attic Insulation, a do-it-yourself guide to weatherization from ENERGY STAR. The guide is available at www.energystar.gov.

*Sources: ENERGY STAR, Building Performance Institute*
It’s been stated many times that electricity is the backbone of every strong economy. We have certainly witnessed this in the U.S., as the development of our unparalleled electric system has mirrored our rise to leader of the world economy. Since the beginning of electrification in the U.S., household consumption has been on the rise. Data published by the Energy Information Administration (EIA) indicates that average U.S. household electricity consumption increased at an average rate of 1.4 percent per year from 1970 through 2007. Growth moderated over the last 10 years of that period, averaging 1.1 percent per year. Recent trends and events are impacting a much slower growth in household consumption, and many utilities are now projecting a continued leveling of household consumption over the long term. The EIA currently projects average household consumption growth to slow to less than one percent per year in both 2009 and 2010. This article examines the underlying influences on household electricity consumption, past and present, and considers how consumption will change in future years.

Current Consumption Levels
Average U.S. household electric consumption in 2005 was 11,480 kWh. The average is by far highest in the South as the market shares for electric space heating, air conditioning, and electric water heating exceed those for all other regions. Note the proportions of end-use consumption presented in the graph represent entire regions and will vary significantly across individual utilities depending on end-use market share.

Growth Factors
Central Electric Heating and Cooling - An increase in the number of homes built with central HVAC systems was a primary reason for high increases in average household consumption from the 1960s through the 1990s. At the national level, the percentage of homes with central air conditioning nearly tripled from 1978 to 2005, increasing from 23 to 65 percent. Similarly, the percentage of homes with central electric heating increased from 16 to 43 over the same period. In many areas of the country, the market shares for central electric heating and cooling systems continue to increase, but they are doing so at slower rates as they approach maximum saturation levels.

Other Appliances – In addition to electric heating and cooling, increases in the ownership and use of electric water heaters, electric kitchen appliances, and various electronic devices have contributed to the rise in household energy use. Particularly in recent years, we have witnessed tremendous growth the use of wide screen televisions (plasma and LCD), not to mention increases in the number of televisions in the home. In addition, the market shares for personal computers, gaming devices, cell phones and other miscellaneous “plug loads” continue to skyrocket, all of which increase electric consumption. When left in idle mode, and even when turned off, these plug loads continue to draw load. For example, a PlayStation 3 game console consumes up to 180 watts during idle mode. That equates to over 1,500 kWh during the course of a year. This is significant, as the National Resources Defense Council estimates that 50 percent of users do not turn off their machines when not actively playing.

Home Size – The “American Dream” for many, if
not most, includes owning their own home. Apparently, when it comes to homes, bigger is better. The average home size in the U.S. increased from 1,630 sq. ft. in 1993 to 1,826 sq. ft. in 2007. The amount of energy required to comfortably heat and cool a home increases as the size of the home increases. In addition, the number of televisions, computers, telephones and other electronic devices tend to increase with home size.

**Economic Prosperity** – During periods of economic prosperity, many consumers get a case of the “let the good times roll” attitude. Householders upgrade to larger homes. Up pop swimming pools and hot tubs. Air conditioners and heating systems may run longer as consumers are willing to spend for a little more for comfort. In short, increases in disposable income typically translate into higher levels of energy consumption.

**Factors Limiting Growth in Household Consumption**

**Declining People per Household** – The average number of people per household in the U.S. has been declining since before 1969, falling from 3.2 in 1969 to an estimated 2.6 in 2007. While household consumption increased over the same period, growth would have been higher had average household size not been on the decline. The decline in household size has slowed considerably, and current projections indicate a leveling before reversing to a slight increasing trend around 2020. (Author’s note – As anecdotal evidence, my household size fell from 3 to 2 in 2007, and average consumption dropped 15-20 percent. I no longer have to say “Close the door”, “Turn off the lights and television”, and “No more 20-minute showers!”).

**Vintaging of Major Appliances** – Major appliances break down and must be replaced periodically. The vintaging of major appliances, or “out with the old and in with the new”, significantly impacts total household consumption. The enactment of federal appliance standards has resulted in the replacement of older inefficient HVAC systems with new higher efficiency systems. Central heating and cooling systems installed today use approximately 20-30 percent less energy than units installed 15 years prior. Expect the vintaging of major appliances to continue impacting average household consumption until all the “clunkers” have been replaced with models that meet existing standards. Utility planners must take care to address the vintaging of major appliances in their forecasting process.

**Compact Fluorescent Lighting** – Sales of compact fluorescent lighting (CFL) are booming, and there appears to be no slowing over the near term. EIA reports that 200 million CFL bulbs were sold in 2007. One 13 watt CFL produces about the same output as one 60 watt incandescent bulb. Energy Star qualified CFLs use approximately 75 percent less energy than a standard incandescent bulb and last nearly 10 times longer. EIA reports that lighting represented nearly 16 percent of household consumption in 2007. The Energy Independence Security Act of 2007 mandates wattage on general-service incandescent light bulbs be reduced by about 28 percent by 2014, and then to 65 percent by 2020.

**Energy Efficiency and Conservation** – With the rise in costs for building and operating new electric generation facilities, electric utilities are implementing energy efficiency and conservation programs to minimize increases in consumption and to help defer the need for new generation facilities. Compact fluorescent lighting, Energy Star appliances, and insulation and weatherization programs are examples of cost effective measures directed towards residential customers.

**Economic Recession** – This year, analysts predict the economy will shrink anywhere from 2.0 to 2.5 percent, the worst performance since 1946. In addition to a slumping economy, electricity prices are generally increasing across the country. EIA reports that residential prices at the national level will increase approximately 2.3 percent in 2009 and 2.0 percent in 2010. There is no guarantee average U.S. household consumption will decline in 2009, but it is certainly possible that consumers will limit electricity use when possible in light of the economic recession and rising prices.

Information provided by John Hutts, GDS Associates, Inc., Marietta, GA.
Conserve101 Saving Tips:

► Use ceiling fans. They make you feel about 1°-2° F cooler than the actual temperature.

► Clean or replace AC filters monthly or as needed. A well-maintained cooling system will run more efficiently and use less energy.

► Plug energy leaks by caulking and weather stripping all seams, cracks and openings to the outside. You can save 10 percent or more on energy bills.

► Install a programmable thermostat. Program your thermostat to automatically turn up the cooling when you are not home and when you are sleeping.

► Keep thermostat set at 78°-80°F. Each degree below this adds 5%-8% to cooling costs.

Sources
- Residential Energy: Cost Savings and Comfort for Existing Buildings by John Krigger and Chris Dorsi
- Touchstone Home Energy Savers Guide
- www.touchstoneenergysavers.com
- www.eere.energy.gov/consumers/
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