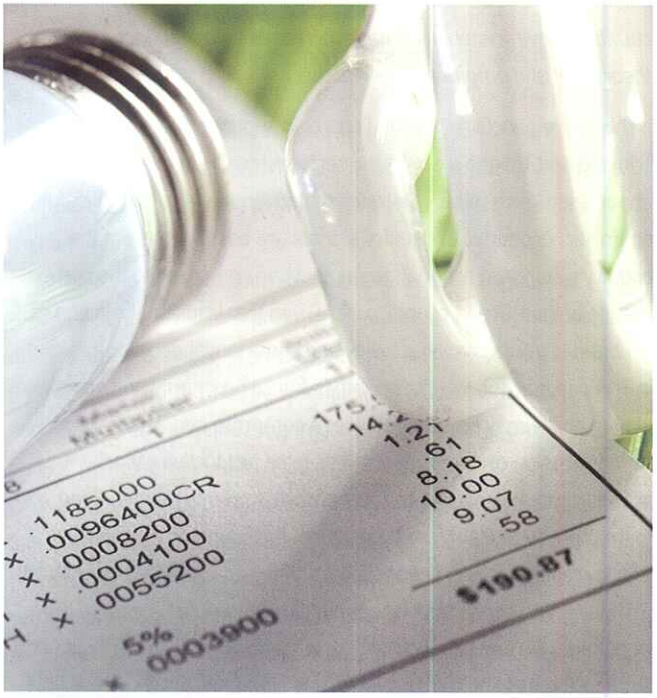
ENERGY EFFICIENCY STARTS WITH YOU

HOW CHANGING LAMPS, BEHAVIOURS CAN LOWER ENERGY BILLS

By Serene Ramsumair



Energy efficiency may be defined as using less energy to provide the same output, or using the same input to get more output. Basically, it is squeezing all that you can out of the resources you have. But improving your energy efficiency will require awareness and persistence: awareness of how much energy you use right now, and persistence to make your habits more energy-efficient ones.

While talking to my sister some weeks ago, she mentioned that her electricity bill was about TT$320 each month for her household of five (i.e., TT$64/person). This is very high compared to my household of two, which has a bill of about TT$70 each month (TT$35/person). This suggests to me that her habits may not be as energy-efficient as they could be. The first thing I did was to help her understand her electricity bill. You must be aware of not just why you are being charged a certain amount, but more importantly, how much energy you are actually consuming. You cannot manage what you do not measure; therefore, read your electricity bill and know how many kilowatt-hours you are consuming. If you pay further attention to the rates being charged per kilowatt-hour, you will notice in Trinidad and Tobago that the domestic rate increases as you use more electricity.

So if you have consumed 1,925 kWh of electricity, you are charged TT$0.26 for the first 400 kWh, then TT$0.32 for the next 600 kWh, and finally, TT$0.37 for each kWh above 1000 kWh. Therefore, you should understand that the more you use, the more expensive each kilowatt-hour will become.

There are many things you could do to reduce your electricity bill, but it is best to make the easiest changes that will have the largest impact first. These easy but effective changes are called "low-hanging fruit."

Typical low-hanging fruits include changes in the way you use your most energy-intensive appliances, which are usually air conditioning units, refrigerators, lights, electric stoves and ovens, electric washers and dryers, and electric water heaters. Pay special attention to any appliance that uses electricity to heat or cool, or which becomes hot or cold. (Yes, that includes incandescent light bulbs, which are too hot to touch just after being switched off.) Whenever possible, one should buy appliances that are Energy Star-certified.

AIR CONDITIONING

There are so many things that can cause your air conditioning unit to operate inefficiently, but generally, you should aim to prevent heat from entering the room, and ensure that the unit is properly installed and maintained. The following can help you to cool the room to the same temperature, but with less energy required.

You can install and maintain your AC unit well if you:

- Wash the filter for the wall-mounted evaporator (indoor fan) with

water regularly.

