CALIFORNIA GUIDE to ENERGY EFFICIENCY

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SENATOR BOB MARGETT
TWENTY-NINTH SENATE DISTRICT

Dear Friend:

California's energy is an important issue that affects us all, from municipal services to businesses, to families and senior citizens on fixed incomes. Everyone is affected by a rise in energy costs or a sudden power shortage.

The California Legislature continues to work on energy issues, creating incentives for Californians to conserve, finding ways to keep rates reasonable and protecting the State's natural resources while keeping the lights on.

This brochure contains helpful tips on how you can cut your energy costs and reduce the likelihood of outages. It provides information on how to conserve energy year-round and what to do in the event of an emergency power outage. I hope you will find this information helpful.

Sincerely,

Senator Bob Margett
29th Senate District

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Year-Round Energy Saving Tips

California's electricity supplies are most strained on hot summer days. There are simple things you can do right now to help maintain service and save money too.

- Avoid running large appliances such as washers, dryers, electric ovens and dishwashers during peak demand hours (5 am to 9 am and 4 pm to 7 pm).
- Turn out lights in unoccupied rooms and convert to compact fluorescent bulbs.
- Unplug (or recycle) your spare refrigerator or freezer if it isn't used much. (Remove the doors for safety reasons and to prevent mold.)
- Set refrigerator to 36 - 40 degrees; freezer to 0-5 degrees. Set water heater no higher than 120 degrees.
- Use toaster ovens or microwave ovens to cook small meals. Cover pans when cooking.
- Buy Energy Star appliances, products and lights.
- Replace furnace and air conditioner filters monthly and change filters regularly to keep the unit running efficiently; clean lint screen in dryer with each use.
- Install energy and water saving low-flow showerheads. A quick shower uses less hot water and energy than a bath.
- Do only full loads when using your dishwasher, clothes washer or dryer. Line-dry clothes (especially towels) whenever you can, and use the air-dry setting on your dishwasher.
- Use ceiling fans to distribute heated/cooled air more evenly.
- Reduce "leaking energy" in electronics. If possible, unplug electronic devices and chargers that have a block-shaped transformer on the plug when they are not in use (i.e. cell phone chargers).
- Clean your refrigerator's coils frequently.

Winter Energy Saving Tips

- Set your thermostat at 68 degrees or lower during the day, and 55 degrees, or off, at night or when the home is unoccupied. For every two degrees you lower your thermostat during the winter, you will save approximately 10% on your heating bill (whether you heat with gas or electricity). If you have a heat pump, follow manufacturer's instructions.
- Don't close registers in individual rooms. This puts a strain on your heating/cooling system.
- Be careful when using space heaters. Be sure to follow manufacturers' safety guidelines.
- Weatherstrip and caulk around windows and doors to reduce the flow of air through small holes and cracks.
- Wrap the water heater with an insulated blanket to reduce heat loss. Newer models may have insulation built into the unit – check the owner's manual to determine if additional insulation can be added.
- Layer clothing since loose layers of clothing and hats will trap body heat.
- Open drapes and/or shades on sunny days to let in the sun's heat. Close them at night and on cloudy days.
- Have your heating system professionally checked once a year.

Summer Energy Saving Tips

- Set your thermostat at 78 degrees or higher when at home and 85 degrees or off when home is unoccupied.
- Use exterior shading devices or deciduous trees and plants to shade your home and windows from the sun.

- Turn off furnace pilot light during the non-heat season. Call your gas company to re-light the pilot safely.
- Provide shading for your outside air conditioning unit and save up to 10% on your cooling costs.
- Close drapes or shades on sunny days to keep out the sun's heat. Open windows at night to cool your home.
- Replace your air conditioning filters once a month. Save up to 5% in cooling costs.

Power Outages

Power outages can be caused by problems in your home or by storms or equipment failure affecting the entire neighborhood or region. If you experience a power disruption, first check to see if the lights are out in neighboring homes. If they are, chances are that you are part of a larger power outage.

