

SEDAC ENERGY SMART TIPS



High Rise Condominium



Many people are familiar with the terms pollution, global warming, and energy crisis. Nowadays, the media is constantly talking about 'Going Green' to help our environment, but what does 'Going Green' really mean? There are many different ways to implement 'Green' technologies in buildings, and small adjustments can result in large improvements for both the environment and building residents' and owners' utility consumption.

The U.S. has 5% of the world's population yet consumes 23% of the world's energy. Of that percentage, 28% is used for transportation, 33% for industrial uses, and 39% for buildings. In particular, residential buildings account for 21% of the total energy consumption. According to the U.S. Department of Energy,

residents typically use most of their energy for space heating (32%), space cooling (10%), water heating (13%), and lighting (12%). If condominium owners target these four categories, they can significantly improve their overall energy consumption.

Most condominium owners have a hard time deciding where to start on the path to energy efficiency. If you own a house, you can make improvements to the envelope or HVAC system. However, if you live in a condominium, it is difficult to make these changes since changing the exterior of a condominium cannot be decided upon by just one person.

So where should a condominium owner start? By simply looking at your HOA (Homeowners Association) fee, you can determine what

changes you may be able to make on your own. HOA fees generally include insurance, common area maintenance, electricity, water, sewer, and sometimes other amenities such as a fitness center and a pool. Some older condominiums may also include utilities such as gas. For example, if utilities are not included, you can start by taking a look at your hot water system since water heating typically accounts for 10%-13% of your monthly energy costs.

At SEDAC, we are determined to help you find a variety of energy efficiency options for your condominium. This brochure explains the steps to take and the measures to implement to help you create the most comfortable and energy efficient environment in your home.

The Smart Energy Design Assistance Center performs energy assessments on various building types. Each building type has different energy requirements. SEDAC's Energy Smart Tips help building operators identify energy cost reduction measures.

SMART ENERGY DESIGN ASSISTANCE CENTER

PROVIDING EFFECTIVE ENERGY STRATEGIES FOR PUBLIC AND PRIVATE BUILDINGS IN ILLINOIS

Smart Energy Tips for Condominiums

Free = FREE \$ = LOW COST \$\$ = MODERATE COST \$\$\$ = EXPENSIVE

SPACE HEATING & COOLING

Free - Solar heat gain has its advantages and disadvantages. During summer months you want to avoid heat gain since it overworks your cooling system. On the other hand, it can help heat your home during the winter. One simple method is to make sure blinds and drapes are drawn shut during the day in the summer, especially on south facing windows. The more reflective they are, the more they will reflect unwanted solar radiation back to the outside. In the winter, open blinds and drapes to allow for solar heat gain which helps heat the space during the day.

Free - Use kitchen, bath, and other ventilating fans wisely. In just one hour, these fans can exhaust the entire volume of air in a condominium. Turn off kitchen, bath, and other ventilation fans within 20 minutes of finishing cooking or bathing to retain conditioned air, or install a timer switch.

Free - In the winter, set your home thermostat to a temperature as low as comfortable (65–68°F is suggested) when the apartment is occupied and turn down the thermostat to 50–55°F when the condominium is unoccupied for more than 4 hours.

\$ - An alternative to window enhancement is to use interior window Low-E (low-emissivity) films. Energy films block 97% of UV rays and 70% of thermal infrared light, thereby blocking heat gain in the summer and retaining warmth in the winter. Make sure your windows satisfy the requirements for Low-E films.

\$ - Air sealing with caulk and weather stripping can reduce your home's heating and cooling costs by as much as 30%. Tighter air sealing around windows and entry doors helps insulate your home efficiently in addition to creating a healthier indoor environment.

\$\$ - Consider installing a programmable thermostat that will automatically adjust the temperature of your home according to your daily schedule.

\$\$\$ - Consider installing high R-value insulating shades for windows that can reduce conductive, convective and radiant heat loss while reducing air infiltration, light, and noise.

WATER HEATING

Free - Reduce the temperature setting of your water heater to the warm setting (115–120°F) so that you do not use extra energy maintaining unused water at high temperatures.

Free - Set your clothes washer to the cold water setting

instead of hot. Switching from hot to cold water not only saves the energy used to heat the water, but it can also reduce fading, shrinkage, and wear of clothes.

\$ - Install a smart showerhead that helps save hot water when you take a shower. Smart showerheads will reduce the flow of water reaches 95°F to a mere trickle until you flip a switch or pull a cord to begin the flow of the hot water. You can save up to 2,700 gallons of hot water each year.