- Install the condenser (outdoor unit) in a shaded area, secured on vibration isolation pads and ensure that the air is allowed to flow freely across the fan. The cooler you keep this outdoor unit, the less energy it will need.
- Buy energy-efficient air conditioning equipment such as units with Inverter Technology, and with high SEER (seasonal energy efficiency ratings), at least higher than 14 SEER.
- Set your AC temperature as high as possible, as the lower you set the temperature, the more the energy the AC unit will consume. You should be comfortable with a temperature of about 23°C.
- Ensure that when your AC unit is being installed, the indoor unit should not be mounted too close to the corners of the room. It is better to have the unit at the centre of a wall so that the air is distributed more evenly to all occupants in the room.

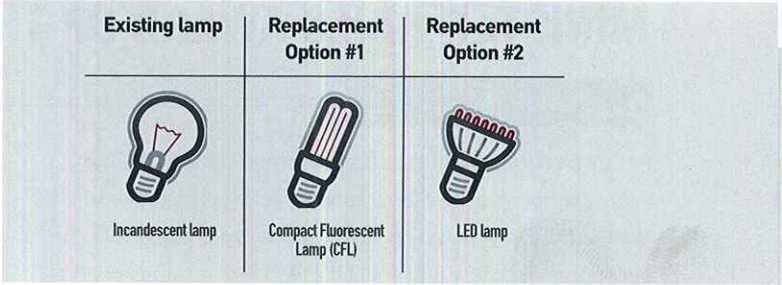
You can prevent heat from entering your air-conditioned rooms if you:

- Insulate under the roof using Styrofoam or radiant barrier foil. A ceiling about two feet under the roof also prevents significant heat gain to the room.
- Insulate the wall with Styrofoam. Concrete walls trap heat from the sunlight, and even after the sun sets, you can feel the heat coming off the surface.
- Avoid cooling rooms that have external walls being hit by the sun.
- Ensure that the room is as airtight as possible and prevent heat gain to the room from sunlight. Fill spaces around and under your doors with door sweeps and door seals, similarly for windows.
- Install air curtains over doorways to cool rooms if they have no doors, or if doors are opened frequently.
- Tint the glass windows or install external shading for the windows to prevent heat from the sun from entering the room. Blinds are good for keeping the light out of the room, but once the heat has come through the window, the blinds cannot send the heat back out, and it will slowly warm the colder air.
- Avoid using AC to cool down the room for only one person. Maybe a fan will do the job.
- Avoid using incandescent and halogen bulbs in the cooled rooms, as those bulbs produce a lot of heat.

Of course, as much as possible, you should make use of natural ventilation by opening windows and doors so that the AC unit can be turned off while maintaining a comfortable temperature. Use insect screens to keep pests out of your home as well.

LIGHTING

As much as possible, you should make use of sunlight to brighten your room, as then you can turn off your lamps.



You can also change your lighting to more energy-efficient types. Incandescent lamps, halogen floodlights and fluorescent T12 lamps are typical lamps that have replacement lamps that can produce the same amount of light, but use less energy to do it.

Incandescent lamps come in typical brightness ranging from 25 W to 100 W. These may be replaced by compact fluorescent lamps (CFLs) ranging in sizes from 8 W to 23 W. Compact fluorescent lamps will last 10 times as long as the incandescent lamps, so if you want to compare the value of the lamps, compare the cost of 10 incandescent lamps to that of one CFL.

LED lamps are also a good replacement for incandescent lamps. LED lamps are available in brightness ranging from 7 W to 40 W to replace the incandescent lamps, but if you want to compare the value of the lamps, compare the cost of 25 incandescent lamps to one LED lamp, because LED lamps last 25 times longer.

Fluorescent tubes are becoming more and more energy-efficient; as the diameter of the tube gets smaller, the efficiency of the lamp increases.

We hope to have piqued your interest in recognising energy efficiency as a powerful tool to control household costs and realising what we can do to reduce our electricity bills.

Some may have us believe the problem is too complex and requires special expertise to solve. But a small shift in how we value resources can be the catalyst to change behaviours in ourselves and our communities.

Changing your behaviour is often the most effective and least expensive way to reduce energy use, so make change today!

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