If your home is the only one on the street without power, the problem may be in your service panel or circuit breaker box. Check to see if the main circuit breaker has flipped to the "off" or "trip" position. If it has, firmly push the switch to the "off" position and then to the "on" position. If the circuit breaker trips again, this could indicate a serious electrical problem. Call your power company.

To be prepared for the worst when the power goes off, follow these helpful hints:

- Unplug appliances, computers and electronics, even if they are plugged into a surge protector, to prevent damage from a power surge. Leave one light on so you'll know when the power returns.
- Have enough food, water, flashlights (or candles) and necessities to last 72 hours.
- Have a plan to reunite family. Know your family's schedules.
- If driving, treat every street intersection controlled by traffic lights as a four-way stop.

- Never use natural gas kitchen ovens for heat.
- Never use non-electrical space heaters indoors that are designed for outdoor or construction use.
- Open refrigerator and freezer doors only when necessary.
- Have extra blankets on hand.
- Have a telephone, radio and clock that don't require electricity.
- Check on elderly neighbors.

Storm Preparation

Before the Storm Hits

Become familiar with your service panel location and learn how to operate the main circuit breaker.

Prepare a basic emergency kit and store it in an accessible place. This kit should contain:

- Flashlight
- Matches
- Bottled water
- Extra batteries
- Wind-up clock
- Manual can opener

Fallen Power Lines

Stay away from fallen power lines including anything they touch, like trees, fences and any other objects or equipment. Report them to your local utility company.

Home Energy Saving Checklist

Be sure to call your utility to learn about financial incentives or other assistance available near you. There are many ways to improve your home's energy efficiency. Use the following checklist to assess your current energy situation and set goals for you and your family.

Energy Conscious Home Improvements

- ☐ Insulate attic, exterior walls and crawl spaces
- ☐ Caulk between window/door frames and walls
- ☐ Weatherstrip windows and doors
- ☐ Install shade screens or storm windows
- ☐ Insulate water heater
- ☐ Replace dangerous, inefficient halogen torchiere lamps with Energy Star torchieres
- ☐ Plant trees to shelter your home from the elements
- ☐ Repair leaky faucets
- ☐ Repair duct system air leaks

Energy-Efficient Technologies

- ☐ Energy Star-labeled products should be a top consideration in new or replacement purchases for your home including appliances, electronics, windows and air conditioners
- ☐ Double-pane windows
- ☐ Programmable thermostat
- ☐ High-efficiency furnace/air conditioner or heat pump
- ☐ Compact and other fluorescent light bulbs
- ☐ Motion sensors or timers for security lights
- ☐ Energy-efficient refrigerator
- ☐ Low-flow shower head
- ☐ Dishwasher with energy-efficiency setting
- ☐ Clothes dryer with moisture sensor
- ☐ Ceiling, whole house fan or attic fan
- ☐ Certified Energy Star Home

How Much Does it Cost?

An important part of keeping your energy bills low is knowing what it costs to run your household appliances. Following is a list of the most-used appliances and the average costs to run each of them. Costs are based on average California rates and average energy use in a single-family home. Future energy costs will vary and the cost to operate your appliances will change accordingly.

Appliances

• Clothes Dryer	
Electric	30¢-60¢ per load
Gas	10¢-16¢ per load
• Clothes Washer	3¢-23¢ per load
• Dishwasher	8¢-9¢ per load
Electricity to heat water	37¢ per load
Gas to heat water	10¢ per load
• Fan	1¢-5¢ per hour
• Freezer	$15-$30 + per month
• Oven	
Electric	30¢-60¢ per hour
Gas	5¢-11¢ per hour
• Refrigerator	
16 cu ft.	$10-$18 per month
20 cu ft.	$12-$22 per month
• Water Heater	
Electric	$20-$70 per month
Gas	$7-$19 per month