\$\$ - Consider replacing your old laundry machine or dishwasher with an efficient, water-saving ENERGY STAR® model to reduce energy usages. An ENERGY STAR front-loading washing machine can cut water use by nearly 40% and electricity use up to 65% compared to a conventional top loader.

\$\$\$ - Install a heat pump water heater that can save the average household almost \$300 per year in electric bills compared to a standard electric water heater.

LIGHTING

Free - Properly position lights by trying to illuminate the entire activity area without creating distracting glares or shadows. You can position your light source closer to the area you want lit and avoid over-lighting unused areas. Check the bulb's packaging for the minimum starting temperature and ensure it is the right design for the location.

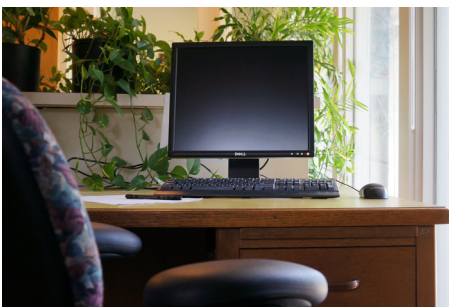
\$ - If you have fluorescent tubes, upgrade to low wattage T5s or T8s with electronic ballasts instead of T12s with magnetic ballasts. For fluorescent tubes, a smaller diameter lamp is typically more energy-efficient.

\$ - If you have incandescent lamps, consider replacing them with compact fluorescent lamps (CFL). CFLs last longer and use up to 75% less energy than incandescent light bulbs. For example, by replacing 10 incandescent light bulbs in your home with CFLs you could save up to \$44 per year.

\$\$ - If you are using CFLs in your home, and if you want even more efficient and longer-lasting light bulbs. Consider replacing them with LED light bulbs. LEDs have a lifespan of 60,000 hours versus 10,000 hours for CFLs and use less energy.

\$\$ - Consider installing occupancy sensors where manually operated lights are automatically switched "off" after a certain period of time. Potential locations for occupancy sensors are entrance doors, laundry rooms, hallways, and storage spaces that are only periodically occupied.

Computer Power Management Tips



Free - Desktop or laptop computers consume anywhere from 65–250 watts, while monitors use 35–80 watts. Many people falsely believe that a computer in screen saver mode consumes less energy, but it actually consumes nearly as much as when on or even more if it is a graphic intensive screen saver. By configuring your computer to go into hibernation mode when not in use, consumption can be reduced to 5–10 watts for the computer and 1–2 watts for the monitor.

\$\$\$ - Sometimes we forget to turn off certain appliances or electronics after we have left. Allowing these devices to run throughout the day can waste significant amounts of energy. By installing a mobile application on your laptop or cell phone, you can remotely control some electronic devices around your home whether you are at your office or on vacation.

Tips for Other Usages

WATER

\$ - Install a low-flow showerhead that uses 1.5 gallons per minute and can reduce water usage by at least 50%. One method to check if you should replace your showerhead is if your showerhead fills a one-gallon bucket in less than 20 seconds, you should consider replacing it.

\$ - Consider installing aerators on faucets to save 0.5 gallons a minute and save 3-17 gallons per day per faucet.

\$\$ - Every time we flush the toilet, we use up to 5-7 gallons of water. On average, a person flushes the toilet 6 times a day at home. By upgrading to low-flow or dual flush toilets, we can reduce water consumption to 1-1.6 gallons per flush.

\$-\$\$ - Repairing a leaking faucet or toilet can save gallons of water. One method to check for a leaking toilet is to put food coloring in the toilet tank. If the color begins to appear in the bowl within 30 minutes, you have a leaking toilet flapper that should be repaired.

REFRIGERATOR

Free - Check that the temperature inside your refrigerator is between 35°F and 38°F. In most refrigerators, this is the mid-level setting on the temperature control. Freezers should operate at 0°F. Keeping the temperatures just 9°F colder than the recommended levels can increase energy use by as much as 25%.

Free - If you are renovating your kitchen, do not position your dishwasher next to the refrigerator. The heat produced by the dishwasher will require your refrigerator to work harder.

\$\$-\$\$\$ - If you still have a refrigerator from the 1980s, replace it with an ENERGY STAR qualified model and save over \$100 each year on your utility bills. Unplug and remove any old, secondary fridges or freezers and save an additional \$100 a year. Using one large refrigerator is more efficient than running two smaller ones.

DISHWASHER/LAUNDRY

Free - Wash only full loads. The dishwasher /laundry will use the same amount of water whether it is half empty or completely full.

Free - Use the "No-heat" dry feature. Most dishwashers have a built-in heating element to dry dishes. The "No-heat" dry feature circulates room air through the dishwasher with a fan. To save even more energy, turn the dishwasher off after the final rinse and open the door to air dry.