Lighting

• Incandescent 100 watt	1¢ per hour
• Equivalent Fluorescent 27 watt	1¢ per 4 hours

Heaters

• Heater, Portable	9¢-18¢ per hour
• Gas Furnace	
Smaller Home	$16-$40 or more per month
Larger Home	$41-$200 or more per month
• Electric Central Heater	
Smaller Home	$35-$100 or more per month
Larger Home	$114-$400 or more per month

Air Conditioning

• Central A/C	48¢-66¢ per hour
• Window A/C	9¢-28¢ per hour

Generator Safety

Backup generators are useful in restoring energy in the event of a power outage. However, they can be hazardous to homeowners and utility workers. The primary dangers are carbon monoxide poisoning, electric shock or electrocution, and fire.

Always operate a generator according to the manufacturer's guidelines and instructions. All generators must be connected in an approved manner to reduce danger to utility employees who may be working to restore power and to protect your electrical equipment and appliances from damage.

Other Generator Tips

- Never run a generator indoors; the exhaust fumes can be deadly.
- Never plug a generator into a wall outlet. Doing so can backfeed energy into the utility system, posing a serious threat to utility employees.
- Be careful refueling your generator. Gasoline vapors are heavier than air and will quickly seek the nearest source of ignition, resulting in an explosion and/or fire.
- Use only grounded extension cords that are properly rated for your equipment.

For more information on generator safety, contact your local utility company or visit www.usfa.fema.gov and search for "generator safety".

Energy Efficient Businesses

Businesses of every size can do their share. Even if you rent your office space, these tips can help you save on your monthly office utility bills.

Lighting and Appliances

- Turn off lights in conference rooms, photocopy rooms, break rooms, and at times, specific areas of office buildings that are unoccupied.
- Turn off extra desk lights and personal lamps.
- If your building has a cafeteria or break room with a refrigerator, be sure it isn't an older, energy-hogging model. Replace it with a new model, using the annual energy cost on the Energy Star label to find the most economical buy.
- If your office has a hot and cold bottled water stand, turn the hot water element off during the evening and weekends. It only takes about 15 minutes for the element to heat and begin dispensing hot water.

Make Your Office Equipment More Efficient

- Make certain computers have the sleep function activated.
- Turn off monitors and printers when they are not in use. These two pieces of equipment are the largest energy users.
- Remove all screen savers that conflict with the sleep-mode capability of the computer.
- Go paperless whenever possible, and avoid printing or photocopying during peak demand hours. Printing is a high-energy use.
- If your office has electric typewriters or adding machines, turn them off when not in use.
- If possible, unplug electronic devices and chargers that have a block-shaped transformer on the plug when not in use.

Resources

In addition to your utility provider, here are some home energy efficiency resources:

- California Energy Commission
  1-800-555-7794
  www.consumerenergycenter.org
- U.S. Department of Energy
  Energy Efficiency and Renewable Energy Network
  1-877-337-3463
  www.eere.energy.gov
- U.S. Environmental Protection Agency (EPA)
  www.epa.gov (search for 'energy efficiency')
- Lawrence Berkeley National Laboratory
  Environmental Energy Technologies Divison
  eetd.lbl.gov
- Energy Star Appliances & Products
  www.energystar.gov

Assistance for Low-Income Households

The State offers programs to assist low-income consumers.

The Low-Income Home Energy Assistance Program (LIHEAP) in the Department of Community Services and Development provides financial assistance to eligible households to offset the cost of heating and cooling. Call 1-866-675-6623 or visit www.csd.ca.gov.