Free - Drying full, but not oversized loads, is more energy-efficient than drying smaller loads and the 'permanent press' (cool-down) cycle can reduce energy. It does not use heat for the last few minutes, but drying continues as cool air is blown through the tumbling clothes.

INTRODUCING GREEN PRODUCTS

Home Automation System



Home automation systems conveniently automate the control of your home and make your life easier allowing you to reference information on devices such as lighting, appliances, thermostats, and security systems around your home. You will be able to control the settings from your office or anywhere using either a laptop or cellphone.

Personal Solar Panels



Personal solar panels are a great solution for today's world. Most people carry at least two different electronic devices on them all the time. Personal solar panels are designed to be small and portable. The operating voltage ranges from 1.2V to 3.7V, and is enough to charge a cell phone for two hours of use. when the sun is out.

Insulating Window Shades



In the winter, 40% of the heat escapes through the windows. During the summer, heat from the sun's rays can make it harder to keep a home cool. Typical blinds have an average R-value of 2.5 while honeycomb shades are better insulators and have an R-value between 3.25 to 5.0. Higher R-values equal greater insulating power. Insulating window shades qualify for the federal tax credit.

HOW TO READ ENERGYGUIDE

Are you looking for new energy efficient appliances for your condominium? Make sure you check the yellow EnergyGuide label. It will tell you how much energy an appliance uses, and will help you easily compare different products.

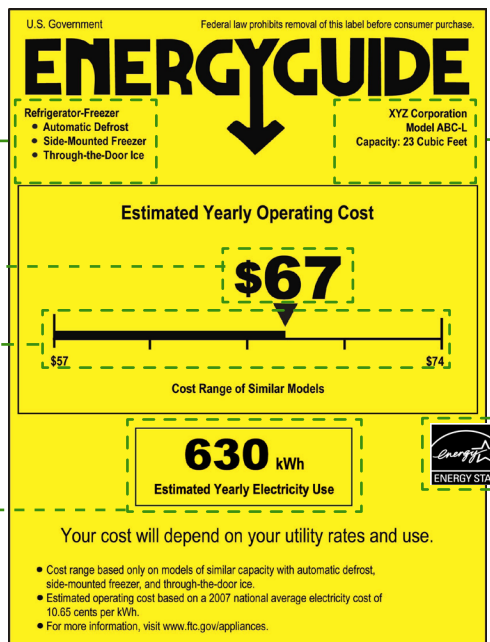
Lists key features of the appliance you are looking at and the similar models that make up the cost range below.

- Product Manufacturer
- Product Model
- Product Size

What you might pay to run the appliance for a year, based on its electricity use and the national average cost of energy. The cost appears on labels for all models and brands, so you can compare energy use just like you would price or other features.

The cost range helps you compare the energy use of different models by showing you the range of operating models with similar features.

An estimate of how much electricity the appliance uses in a year based on typical use. Multiply this by your local electricity rate on your utility bill to better judge what your actual operating cost might be.



If you see the **ENERGY STAR** logo. It means the product is better for the environment. It uses less energy than standard models.

Source: Adapted from Federal Trade Commission (April 2008)

SEDAC

WHO WE ARE

SEDAC is sponsored by the Illinois Department of Commerce and Economic Opportunity in partnership with investor-owned utilities to achieve energy efficiency savings in buildings.

SEDAC is an applied research unit of the School of Architecture at the University of Illinois at Urbana-Champaign.

The 360 Energy Group is a collaborative partner working with SEDAC. Support is also provided by the Energy Resources Center at the University of Illinois at Chicago.

SEDAC PROGRAMS

- Energy Assessment
- Public Sector Retro-Commissioning
- New Construction Design Assistance
- Public Sector New Construction Incentive Review
- Public Housing Efficient Living
- Training and Outreach
- Energy Incentive Guidance



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ENERGY SMART RESOURCES FOR CONDOMINIUMS

ComEd/Ameren Illinois Energy Efficiency Programs

Free programs that provide financial incentives and technical suggestions to encourage consumers to save money and energy.

<https://www.comed.com/home-savings/pages/default.aspx>
<http://www.actonenergy.com/>

Buyer Guide for Energy Efficiency Products

Detailed information on Energy efficiency products.

http://www.energystar.gov/index.cfm?c=products.pr_find_es_products

Federal Tax Credits for Consumer Energy Efficiency

Federal tax credits available for energy-efficient products or renewable energy systems for your home.

<http://energytaxincentives.org/>

Self-Check: Check How Much Energy You Are Using

Estimates what uses energy in your home and ways to reduce usage.

<http://hes.lbl.gov/consumer/>

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