The California Alternative Rates for Energy (CARE) program allows eligible low-income customers to receive a 20% discount on their electric and natural gas bills. Contact your local utility for more information, or visit www.cpuc.ca.gov/static/consumers/programs/lowincome.htm

Contacts

Major California Utilities – Emergency Numbers

- Los Angeles Department of Water & Power
  1-800-DIAL-DWP (342-5397)
  Hearing & Speech Impaired (TDD)
  1-800-HEAR-DWP (432-7397)
- Pacific Gas & Electric
  1-800-743-5002
  Hearing & Speech Impaired (TDD)
  1-800-652-4712
- Sacramento Municipal Utility District (SMUD)
  1-888-456-SMUD (7683)
  Hearing & Speech Impaired (TDD)
  916-732-6630
- San Diego Gas & Electric
  800-611-SDGE (7343)
  Hearing & Speech Impaired (TDD)
  619-235-0497
- Southern California Edison
  1-800-611-1911
  Hearing & Speech Impaired
  1-800-352-8580
- Southern California Gas Company
  1-800-427-2200
  Hearing & Speech Impaired (TDD)
  1-800-252-0259

Call your local gas and electric provider for information on low-interest loan programs such as weatherization improvements and appliance upgrades.

Glossary of Terms

This glossary offers explanations of a few terms you may find helpful in understanding California's energy efficient standards.

AFUE (Annual Fuel Utilization Efficiency) – A measure of the heating efficiency of furnaces. The higher the number, the more efficient.

BTU (British Thermal Unit) – A BTU is a unit of measure for heating or cooling. The amount of energy needed to change the temperature of one pint of water by one degree Fahrenheit.

CAL-ISO – California Independent Systems Operator. California's electricity system and transmission operator.

Climate Zones – Sixteen geographic regions within California, each with different weather conditions. A home's energy efficiency requirements are determined by the climate zone in which it is located.

HERS – The Home Energy Rating System (HERS) is an accepted, standard method for measuring a home's energy efficiency. For your HERS rating or more information, contact 916-985-0151.

Cooling Capacity – The rating of an air conditioner expressed in BTUs per hour.

Energy Factor – The efficiency rating for water heaters. The higher the number, the more efficient the heater.

Energy Star label – The symbol for energy efficiency. Energy Star products use less energy than other products, are made by many major manufacturers, and are widely available.

Fenestration and Glazing– Transparent or translucent material used in windows or skylights (i.e. glass or plastic).

Heating Capacity – The rating of a furnace expressed in BTUs per hour.

HSPF (Heating Seasonal Performance Factor) – The heating efficiency measure used to rate heat pumps. The higher the number, the more efficient the heat pump.

Lumen – The brightness of a light bulb, regardless of type.

NFRC Window label – National Fenestration Rating Council (NFRC) has developed a rating system that reports on a window's energy-related performance.

Mandatory Measures – The energy efficient features and devices required in all new California homes.

R-Value – Indicates how well a material prevents heat flow. It is used to compare insulating characteristics of different materials. The higher the R-value, the greater its insulating capabilities.

SEER (Seasonal Energy Efficiency Ratio) – The cooling efficiency rating used to rate central air conditioners. The higher the number, the more efficient the cooling system. The minimum rating is 12.

SHGC (Solar Heat Gain Coefficient) – A measure of how well your shade-creating products (drapes, blinds, tinted windows, etc.) stop solar heat.

Stages of Emergency

Stage 1 Alert – Energy reserves have fallen below 7%. Consumers are asked to voluntarily turn off lights and other electronic equipment to reduce power.

Stage 2 Alert – Reserves are below 5%. Power will be interrupted to large users who receive rate discounts in exchange for agreeing to be interrupted.

Stage 3 Alert – Reserves are below 1.5%. This authorizes the California Independent Systems Operator, which oversees the power network, to call on utilities to initiate "rolling blackouts" among consumers to prevent a collapse of the entire electricity system.

Thermal Mass – A material used in home construction that stores heat and later releases it as the temperature drops (such as tile floors, brick fireplaces, etc.). It helps to diminish temperature variations within the home.

Torchiere – An electric floor lamp giving indirect light.

U-Value – A measure of heat flow through a surface or enclosure (includes insulation, framing, and windows). The lower the U-value, the better the assembly insulates.

Watt – A measure of electric power at a point in time.

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compliments of Senator

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